Spread User's Manual SPReAD Version 0.90

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TABLE OF CONTENTS

Spread User's Manual	. 1
Preface	. 4
Limitations	. 4
Getting Started	. 5
Some Important Conventions in this Manual	5
Prerequisites For Use of Software	. 5
What do I need to access SPReAD?	. 5
What are cookies?	. 5
What's next?	. 5
Troubleshooting	. 5
Account Configuration	. 6
Security	. 6
Important Steps	. 6
Internet/PHIC Intranet Connection	. 6
Login	. 6
Logout	. 6
Menu Reference	. 6
HOME	. 6
M.O.R.	. 7
MESSAGES	7
FILES	. 6
SEARCH	. 6
STATS	. 6
ADMIN	. 6
HELP	. 6
ABOUT SPREAD	6
Spread Administration	. 8
User Account Management	. 8
Data Dictionary Management	8
Content Management	8
Frequently Asked Questions	. 9
How do I get an account?	. 9
What do if I forgot my password?	. 9
Why don't the graphs display properly?	. 9
What do I do if I find a bug?	. 9
Appendices	. 9
Appendix A: Figures and Screenshots	10
Appendix B: Server Installation Quick Guide	15
Appendix C: Software Modules	17
SPReAD Design Paradigm	17
Modules	17
External Modules	17
Directories	17
PHP Scripts	17
Appendix D: Database Logical Design	19

Appendix E: Data Warehouse Design	
Logical Design	
Conceptual Design	22

Appendix F: MySQL InnoDB Setup	. 26
About InnoDB	. 26
InnoDB Section of /etc/my.cnf	. 26
Starting MySQL with InnoDB Enabled	. 27
Appendix G: Backup and Recovery of the SPReAD Database	. 28
Binary Backup	. 28
Using mysqldump	. 28
Recovery	. 28
Appendix H. Server OS Upgrade and Maintenance	. 29
Installing Additional Debian Packages	. 29
Configuring Sources.list for Security Updates	. 30
Installing Security Updates	.31
Distribution Upgrades	.32
Backing Up	.34
Appendix I: Data Warehouse Metadata Description	. 38
Appendix J: Installing MyODBC in Windows	.43
Appendix K: Connecting The Database To SPSS	.56

Preface

SPReAD stands for Statistics, Policy and Research Archive and Database.

As the Philippine Health Insurance Corporation (PHIC) recognizes the demand for data and information by various stakeholders of the National Health Insurance Program, a system for easy retrieval of accurate and reliable information is urgently needed. Among the most critical is the demand for information on policy development, policy research and policy advocacy. While some data and information are available, these are not in user-friendly formats and not easily retrievable.¹

This system was proposed by Corporate Planning of PHIC to address this demand for information. **SPReAD** is, in fact, envisioned to support the information needs, not only of PHIC but also of external stakeholders as an archive of internal and external data.

The development team of **SPReAD** is composed of the following people:

- 1. Herman Tolentino, MD (project consultant) Lead application developer, database designer, system documentation
- 2. Alvin Marcelo, MD (project consultant) Project Manager, systems analyst, SQL query designer
- 3. Inocencio Maramba, MD, MSc (project consultant) Network specialist and systems analyst
- 4. Ariel Betan Application developer, data warehouse designer
- 5. Eric Patdu Application developer, JPGRAPH specialist

SPReAD was developed using the following open-source² tools:

- 1. Debian Linux (version) http://www.apache.org
- 2. Apache Web Server <u>http://www.apache.org</u>
- 3. PHP Scripting Language <u>http://www.php.net</u>
- 4. MySQL database <u>http://www.mysql.com</u>
- 5. JPGRAPH http://www.aditus.nu/jpgraph

Limitations

SPReAD is a functional prototype software that has not been thoroughly tested in the real environment considering the time allotted for development (20 days). Bugs in the meantime, can be reported to Dr. Herman Tolentino (<u>hermant@i-manila.com.ph</u>).

¹ Management Sciences for Health, Context and Background, Specifications for Short Term Technical Activity Project - SPREAD

² Open-source: <u>http://www.opensource.org/</u>

This application is proof-of-concept that data from different sources can be integrated into a single platform for storage and analysis. It is not a full-blown decision-support application as it is intended. However, it uses software conventions that easily enable scaling up to extreme operating conditions with software and hardware upgrade.

Getting Started

Some Important Conventions in this Manual

Menu items are displayed in this font: **MENU ITEM.** Tips are displayed in this font: *TIPS*. Buttons are displayed like this: **Button**. Figures are displayed in this font: **Figure**. All figures are in Appendix A.

Prerequisites For Use of Software

It is assumed that the end-user knows basic Windows PC operation, web browser use, and Excel spreadsheet basics.

What do I need to access SPReAD?

SPReAD can be accessed using a browser (Internet Explorer 4+, Netscape Navigator 4+) on a personal computer running Windows or Linux that is connected to the PHIC intranet or the Internet. It is assumed that you will have a user account in the **SPReAD** web site given to you by Corporate Planning staff.

What are cookies?

SPReAD uses cookies to store personalized information. Make sure your browser has cookies enabled.

What's next?

the software hardware Once vou have and mentioned above. just type: http://spread.mudfish.info/index.php (or the URL where it resides in the intranet) in the URL box as shown below. Then be ready to type in your login name and password in the Login box as shown in Figure 1. You should see the web site as shown. When you have successfully logged in you should see SPREAD as in Figure 2a for Administrators and Figure 2b for ordinary users, Appendix A.

Troubleshooting

If there are problems getting to the site, check the following:

1. Your computer's network connection (Are you connected the intranet or the Internet?)

- 2. Your login name and password (Have you been given one by Corporate Planning?)
- 3. URL Spelling (Did you mistype it?)
- 4. Site could be down (Administrators doing maintenance, power failure, etc.) check with MIS

Account Configuration

To change your account information, go to MY ACCOUNT (See Figure 2b).

Security

Security for **SPReAD** is implemented at the application level and server level. At the application level, you are required to type your login/password combination to access the site. Users are allowed to alter only their own account information.

Important Steps

Internet/PHIC Intranet Connection

Make sure your computer is already connected to the Internet or PHIC intranet. Check with your network administrator before carrying out subsequent steps in using the application.

Login

When logging in, make sure your Caps Lock key is not enabled. **SPReAD** uses case-sensitive login names and passwords. After typing in your login name and password in the appropriate boxes, click on the **Login** button.

Logout

SPREAD contains sensitive information, which is not for public consumption. Do not forget to click the **Logout** button when you are through with your session. Otherwise, there might be unauthorized viewing of sensitive information by other personnel in your workstation while you are away.

Menu Reference

HOME

Clicking on this menu link brings you to the front page, where the news items are. This menu link is available whether you are logged in or not.

M.O.R.

Clicking on this menu link brings you to the form for uploading MORs³. This menu link becomes available only after logging in. After selecting the **region**, **month** and **year**, click on the **Browse** button to pick out the file from your computer. Clicking on the **Submit** button will send the file to the **SPReAD** web site and into the **SPReAD** database (**Figure 3**).

MESSAGES

Clicking on this menu link shows you system messages. These messages are of two types:

- 1. Sent by you (you as sender)
- 2. Sent to you (you as recipient)

Each row corresponds to one message and details include Sender/Receiver, Date/Time message was sent and Subject (Figure 4). To read messages, click on the Message Subject under the SUBJECT column. After clicking on a message subject, you will then have the option to reply to it or not. Click on the **Reply** button to reply to a message.

FILES

This section contains files that fall under 6 categories:

- 1. Circulars
- 2. Forms
- 3. Memoranda
- 4. Office Orders
- 5. Policy Instruments
- 6. Special Orders

Each row (Figure 5) corresponds to one file and contains the following details:

- 1. Region
- 2. Date of publication
- 3. Filename (Clicking on FILENAME allows you to download the file.)
- 4. Title
- 5. Who uploaded the file
- 6. For whom is the file
- 7. From whom is the file

Files can be searched using the **SEARCH** Tool (see below).

SEARCH

This is the **SPReAD** Document Search (**Figure 6**). Using this tool, you can look for any document in the file repository⁴.

STATS

This is the **SPReAD** section where all the graphs displaying standard information are found (**Figure 7**). Basically these graphs are generated in real-time from the backend database and should change with MOR submissions, and database feeds from the system databases.

³ Monthly Operational Reports in CSV format coming from regions

⁴ File collection

ADMIN

This is the administration section of **SPReAD**. For more details read Spread Administration below.

HELP

This is the help section of **SPReAD**. It is in the format of frequently asked questions, with the question links most often clicked found at the top of the list⁵.

ABOUT SPREAD

This is information about how to get started with SPReAD.

Spread Administration

NOTE: This section is for use by owners of administrator⁶ accounts only (**Figure 8**).

User Account Management

SPReAD uses simple account management based on two levels: administrator and ordinary user. User features that can be controlled with account management web site language⁷ and administrator function.

Data Dictionary Management

Links in the Admin Menu covered by this topic are:

- 1. **Region** These are Region codes used throughout the site.
- 2. File Cat These are file categories used by Files.

Content Management

Links in the Admin Menu covered by this topic are:

- 1. **News** Updates news posted on the front page. There are two news categories: Private and Public.
- 2. Files This section lists files available for download and viewing.
- 3. Help This section updates the question list for online Help on the main menu.

Content management on the **SPReAD** web site covers 4 main areas:

1. <u>MOR File Upload.</u> When a MOR file is uploaded it changes the Region Stats box on the front page as well as graph content in the **STATS** section.

⁵ This is a software-driven feature and changes the order of question display if other question links are clicked more than the others.

⁶ A user who has explicitly been given authority to manage the spread web site.

⁷ Prototype stage (proof-of-concept)

- 2. <u>News content.</u> News content is displayed on the front page the moment the publish flag is checked in the Admin **News** section.
- 3. <u>Messages</u> Though not part of the Admin Menu, messages are part of the dynamic content of the **SPReAD** web site.
- 4. <u>Documents.</u> These are the files uploaded in the Files section of the Admin Menu. The files are searchable using the SEARCH tool.

Frequently Asked Questions

How do I get an account?

To get an account, you have to get in touch with Ms. Gilda Salvacion Diaz, Corporate Planning, PHIC or send her email at <u>gdiaz.corplan@philhealth.gov.ph</u>.

What do if I forgot my password?

Go to the web site and in the Login box, there is a link for lost passwords. When you click on it you will be prompted for your email address (which hopefully you remember) and your region. You will receive a new password by email. When you read your email and see your new password, log in at the site immediately and change this to one you will easily remember.

Why don't the graphs display properly?

If there is no data or if the graphing library⁸ has not been included in server setup, graphs will not display properly. You should check with the system administrator to find out what the cause is.

What do I do if I find a bug⁹?

If there is a bug, copy the error message on the screen and send email to <u>hermant@i-manila.com.ph</u>.

Appendices

- A. Screenshots
- B. Quick Guide To Server Installation
- C. Software Modules
- D. Database Logical Design
- E. Data Warehouse Logical Design
- F. MySQL InnoDB Setup for SPReAD Database
- G. MySQL InnoDB Backup and Recovery
- H. Server OS Upgrade and Maintenance
- I. Data Warehouse Metadata Description
- J. Connecting to SPSS

⁸ Linux GD Library: C graphics library for Linux

⁹ Software glitch or error (typically an error message is seen on the browser)

Appendix A: Figures and Screenshots



Figure 1. Login Box



Figure 2a. Administrator logged in.



Figure 2b. Ordinary user logged in.

🎒 SPREAD - Microsoft Interne	t Explorer	17			_ 5	×
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vontes	⊥ools <u>H</u> elp	Address 🥙 http://spread		script=549387	▼ ∂Go	
↓ • → • ③ 🖸 🖄 Q	🖻 🥴 🖧 - 🍠 🖬	Choose file			2 X	
SPREAD Statistical Policy and Resear HOME M.O.R. MESSAGES Logout System Administrator- NCR is logged in. Click logout button to end this session. Logout	ch Archive Database (FILES SEARCH S M.O.R. UPLOA You are uploading a format (CSV) as co time. Select Region NCR	D.74 a data fil Inverted Files of type:	(C.) Alt Files (".")	P E Ø me _Installers (1.3.1_02 zoms ayura croProse	My Docume My Receive My Receive My Receive mysql netbeans New Folder	
Recent Logins System Administrator 2002-11-03 21:59:40 System Administrator 2002-11-03 21:56:00 System Administrator 2002-11-03 21:56:01 Zo02-11-03 10:47:42 Eric Patdu 2002-11-03 10:47:42 Eric Patdu 2002-11-03 09:28:01	Select Month Jan Select Year 2002 Send this file Submit	Browse				4
ē]				🙋 lt	nternet	

Figure 3. MOR Upload Form

SPREAD - Microsoft Interne	t Explorer					_ 8 >
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>T</u> ools <u>H</u> elp	Address	🛃 http://spread.mudfish.info/in	dex.php?script=459923	- e	Go 🔢
⇔ • ⇒ - 🕲 🖸 🖾 Q	🖻 🎯 🖏• 🕯) 🖬 🖻 👘				
SPReAD						
Statistical Policy and Resear	rch Archive Datal	oase 0.74				
HOME M.O.R. MESSAGES	FILES SEARC	H STATS AI	DMIN HELP ABOUT SPRE	AD System	Administrator-NCR	
Logout			Su	inday, 03 Nov 2002	2 10:02PM MANILA	
	MESSAGE	2				2
System Administrator- NCR is logged in. Click		·	Message List New Mes	sage		
logout button to end this session						
	MESSAGES F	OR YOU			3	
Logout	FROM Maramba Cito		12 Oct 2002 5:57PM	SUBJECT RE: Test		
	Maramba Cito		12 Oct 2002 5:52PM	Test		
Description in a	Administrator	System	12 Oct 2002 5:39PM	Test		
Recent Logins	CENT MECCA	eee				
2002-11-03 21:59:40	TO	SENT	SUBJE	ст		
2002-11-03 21:56:00	Betan Ariel	12 Oct 200	2 6:27PM Test Fi	rom Admin		1
System Administrator 2002-11-03 19:15:07						
Eric Patdu						
Eric Patdu						
2002-11-03 09:28:01						
Desian Otata						
Region stats	1 0 1 100000					
nap://spread.mudtish.info/index.	pnp/script=459923	220 12000			Internet	
Start SPREAD - Micr	osoft I 🎽 mor	J2.jpg - Paint		1 - P & S & D - 1	┛⊿ѷѷ҄≣С)ฃ	12:14 PM

Figure 4. Messages

<u>View Favorites Iools H</u>	elp Addres	s 🙋 http://spread.mudfish	.info/index.php	?script=462865	- 6	Go 🔢
· 🛛 🕅 🖓 🖾 🕲 🔄	B- 3 1 8					
leAD						Ī
Policy and Research Archiv	e Database 0.74					
.O.R. MESSAGES FILES	SEARCH STATS	ADMIN HELP ABOUT	SPREAD	System Ad	Iministrator-NCR	
			Sunday,	03 Nov 2002 1	0:04PM MANILA	i I
trator-NCR is	D FILE REPOS	SITORY				
Click logout						
end this CLICK ON	FILENAME TO DOW	NLOAD				
end this CLICK ON	FILENAME TO DOW FILE REPOSITORY	NLOAD				
end this CLICK ON SPREAD REGION	FILENAME TO DOW FILE REPOSITORY DATE FILENAME	NLOAD TITLE	UPLOAD BY	то	FROM	
end this CLICK ON SPREAD REGION CATEGOR	FILENAME TO DOW FILE REPOSITORY DATE FILENAME YCIRCULARS	NLOAD TITLE	UPLOAD BY	то	FROM	
end this CLICK ON SPREAD REGION CATEGOR All	FILENAME TO DOW FILE REPOSITORY DATE FILENAME 2002- cir2.pdf 11-01	ADDENDUM TO CIRCULAR 33, S-2001	UPLOAD BY System Administrator	TO THE RETIREES AND PENSIONERS OF	FROM FRANSCISCO T. DUQUE, MD, MSc	
end this SPREAD REGION CATEGOR All Logins Administrator 33 21:59:40	FILENAME TO DOW FILE REPOSITORY DATE FILENAME (YCIRCULARS 2002- cir2.pdf 11-01 2002- frontpage_P 10-30	ADDENDUM TO CIRCULAR 33, S-2001 ABIF.sxw No title	UPLOAD BY System Administrator	TO THE RETIREES AND PENSIONERS OF To the recipients	FROM FRANSCISCO T. DUQUE, MD, MSc From sender	
end this CLCK ON SPREAD REGION Administrator 03 21:59:40 Administrator 03 21:59:40 Administrator 03 19:15:07 Ju	FILENAME TO DOW FILE REPOSITORY DATE FILENAME (YCIRCULARS 2002- 11-01 2002- frontpage_P 10-30 cir1.pdf	ADDENDUM TO CIRCULAR 33, S-2001 ABIF.sxw No title PIN and PEN	UPLOAD BY System Administrator System Administrator System Administrator	TO THE RETIREES AND PENSIONERS OF To the recipients ALL PHILHEALTH MEMBERS COMING	FROM FRANSCISCO T. DUQUE, MD, MSC From sender FRANCISCO T. DUQUE, MD, MSC P	
end this CLCK ON SPREAD REGION CATEGOR All Administrator 03 21:59:40 Administrator 03 19:15:07 Ju 03 10:47:42 CATEGOR	FILENAME TO DOW FILE REPOSITORY DATE FILENAME (YCIRCULARS 2002- cir2.pdf 11-01 2002- frontpage_P 10-30 cir1.pdf	ADDENDUM TO CIRCULAR 33, S-2001 ABIF.sxw No title PIN and PEN	UPLOAD System Administrator System Administrator System	TO THE RETIREES AND PENSIONERS OF To the recipients ALL PHILHEALTH MEMBERS COMING	FROM FRANSCISCO T. DUQUE, MD, MSc From sender FRANCISCO T. DUQUE, MD, MSc P	
end this CLCK ON SPREAD REGION CATEGOR All Administrator 03 21:55:40 Administrator 03 10:47:42 03 10:47:42 03 09:28:01 NCR	FILENAME TO DOW FILE REPOSITORY DATE FILENAME CONTENTION 2002- frontpage_P 10-30 cir1.pdf cir2.pdf	ADDENDUM TO CIRCULAR 33, S-2001 ABIF.sxw No title PIN and PEN Another form	UPLOAD BY Administrator System Administrator System Administrator	TO THE RETIREES AND PENSIONERS OF To the recipients ALL PHILIFEALTH MEMBERS COMING	FROM FRANSCISCO T. DUQUE, MD, MC From sender FRANCISCO T. DUQUE, MD, MSc P	

Figure 5. Files Section

File Edit View Eavorites	Tools Help Address A hits // second sudfish into /index she2earish 5020/9
©⊎⊡⊡Q	
Statistical Policy and Resea	rch Archive Database 0.74
HOME M.O.R. MESSAGES	FILES SEARCH STATS ADMIN HELP ABOUT SPREAD System Administrator-NCR
Logout	Sunday, 03 Nov 2002 10:06PM MANILA
System Administrator- NCR is logged in. Click	SPREAD DOCUMENT SEARCH
logout button to end this session.	Search for documents here. Please enter one or more search criteria in the fields provided.
Logout	Select Region Select Category Select Region Select Category
Recent Logins	No. (Exact search) S - (Exact search)
System Administrator 2002-11-03 21:59:40 System Administrator	Max 10 characters To To
2002-11-03 21:56:00 System Administrator 2002-11-03 19:15:07	Type in recipient(s) here. Subject
Eric Patdu 2002-11-03 10:47:42 Eric Patdu 2002-11-03 09:28:01	Type in subject of document. From
Region Stats	Type in sender here. Key Words
All 0 NCR 1 PRO-Region 1 0 DRD Deciso 14 P 0	Type in terms most likely to be associated with this document.
RO REGION 14-D U	

Figure 6. Search Tool



Figure 7. SPReAD graphs

<u>ile E</u> dit <u>V</u> iew F <u>a</u> vorite	s <u>I</u> ools <u>H</u> elp A <u>d</u> dress @ http://spread.mudfish.info/index.php?	script=2474987	∂Go	m
- • → · ③ ② 础	Q 🖬 🥝 🖧 - 🖨 🖬 🖻			
				-
SDDAAD				
SPREAD				
Statistical Policy and Res	sarch Archive Database 0.74			
IOME M.O.R. MESSAG	ES FILES SEARCH STATS ADMIN HELP ABOUT SPREAD	System Administrator-N	CR	
Logout	Sunday, (03 Nov 2002 10:08PM MANI	LA	
	SPREAD ADMIN			
iystem Administrator-NCR is				
ogged in. Click logout	Region User News Files File Cat Help			
ession.	USER ACCOUNT			
	Login			
Logout	Login			
	Password Confirm Password			
Recent Logins				
System	Last Name			
Administrator				
System	First Name			
Administrator	First Name			
002-11-03 21:56:00				
Administrator	Email			
2002-11-03 19:15:07				
ric Patdu				
ric Patdu	Select Region			
	Colort Decise			

Figure 8. Admin Section



Figure 9. Three-legged stool model: COLLECTION - system for collecting raw data; CONSOLIDATION – system for integrating and analyzing data from different sources; PRESENTATION – system for displaying processed information

Appendix B: Server Installation Quick Guide

- 1. **Booting the CD.** The Install CD is bootable. Make sure the computer BIOS is set to boot from the CD-DRIVE.
- 2. At the boot prompt, type "bf24" to select the 2.4 series kernel installation.
- 3. At the select language screen, select US-English
- 4. The next screen is keyboard selection. Select the 104 key QWERTY keyboard.
- 5. **Disk Partitioning.** The disk will be divided in to the / (root) , /var, /usr, and home partitions. Also, create a swap partition roughly equal to the available RAM. The / (root) partition can be as small as 500 MB, with approximately 1 GB each for /var, /usr and /home. Use the **ext3**-filesystem as the default filesystem. This filesystem does journalled block device checks which allows for faster rebooting in cases of unplanned reboots (such as in power failures).
- 6. Select initialize disk partitions and mount them at the appropriate mount points.
- 7. Install kernel and device driver modules. Just follow the default selections.
- 8. Configure PCMCIA Support. Select "NO".
- 9. **Configure Device Driver Modules.** You will need the driver for your network card and optionally, your sound card and other peripheral devices (SCSI card, etc). The network card modules will be found in kernel/driver/network. The 3c59x module will work with most 3Com Vortex Cards. Support for Automated Power Management is now provided by kernel module. Look for it in the i386 section.
- 10. **Configure the network.** If the network address will be provided by a DHCP server, select DHCP for the network address. Otherwise enter the IP Address, Netmask, and Gateway as provided by your Network Administrator.
- 11. Install the base system. Follow the default choices as provided, making sure that the first CD is inserted in the CDROM drive.
- 12. **Make the system bootable.** Select "LILO" as the boot system. Install the boot block in /dev/hda1. The default selections are usable. Just follow the steps as indicated in the menu.
- 13. Reboot your system.
- 14. **Configure the Time Zone.** You will be presented with a selection of world cities. Select "Manila" (it's in Asia). Most computers previously installed with Windows are set to local time rather than GMT. Be sure to say no in the prompt "Is this computer set to GMT?"
- 15. MD5 Passwords. Select "YES"
- 16. Shadow Passwords. Select "YES" in "Enable Shadow Passwords?".
- 17. Select the root password. Pick a password between 6-8 characters that is not a word in the dictionary.
- 18. Create an ordinary user. Create another user, other than root, which should be used for almost all your logins to the computer.
- 19. Setup PPP. Select "NO".
- 20. Remove PCMCIA. Select YES, to remove PCMCIA.
- 21. Apt setup. The first CD will automatically be scanned to enter its contents into the debian package manager called APT. You will then be prompted if you wish to insert the next CD. Insert CD 2, and press YES, Repeat for all the rest of the 7 CDs.
- 22. Configure Network Package Sources. Select "NO".

- 23. Package Installation: Simple or Advanced. Select Simple Installation. The tasksel program will then be run. For the SPREAD server, choose **X Window system**, **UNIX** Server, Databases, Web Server.
- 24. Insert CDS as needed when prompted on the screen.
- 25. After installation finishes, you may login. Login as an ordinary user., then run the command "su" to gain root privileges.
- 26. Installation of additional software. You will need to install the php4, mysql-client and mysql-server programs, as well as the dbf2mysql and dbf2pg program
- 27. To do this, run the command "apt-get install -u -y php4 mysql-client mysql-server dbf2mysql dbf2pg". If additional programs are needed they will be automatically installed as well due to Debian's advanced handling of package dependencies. You will be prompted for the appropriate CD when needed. Just insert the correct CD in the drive and press the Enter key.

Appendix C: Software Modules

SPReAD Design Paradigm

SPReAD uses the three-legged stool paradigm for health care information systems (UPCM Medical Informatics Unit, 2002) as in Figure 9.

Modules

Data Collection Modules – upload and data entry forms (below) Processing Modules – parser function, processing scripts (below) Display Modules – JPGRAPH, data view modules (below)

External Modules

These are externally developed modules incorporated into SPReAD:

A. JPGRAPH – graphing tool written in PHP for producing online real-time graphs

Directories

- A. jpgraph where jpgraph is located
- B. raw-contains MOR files uploaded into SPReAD.
- C. files contains files uploaded as documents

PHP Scripts

```
Main scripts
about.php - something about spread
displayhelp.php - display help
displaystats.php - display graphs
files.php - display documents
header.php - spread header (title)
help.php - display help
index.php - root script
initsession.php
lang.php - language file
lang en.php - language file english
lang tag.php - language file tagalog
license.php - application license
login.php - login script
loginhx.php - user login history
logout.php
main.php - main code switch script
menu.php - main menu
messages.php - display messages
news.php - display news
recentlogins.php - recent user logins
spread admin.php - spread admin module
spread.css - style sheet
```

stats.php - display region stats

DB Connection

conn.php - connects to mysql

User-defined Functions

functions.php - all user defined functions, including parser function.

Graphs

graph01.php
graph_pie.php
graph_horizbar.php

Forms, form-processing and display scripts

form_filecat.php
form_help.php
form_login.php
form_logout.php
form_lostpassword.php
form_mssage.php
form_msgaction.php
form_news.php
form_region.php
form_upload.php
form_users.php

processfilecat.php processfiles.php processhelp.php processlogin.php processmessage.php processregion.php processreqpasswd.php processupload.php processuser.php processnews.php

validateuser.php viewfiles.php viewfilecat.php viewhelp.php viewusers.php viewmessages.php viewnews.php viewregion.php viewuploads.php

Appendix D: Database Logical Design

TABLE: FILECODE DESCRIPTION: data dictionary for file filecode { filecode, filecat } TABLE: HELP DESCRIPTION: help items help { *helpid*, question, freq, answer, *userid*, ispublic } TABLE: LOGIN DESCRIPTION: user accounts login { userid, login, password, firstname, lastname, email, isadmin, lang, regioncode } TABLE: LOGINHX DESCRIPTION: login history of users loginhx { userid, logindate, ipaddress, useragent } TABLE: MESSAGE DESCRIPTION: messages user to user message { id, msgto, msgfrom, body, isread, postdate, subject, replytoid } TABLE: NEWS DESCRIPTION: news items news { *id*, newstitle, newslead, newsbody, *newsauthor*, newsdate, publish, public } TABLE: PHICFILES DESCRIPTION: document files phicfiles { *fileid*, referenceno, series, recipient, subject, sender, filename, keywords, description, doctitle, *filecat*, *userid*, *regioncode*, upload_date, mimetype, filesize, docdate } TABLE: REGIONCODE DESCRIPTION: data dictionary for regions regioncode { code, rname } TABLE: UPLOADS

DESCRIPTION: M.O.R. uploads

uploads { id, upload_userid, upload_date, filename, regioncode }

Appendix E: Data Warehouse Design

Logical Design

FACT TABLES

TABLE: dbbuildup DESCRIPTION: Membership Database Build-Up

dbbuildup { date_key, geo_key, sector_key, recvdfrmco, assignlastmo, assignthismo, pncissueddis, pncissuedbal }

TABLE: memapp DESCRIPTION: Membership Forms Application

memapp { date_key, geo_key, sector_key, appballastmo, apprec, appref, rts, appsent, appinproc }

TABLE: overcntrcoll DESCRIPTION: Premium Contribution Actual Over-the-Counter Collection

Overcntrcoll { date_key, geo_key, sector_key, lastmomem, lastmocoll, thismomem, thismocoll }

TABLE: remitrep DESCRIPTION: Premium Contribution Remittance Reports

remitrep { date_key, geo_key, sector_key, report_key, goodrep, majdefrep, mindefrep, complnotif, numofmem, remitamt }

TABLE: claimsproc DESCRIPTION: Claims Processing

claimsproc { date_key, geo_key, sector_key, claimsballastmo, claimsrec, refclaims, claimsdenied, claimspaid, benefitsamt, aveval, adjustments, claimsbalproc }

TABLE: benefits

DESCRIPTION: Philhealth Benefits (per item of hospitalization

benefits { date_key, geo_key, sector_key, roomboard, drugmed, xraylab, orfee, proffee }

TABLE: deniedreduct

DESCRIPTION: Most Common Reasons of RTS/RTH, Denied, Reduction/Slashing

deniedreduct { date_key, geo_key, reasons_key, numclaims }

TABLE: indigbenefit

DESCRIPTION: Breakdown of Indigent Benefits Claims

indigbenefit { date_key, geo_key, indigent_key, indigclaimsrec, indigclaimspaid, actualhosptotal, benefitspaid }

TABLE: healthcareprofaccr DESCRIPTION: Accreditation of Health Care Professional

healthcareprofaccr { date_key, geo_key, prof_key, profapprec, profappsent }

TABLE: healthcareinstaccr DESCRIPTION: Accreditation of Health Care Institutions

healthcareinstaccr { date_key, geo_key, insti_key, instiapprec, instiappsent, preaccrinspect }

TABLE: healthcareinstinsp DESCRIPTION: Accreditation of Health Care Institutions

healthcareinstinsp { date_key, geo_key, insti_key, inspecttarget, numhospinspect }

DIMENSION TABLES

TABLE: Ddate DESCRIPTION: Date Dimension

Ddate { date_key, calmonum, calmoname, calqtr, calyr, }

TABLE: Drhio DESCRIPTION: RHIO Dimension

Drhio { *geo_key*, rhio }

TABLE: Dsector DESCRIPTION: Sector Dimension

Drhio { sector_key, sectorname }

TABLE: Dreport DESCRIPTION: Report Type Dimension

Dreport { report_key, reportname }

TABLE: Dreasons DESCRIPTION: Reasons Dimension

Dreasons { reasons_key, reasonstype, reasonsname }

TABLE: Dindigenttype DESCRIPTION: Indigent Type Dimension

Dindigenttype { indigent_key, indigtypename }

TABLE: Dhealthcareprof DESCRIPTION: Health Care Professionals Dimension

Dhealthcareprof { prof_key, proftype }

TABLE: Dhealthcareinsti DESCRIPTION: Health Care Professionals Dimension

Dhealthcareinsti { insti_key, institype }

TABLE: Dlocation DESCRIPTION: Location Dimension

Dlocation { geo_key, prov_key, mun_key, lgu }

Conceptual Design















Date Dimension	
	Claims Processing Fact Table
RHIO Dimension	date_key (FK) geo_key (FK) sector_key (FK) Good Reports
Sector Dimension	Claims Received Refiled Claims RTS or Denied Claims Paid Medicare Benefits Amount Average Value or Claim Adjustments Cumulative Balance Claims in Process

Appendix F: MySQL InnoDB Setup

About InnoDB

InnoDB provides MySQL with a transaction-safe (ACID compliant) table handler with commit, rollback, and crash recovery capabilities. InnoDB does locking on row level and also provides an Oracle-style consistent non-locking read in SELECTs. These features increase multiuser concurrency and performance. There is no need for lock escalation in InnoDB, because row level locks in InnoDB fit in very small space. InnoDB tables support FOREIGN KEY constraints as the first table type in MySQL.

InnoDB has been designed for maximum performance when processing large data volumes. Its CPU efficiency is probably not matched by any other disk-based relational database engine.

Technically, InnoDB is a complete database backend placed under MySQL. InnoDB has its own buffer pool for caching data and indexes in main memory. InnoDB stores its tables and indexes in a tablespace, which may consist of several files. This is different from, for example, MyISAM tables where each table is stored as a separate file. InnoDB tables can be of any size also on those operating systems where file-size is limited to 2 GB¹⁰. For the latest information about InnoDB, go to <u>http://www.innodb.com/</u>.

InnoDB Section of /etc/my.cnf

```
# INNODB CONFIGURATION
# BY HERMAN TOLENTINO MD
# WARNING: READ DOCUMENTATION BEFORE YOU CHANGE!
#
           ... or you will be sorry and you have
#
          to call me +639189214108 asap
# for this installation:
# memory is 128MB, big partition is /spreaddw
#
# defaults to datadir of mysql if innodb data home dir is blank
#
   but is appended to innodb data file path if present
#
 important:
# 1. make sure you create the directories below
# 2. make sure mysgl owns these directories!
 3. other commented out options do not work, do not uncomment
#
innodb data home dir = /spreaddw
innodb data file path =
/ibdata/ibdata1:1000M;/ibdata/ibdata2:1000M
#
#
 take a deep breath...
#
```

¹⁰ MySQL Documentation: <u>http://www.mysql.com/doc/en/InnoDB_overview.html</u>

```
set-variable = innodb_buffer_pool_size=60M
set-variable = innodb_additional_mem_pool_size=10M
set-variable = innodb_log_file_size=20M
set-variable = innodb_log_buffer_size=8M
innodb_flush_log_at_trx_commit=1
# innodb_mirrored_log_groups=1
innodb_log_group_home_dir = /spreaddw/iblogs
#innodb_log_files_in_group=3
#innodb_log_file_size=10M
#innodb_log_buffer_size=5M
innodb_log_arch_dir = /spreaddw/iblogs
```

Starting MySQL with InnoDB Enabled

You should get the following display from your screen:

corplan4:/var/lib/mysql# tail -f /var/log/mysql/mysql.err 021106 23:16:24 mysqld started InnoDB: The first specified data file /spreaddw//ibdata/ibdata1 did not exist: InnoDB: a new database to be created! 021106 23:16:24 InnoDB: Setting file /spreaddw//ibdata/ibdata1 size to 1000 MB InnoDB: Database physically writes the file full: wait... 021106 23:20:59 InnoDB: Data file /spreaddw//ibdata/ibdata2 did not exist: new to be created 021106 23:20:59 InnoDB: Setting file /spreaddw//ibdata/ibdata2 size to 1000 MB InnoDB: Database physically writes the file full: wait... 021106 23:25:25 InnoDB: Log file /spreaddw/iblogs/ib logfile0 did not exist: new to be created InnoDB: Setting log file /spreaddw/iblogs/ib logfile0 size to 20 MB InnoDB: Database physically writes the file full: wait... 021106 23:25:30 InnoDB: Log file /spreaddw/iblogs/ib logfile1 did not exist: new to be created InnoDB: Setting log file /spreaddw/iblogs/ib logfile1 size to 20 MB InnoDB: Database physically writes the file full: wait... InnoDB: Doublewrite buffer not found: creating new InnoDB: Doublewrite buffer created InnoDB: Creating foreign key constraint system tables InnoDB: Foreign key constraint system tables created 021106 23:25:37 InnoDB: Started /usr/sbin/mysqld: ready for connections

Appendix G: Backup and Recovery of the SPReAD Database

There are two ways to back up the SPReAD Database:

- 1. Binary
- 2. Dump

Binary Backup

The InnoDB database is in the /spread partition, a 31GB partition. The MyISAM tables are in the /var/lib/mysql directory. To do binary backup, do the following¹¹:

- 1. Shut down your MySQL database and make sure it shuts down without errors.
- 2. Copy all your datafiles (in /var/lib/mysql) into a safe place.
- 3. Copy all your InnoDB log files (in /spread/iblogs) to a safe place.
- 4. Copy your `my.cnf' configuration file (in /etc/mysql) to a safe place.
- 5. Copy all the `.frm' files (in /var/lib/mysql) for your InnoDB tables into a safe place.

Using mysqldump

Sometimes, it is better to have two backups, one binary and the other from mysqldump. If the binary backup is corrupted, you still have human-readable data in a dump. To backup using mysqldump, as **root** do:

mysqldump -u root -p [database] > [database].sql

You can look up the complete syntax of mysqldump in the MySQL manual. Save the dump file in a safe place.

Recovery

To recover, simply restart the database in logging mode (independent of InnoDB). InnoDB will read the archive logs automatically.

¹¹ MySQL Documentation: <u>http://www.mysql.com/doc/en/Backing_up.html</u>

Appendix H. Server OS Upgrade and Maintenance

Installing Additional Debian Packages

Additional Debian software packages must be done while logged in as root or superuser. Packages may be installed in three ways: a) dpkg; b) dselect; or c) apt. Of the three methods, apt is the easiest.

You can install a package if you have the .deb file using the dpkg command. For example, if you have downloaded a package from some site (either the Debian Archive or from some other source, then you would have a file ending in a .deb suffix, such as $pspp_0.3.0-7_i386.deb$, which is the Debian package for the PSPP program (a statistical analysis program). You then run the dpkg command with the -i option as shown below:



Figure 1. Using dpkg to install new software

dselect is a menu-based text front end for software package management. With it, one can configure the package sources, update the package lists, select the software for installation, install new software, configure packages, and remove software. The program is invoked from the shell (as root) by the command dselect. The opening screen is shown below:



Fig 2. Opening Menu for dselect

The third way is to use the apt-get command. apt-get is a simple command line interface for downloading and installing packages. The most frequently used commands are update and install.

```
Commands: update - Retrieve new lists of packages
upgrade - Perform an upgrade
install - Install new packages (pkg is libc6 not libc6.deb)
remove - Remove packages
source - Download source archives
build-dep - Configure build-dependencies for source packages
dist-upgrade - Distribution upgrade
dselect-upgrade - Follow dselect selections
clean - Erase downloaded archive files
autoclean - Erase old downloaded archive files
check - Verify that there are no broken dependencies
```

The following shows how to use apt-get to install the pspp package:



Figure 3. Using apt-get to install package

Note that to successfully use apt-get, your /etc/apt/sources.list file must be properly configured. This can be done through the "Access" option of the dselect command or by manually editing the file.

Like dselect, apt-get also manages the dependencies between packages, by installing other packages that may be necessary for the desired package to operate properly, as well as removing conflicting packages.

<u>File</u> <u>Actions</u> <u>Package</u>	<u>∨</u> iew <u>H</u> elp						
pspp 0.3.0-	-7	Filters:	Status 👻 F	Priority -	-		
Statistical analy	sis tool	DKI	Package Name	Inst. V	e Avail. '	Status Secti	or Priority Desc 🛋
Status:	Not installed		😐 🎓 pspp	None	0.3.0-7	To be irmath	optional Statis
Installed Size:	2277k		🗉 🍘 psptools	None	1.2.2-7	Not insttext	optionalTools
Section:	math		🕀 🍘 psrip	None	1.3-2	Not insttext	optionalExtrac
Priority:	optional		🗉 🍘 pstngw	None	1.1.3-1	Not inst comm	n optionalH.323
Download:	868k		🖽 🍘 pstoedit	None	3.32-6	Not inst graph	nic:optionalPostS
Description Related Ser	noial Other		🖽 🍘 pstotext	None	1.8g-5	Not insttext	optionalExtrac
Statistical analysis taal			🖽 🍘 psutils	1.17-15	5 1.17-15	5 Kept text	optional A coll
PSPP is a replacement fo	r SPSS, a powerful		🖽 🍘 pterm	None	0.53-20	01Not instx11	optionalPuTT
analysis of sampled data.	This is a test re		🖽 🍘 ptex-base	None	1:2.0-4	Not insttex	optionalbasic
use caution in interpreting	g results.		🖽 🍘 ptex-bin	None	3.0.1+0).Not insttex	optionalASCI
			👩 ptex-builder	None	None	Not inst	No vers 🔄
			🖽 🍘 ptex-buildsup	phone	1.0.7+2	Not insttex	optionalSuppo
			🖽 🍘 ptex-jisfonts	None	2-6	Not insttex	optionalProvic
			🖽 🍘 ptex-jtex	None	1.7+1-7	7 Not instnon-fi	recoptional ASCI
			🗉 🍘 ptknettools	None	0.2.2	Not instnet	optional A sele
			👩 pubfont	None	None	Not inst	No vers
			👩 publib-dev	None	0.34-1	Not inst devel	optionalC func
•	<u>▶</u>		🕀 🍘 puf	None	0.91-0k	Not instweb	optionalParall 🗾

1 to install; 0 to delete; 2277k will be used.

Figure 4. The gnome-apt front end for Debian package management

Graphical frontends for the apt-get command also exist. For example, you can also use the gnome-apt program, which gives you a GUI to manage your Debian software packages.

Configuring sources.list for Security Updates

To remain secure, the software packages in Debian GNU / Linux should be constantly updated to the latest versions. These updates are made available on http://security.debian.org. You can access these updates by using the apt-get command, as long as your /etc/apt/sources.list file is properly configured. The sources.list file should have an entry pointing to the http://security.debian.org are made available on http://security.debian.org. You can access these updates by using the apt-get command, as long as your /etc/apt/sources.list file is properly configured. The sources.list file should have an entry pointing to the http://security.debian.org/ archive as in the example below:

deb http://bulkan.upm.edu.ph/debian woody main non-free contrib deb http://bulkan.upm.edu.ph/debian-non-US woody/non-US main contrib non-free #deb http://http.us.debian.org/debian/ woody main non-free contrib

#deb http://non-us.debian.org/debian-non-US woody main non-free contrib #deb http://non-us.debian.org/debian-non-US woody/non-US main contrib non-free deb http://security.debian.org/ woody/updates main contrib non-free /etc/apt/sources.list (END)

Figure 5. sources.list file configured for security updates.

To update the package lists, run the command: apt-get update

You should get output similar to the one shown below:

```
corplan4:~# apt-get update
Hit http://security.debian.org woody/updates/main Packages
Hit http://security.debian.org woody/updates/main Release
Hit http://security.debian.org woody/updates/contrib Packages
Hit http://security.debian.org woody/updates/contrib Release
Hit http://security.debian.org woody/updates/non-free Packages
Hit http://security.debian.org woody/updates/non-free Release
Hit http://bulkan.upm.edu.ph woody/main Packages
Hit http://bulkan.upm.edu.ph woody/main Release
Hit http://bulkan.upm.edu.ph woody/non-free Packages
Hit http://bulkan.upm.edu.ph woody/non-free Release
Hit http://bulkan.upm.edu.ph woody/contrib Packages
Hit http://bulkan.upm.edu.ph woody/contrib Release
Hit http://bulkan.upm.edu.ph woody/non-US/main Packages
Hit http://bulkan.upm.edu.ph woody/non-US/main Release
Hit http://bulkan.upm.edu.ph woody/non-US/contrib Packages
Hit http://bulkan.upm.edu.ph woody/non-US/contrib Release
Hit http://bulkan.upm.edu.ph woody/non-US/non-free Packages
Hit http://bulkan.upm.edu.ph woody/non-US/non-free Release
Reading Package Lists... Done
Building Dependency Tree... Done
corplan4:~#
```

Figure 6. Updating package lists for security updates

Installing Security Updates

Once you have run apt-get update, you can install the packages that need to be upgraded by giving the command:

apt-get upgrade

The figure below shows the result of running the apt-get upgrade command.



Figure7. Result of apt-get upgrade

By answering *Y*, the required packages will be downloaded from the <u>security.debian.org</u> site and automatically installed. To facilitate downloading, you may designate a proxy server to be used to download your packages. Ask your Network Administrator for the host name and port of the proxy server on your network. Then run the command

export http_proxy=http://<fully.qualified.hostname>:<port
number>/

Replace <<u>fully.qualified.hostname</u>> and <port number> with the proper ones from your Network Administrator.

Distribution Upgrades

For most uses, apt-get install and apt-get upgrade will be sufficient to maintain the software on the server to be up-to-date. However, you may want to upgrade to the testing or even unstable distribution at some point as this contains some more software (albeit in a more developmental state) than the standard stable distribution. When you decide to do so, you should edit your /etc/apt/sources.list file to look similar to the one below:

the main Debian packages. Uncomment the deb-src line if you # want 'apt-get source' to work with most packages. #deb http://www.zentek-international.com/mirrors/debian/debian/ testing main con trib non-free # deb-src http://www.zentek-international.com/mirrors/debian/debian/ testing main n contrib non-free # the non-US Debian packages. Uncomment the deb-src line if you # want 'apt-get source' to work with non-US packages. #deb http://xcyber.org/debian-non-US/ testing/non-US main contrib non-free # deb-src http://xcyber.org/debian-non-US/ testing/non-US main contrib non-free # deb-src http://xcyber.org/debian-non-US/ testing/non-US main contrib non-free # deb http://xcyber.org/debian-non-US/ testing/non-US main contrib non-free # deb http://www.zentek-international.com/mirrors/debian/debian-non-US/ testing/n on-US main contrib non-free deb http://security.debian.org/ testing/updates main contrib non-free # deb http://security.debian.org/ testing/updates main contrib non-free # deb http://bulkan.upm.edu.ph/debian/ testing main contrib non-free # deb http://bulkan.upm.edu.ph/debian/testing main contrib non-free deb http://bulkan.upm.edu.ph/debian-non-US/ testing/non-US main contrib non-free deb http://bulkan.upm.edu.ph/debian-non-US/ testing/non-US main contrib non-free

Figure 8.sources.list file configured for testing distribution

When your sources.list file is properly set up, you can now run

apt-get update

and when that is finished, run

apt-get dist-upgrade

This will download all the files necessary to upgrade your distribution from stable to testing (or unstable, if that is what you want). This will take a long time as almost all the packages in your system will be replaced. Make sure that you have enough disk space to download all the packages. You may want to set your http_proxy environment variable (as discussed above) to optimize your downloads.



Figure 9. Opening screen of kbackup

Backing Up

Equipment failure is a fact of life. Sad, but true, your data is in constant danger of being lost. In a mission critical environment, data backup, tedious as it is, is a necessity.

Debian GNU/Linux has many tools for backup. Which tools will be used are largely dependent on the type of media used for backup storage. The most common types of media used for backup storage are a) tape; b) CD-Recordable (or ReWriteable); c) removable magnetic media (ZIP Disk, SyQuest, etc); and d) another hard disk drive (IDE or SCSI).

One such program is kbackup. This program is included in the Debian Packages and can easily be installed by executing

apt-get install kbackup

The opening screen is shown below:

From the main menu, you can configure the system, perform a backup, restore from backup, do other actions, and schedule an unattended backup.


Figure10. Main menu of kbackup

There are many other applications for data backup that come free with the Debian GNU / Linux system. There are also commercial ones that you can install on the system. You can even create your own using shell scripting, tar, cpio and other commands. The choices are limitless.

Appendix I: Data Warehouse Metadata Description

DATABASE: SPREADDW

DATA SOURCE: PRO Monthly Operations Report (MOR)

FACT TABLES

TABLE: dbbuildup DESCRIPTION: Membership Database Build-Up Fact Table SOURCE: Membership Database Build-Up (Assignment of PIN/PEN/Issuance of Ids) Table in MORS

Field Name	Description	Data Source / Field in MOR
Date_key	Foreign Key from date_key of Ddate Dimension Table	MOR reporting period
geo_key	Foreign Key from geo_key of Drhio Dimension Table	Philhealth Regional Office indicated in MOR
sector_key	Foreign Key from sector_key of Dsector Dimension Table	Sector types: i.e. government, private, Individual Paying, Indigent rows in MOR
recvdfrmco	Received from Central Office	Received from Central Office column in MOR table
assignlastmo	Assigned to Members/Employers as of last month	Assigned to Members/Employers as of last month column in MOR table
assignthismo	Assigned to Members/Employer this month	Assigned to Members/Employer this month column in MOR table
pncissueddis	PNCs issued to Members/Employers Distributed	PNCs issued to Members/Employers Distributed column in MOR table
pncissuedbal	PNCs issued to Members/Employers Balance	PNCs issued to Members/Employers Balance column in MOR table

TABLE: memapp DESCRIPTION: Membership Forms Application Fact Table SOURCE: Membership Forms Application Table in MORs

Field Name	Description	Data Source / Field in MOR
Date_key	Foreign Key from date_key of	MOR reporting period
	Duale Dimension Table	
geo_key	Foreign Key trom geo_key ot	Philhealth Regional Office indicated in
• •	Drhio Dimension Table	MOR
sector_key	Foreign Key from sector_key of	Sector types: i.e. government, private,
2	Dsector Dimension Table	Individual Paving. Indigent columns in
		MOR table
appballastmo	Cumulative Balance Last Month	Cum. Balance Last Month row in MOR table
Apprec	Application Received	Application Received row in MOR table
appref	Application Refiled	Application Refiled row in MOR table
rts	RTS, Return to Sender	RTS row in MOR table
Appsent	Application Sent to CO/RHIO	Application Sent to CO/RHIO row in MOR
		table
appinproc	Balance / Application in	Balance / Application in Process row in
	Process	MOR table

TABLE: overcntrcoll

DESCRIPTION: Premium Contribution Actual Over-the-Counter Collection Fact Table SOURCE: Premium Contribution Actual Over-the-Counter Collection Table in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of Ddate Dimension Table	MOR reporting period
geo_key	Foreign Key from geo_key of Drhio Dimension Table	Philhealth Regional Office indicated in MOR
sector_key	Foreign Key from sector_key of Dsector Dimension Table	Sector types: i.e. government, private, Individual Paying, Indigent rows in MOR table
lastmomem	Last Month Members	Last Month Members column in MOR table
lastmocoll	Last Month Collection Amount	Last Month Collection Amount column in MOR table
thismomem	This Month Members	This Month Members column in MOR table
thismocoll	This Month Collection Amount	This Month Collection Amount column in MOR table

 TABLE: remitrep

 DESCRIPTION: Premium Contribution Remittance Reports Fact Table

SOURCE: Premium Contribution Remittance Reports Tables in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of Ddate Dimension Table	MOR reporting period
geo_key	Foreign Key from geo_key of Drhio Dimension Table	Philhealth Regional Office indicated in MOR
sector_key	Foreign Key from sector_key of Dsector Dimension Table	Sector types: i.e. government, private, Individual Paying, Indigent rows in MOR table
report_key	Foreign Key from report_key of Dreport Dimension Table	Report types: i.e. walk-in, mailed/drop box, diskette submitted to Central Office tables indicated in MOR
goodrep	Good Reports	Good Reports column in MOR table
majdefrep	Major Deficient Reports	Major Deficient Reports column in MOR table
mindefrep	Minor Deficient Reports	Minor Deficient Reports column in MOR table
complnotif	Compliance to Notification	Compliance to Notification column in MOR table
numofmem	Number of Members	No. of Members column in MOR table
remitamt	Remittance Amount	Remittance Amount column in MOR table

TABLE: claimsproc DESCRIPTION: claims Processing Fact Table SOURCE: Claims Processing Table in MORS

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of	MOR reporting period
	Ddate Dimension Table	
geo_key	Foreign Key from geo_key of	Philhealth Regional Office indicated in
	Drhio Dimension Table	MOR
sector_key	Foreign Key from sector_key of	Sector types: i.e. government, private,
	Dsector Dimension Table	Individual Paying, Indigent columns in
		MOR table
claimsballastmo	Cumulative Balance Last Month	Cum Balance Last Month row in MOR table
claimsrec	Claims Received	Claims Received row in MOR table
refclaims	Refiled Claims	Refiled Claims row in MOR table
claimsdenied	RTS or Denied	RTS or Denied row in MOR table
claimspaid	Claims Paid	Claims Paid row in MOR table
benefitsamt	Medicare Benefits Amount	Medicare Benefits Amount row in MOR
		table
aveval	Average Value or Claim	Average Value or Claim row in MOR table
adjustments	Adjustments	Adjustments row in MOR table
claimsbalproc	Cumulative Balance Claims in	Cum Balance Claims in Process row in
	Process	MOR table

TABLE: benefits DESCRIPTION: Philhealth Benefits (per item of hospitalization) Fact Table SOURCE: Philhealth Benefits (per item of hospitalization) Table in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of	MOR reporting period
-	Ddate Dimension Table	-
geo_key	Foreign Key from geo_key of	Philhealth Regional Office indicated in
	Drhio Dimension Table	MOR
sector_key	Foreign Key from sector_key of	Sector types: i.e. government, private,
	Dsector Dimension Table	Individual Paying, Indigent columns in
		MOR table
roomboard	Room and Board	Room and Board row in MOR table
drugmed	Drugs and Medicines	Drugs and Medicines row in MOR table
xraylab	X-ray / Lab / others	X-ray / Lab / others row in MOR table
orfee	Operating Room Fee	Operating Room Fee row in MOR table
proffee	Professional Fees	Professional Fees row in MOR table

SOURCE: Most Common Reasons of RTS/RTH, Denied, Reduction/Slashing Tables in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of Ddate Dimension Table	MOR reporting period
geo_key	Foreign Key from geo_key of Drhio Dimension Table	Philhealth Regional Office indicated in MOR
reasons_key	Foreign Key from reasons_key of Dreasons Dimension Table	Reasons type for RTS/RTH, Denied, Reduction/Slashing as indicated in MOR tables
numclaims	Number of Claims	No. of Claims columns in MOR tables

TABLE: indigbenefit DESCRIPTION: Breakdown of Indigent Benefits Claims Fact Table SOURCE: Breakdown of Indigent Benefits Claims Received and Claims Paid Tables in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of	MOR reporting period
	Ddate Dimension Table	
geo_key	Foreign Key from geo_key of	Philhealth Regional Office indicated in
	Drhio Dimension Table	MOR
indigent_key	Foreign Key from indigent_key	Indigent Program types: i.e. Regular
	of Dindigenttype Dimension	Indigent Program, Lingap Para sa
	Table	Mahirap tables in MOR
indigclaimsrec	Claims Received	Claims Received columns in MOR tables
indigclaimspaid	Claims Paid	Claims Paid columns in MOR tables
actualhosptotal	Actual Hospitalization Total	Actual Hospitalization Total columns in
-		MOR tables
benefitspaid	Medicare Benefits Paid	Medicare Benefits Paid columns in MOR
-		tables

TABLE: healthcareprofaccr DESCRIPTION: Accreditation of Health Care Professionals Fact Table SOURCE: Accreditation of Health Care Professional Table in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of	MOR reporting period
-	Ddate Dimension Table	-
geo_key	Foreign Key from geo_key of	Philhealth Regional Office indicated in
	Drhio Dimension Table	MOR
prof_key	Foreign Key from prof_key of	Health Care Professional Types rows in
	Dhealthcareprof Dimension Table	MOR table
profapprec	Application Received	Application Received column in MOR
		table
profappsent	Application Sent to Central	Application Sent to CO column in MOR
	Office	table

TABLE: healthcareinstaccr

DESCRIPTION: Accreditation of Health Care Institutions Fact Table SOURCE: Accreditation of Health Care Institutions Table in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of Ddate Dimension Table	MOR reporting period
geo_key	Foreign Key from geo_key of Drhio Dimension Table	Philhealth Regional Office indicated in MOR
insti_key	Foreign Key from insti_key of Dhealthcareinsti Dimension Table	Health Care Institution Types rows in MOR table
instiapprec	Application Received	Application Received columns in MOR table
instiappsent	Application Sent to Central Office	Application Sent to CO columns in MOR table
preaccrinspect	Pre-accreditation Inspection Conducted	Pre-accreditation Inspection Conducted columns in MOR table

SOURCE: Accreditation of Health Care Institutions Table in MORs

Field Name	Description	Data Source / Field in MOR
date_key	Foreign Key from date_key of	MOR reporting period
	Ddate Dimension Table	
geo_key	Foreign Key from geo_key of	Philhealth Regional Office indicated in
	Drhio Dimension Table	MOR
insti_key	Foreign Key from insti_key of	Health Care Institution Types rows in
	Dhealthcareinsti Dimension	MOR table
	Table	
inspecttarget	Inspection Target	Inspection Target column in MOR table
numhospinspect	Number of Hospitals Inspected	No. of Hospitals Inspected column in
-		MOR table

DIMENSION TABLES

TABLE: Ddate DESCRIPTION: Date Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
date_key	Primary Key	MOR reporting period
calmonum	Calendar Month in Number	MOR reporting period
calmoname	Calendar Month Name	MOR reporting period
calqtr	Calendar Quarter	MOR reporting period
calyr	Calendar Year	MOR reporting period

TABLE: Drhio DESCRIPTION: RHIO Dimension Table SOURCE: Across Tables in MOR

Field Name	Description			Data Source	e / Field	in MOR		
geo_key	Primary Key			Philhealth MOR	Regional	Office	indicated	in
Rhio	Regional Office	Health	Insurance	Philhealth MOR	Regional	Office	indicated	in

TABLE: Dsector

DESCRIPTION: Sector Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
sector_key,	Primary Key	Sector types as indicated in MOR
sectorname	Sector types: i.e. government, private, Individual Paying, Indigent	Sector types as indicated in MOR

TABLE: Dreport

DESCRIPTION: Report Type Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
report_key	Primary Key	Report type tables as indicated in MOR
reportname	Report types: i.e. walk-in, mailed/drop box, diskette submitted	Report type tables as indicated in MOR

TABLE: Dreasons DESCRIPTION: Reasons Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
reasons_key	Primary Key	Reasons type tables as indicated in MOR tables
reasonstype	Reasons type: i.e. RTS/RTH, Denied, Reduction/Slashing	Reasons type tables as indicated in MOR tables
reasonsname	Reasons name for each Reasons Type	Reasons type tables as indicated in MOR tables

DESCRIPTION: Indigent Type Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
indigent_key	Primary Key	Indigent Program type tables indicated in MOR
indigtypename	Indigent Program types: i.e. Regular Indigent Program, Lingap Para sa Mahirap	Indigent Program type tables indicated in MOR

TABLE: Dhealthcareprof DESCRIPTION: Health Care Professionals Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
prof_key	Primary Key	Health Care Professional Type Rows in
		MOR tables
proftype	Health Care Professional Types: i.e. Physicians, Dentists, Nurses, Midwives, others	Health Care Professional Type Rows in MOR tables

TABLE: Dhealthcareinsti DESCRIPTION: Health Care Institutions Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
insti_key	Primary Key	Health Care Institution Types rows in
institype	Health Care Institution Types: i.e. Primary, Secondary, Tertiary, RHU Type/Health Center, Ambulatory Surgical Clinics, Private Out-Patient Clinics	Health Care Institution Types rows in MOR table

TABLE: Dlocation DESCRIPTION: Location Dimension Table SOURCE: Across Tables in MOR

Field Name	Description	Data Source / Field in MOR
geo_key	Primary Key	Philhealth Regional Office indicated in
		MOR
prov_key	Primary Key	Province indicated in MOR
mun_key	Primary Key	Municipality indicated in MOR
lgu	Local Government Unit: i.e.	Local Government Office indicated in
	Regions, Province Municipality	MOR

DATABASE: CLAIMSMEM DATA SOURCE: Unified Claims Processing System (UCPS)

FACT TABLES

 TABLE: BATS

 DESCRIPTION: Contains data from all claims received

 SOURCE: BATS.DBF from UCPS. Each region submits its own BATS.DBF in various format

Field Name	Description	Data Source / Field in MOR
MECNO	Membership number	UCPS
PATIENT	Patient code	UCPS
PATLNAME	Patient surname	From claim form
PATFNAME	Patient firstname	From claim form
PATMNAME	Patient middle name	From claim form
WORLNAME	Member's surname	From claim form
WORFNAME	Member's firstname	From claim form
WORMNAME	Member's middle name	From claim form
ADDRESS	Member's mailing address	From claim form
CODE	Hospital code	From UCPS library
SERIES	Claim series number	Automatically generated by UCPS
DATE_ADM	Date when patient was admitted	From claim form
	to hospital	
DATE_DIS	Date when patient was	From claim form
	discharged from hospital	
AMT_ACTUAL	Total actual claim charges	From claim form
AMT_MEDIC	Total actual medicare charges	From claim form
AREACD	Regional code	From UCPS library
RPDCODE	Deficiency code	From UCPS library
REMARK	Remark	
REMARK2	DV prepared identifier	Date voucher prepared
REFILE	Claim refile condition	T/F if claim was refilled
TIME	Time when claim was received	From reception
DATE_REC	Date when claim was received	From reception
DATE_REF	Date when claim was refilled	From reception
WORKER_TYP	Membership type	From UCPS library

TABLE: BUDGET DESCRIPTION: Contains financial data from claims that have passed CONTROL SOURCE: BUDGET.DBF from UCPS. Each region submits its own BUDGET.DBF in various format

Field Name	Description	Data Source / Field in MOR
SERIES	Claim series number	Automatically generated by UCPS
PAYCODE	Payee code	
CLAIMANT	Claimant name	
HOS_CODE	Hospital code	From UCPS library
AREACD	RHIO code	From UCPS library
PAY_TO	Payee classification	
TOT_AMNT	Gross amount of claim	
W_TAX	Withholding tax on professional	
	services	
DV_NO	APV (account's payment	
	voucher) number	
DV_DT	APV date	
CHECK_NO	Check number	
CHECK_DT	Check date	
RM_BD	Actual charges on room and	
	board	
DRUGS	Actual charges on drugs and	
Y BAY	Actual charges on x-ray and	
A_KA1	laboratories	
OP_RM	Actual charges on operating	
	room	
DOCV1		
DOCV2		
SURFE	Actual charge of surgeon	
ANEFE	Actual charge of	
	anesthesiologist	
REMARK		
CLASS	Membership classification	

ADJ	Adjustment identifier	
AC	Auto-credit identifier	

TABLE: CHECK DESCRIPTION: Data on checks SOURCE: UCPS

Field Name	Description	Data Source / Field in MOR
CPAYCODE	Payee code	
CCLAIMANT	Claimant name	
CHOS_CODE	Hospital code	From UCPS library
CAREACD	Regional code	
CPAY_TO	Payee classification	
CTOT_AMNT	Total amount of check	
CW_TAX	Withholding tax amount on	
	professional services	
CDV_NO	Check's reference APV number	
CDV_DT	Check's reference APV date	
CHECK_NO	Check number	
CHECK_DT	Check date	
REMARK		
CCLMNO	Claim batch series number	
CTIME	Time when check was printed	
CBANK	Bank code	
AC	Auto-credit identifier	
REF_NO	Auto-credit reference number	

TABLE: CONTROL DESCRIPTION: Contains data from good, pending, and denied claims SOURCE: BATS

Field Name	Description	Data Source / Field in MOR
SERIES	Claim series number	
MECNO	Member's membership number	
HOSP_CODE	Hospital code	From UCPS library
ILL_CODE	Illness code	From UCPS library
PAY_TYPE	Payee code	
TRAN_CODE	Claim stage identifier	
DAY_ACT	Number of days confined	
MEC_V_DATE	Membership validity date	
DEF_CODE	Deficiency code	
REM	Claim status code	
NOTICE	Notice number	
STATUS	Status of claim	
TAGS		
WORKER_TYP	Membership type	

TABLE: DOCTOR DESCRIPTION: Doctor's claim charges SOURCE: Claim form

Field Name	Description	Data Source / Field in MOR
SERIES	Claim series number	
DOC_CODE	Doctor's accreditation number	From UCPS library
TIN_CODE	Tax identification number	
AMT_ACTUAL	Doctor's actual charges	
AMT_MEDIC	Doctor's allowed medicare charges	
AMT_COMP	System computed charges	
RUV	Relative unit value for service	
PRO_CODE	Doctor's procedure code	From UCPS library
DEF_CODE	Deficiency code	From UCPS library
RUV_DATE	Date of operation	
TYPE	Service rendered type	
PAY_TO	Claim paid to code	From UCPS library
VOUCHER		
NOTICE	Notice identifier	
STATUS		
TAGS	Status of claim	
RVS	Relative value scale	

TABLE: HOSPMEMB

DESCRIPTION: Hospital claim charges SOURCE: Claim form

Field Name	Description	Data Source / Field in MOR
SERIES	Claim series number	
BEN_TYPE	Benefit type	
AMT_ACTUAL	Total actual amount	
AMT_MEDIC	Total medicare amount	
AMT_COMP	System computed amount	
RUV_DATE	Relative unit value date, if ben_type is B4	
PAY_TO	Claim payee code	
VOUCHER		
DEF_CODE	Deficiency code	
REMARK		
TAGS		
STATUS	Claim status code	

TABLE: ROUTE DESCRIPTION: claim in process tracking SOURCE: UCPS

Field Name	Description	Data Source / Field in MOR
SERIES	Claim series number	
USER	User security code	From UCPS library
PR_CODE	Process_code	From UCPS library
DATE_REC	Date when claim was received	
TIME_REC	Time when claim was received	
DATE_REL	Date when claim was released	
TIME_REL	Time when claim was released	
REMARK	Deficiency code	
DATE_REC2		

Appendix J: Installing MyODBC in Windows

MyODBC is software that allows a computer program to access an Open Database Connectivity (ODBC) compliant database like MySQL. For example, for SPReAD, it is envisioned that users will use the SPSS statistical software package to access the MySQL SPReAD database on the server. For a separate Windows machine to access the SPReAD MySQL database, the MyODBC package has to be installed in that Windows machine.

This section demonstrates how to install MyODBC in a Windows machine.

1. Go to the MySQL website by typing <u>http://www.mysql.com</u> on your browser. This requires an Internet connection.



2. On the right side column, under Versions, click on MyODBC 2.50 (version may vary; usually the latest version is posted in this area). The following window appears:



3. Click on the version appropriate for your computer. This will bring you to a set of available servers where you can download MyODBC. Choose one nearest to your country.



4. A window will pop-up asking if you wish to download the file to your computer. Click on 'Save'. You may save this file into any directory on your local hard disk. For the purpose of this tutorial, the file will be saved in the 'Desktop' directory.



5. You may now exit the browser and look at your 'Desktop' where you saved the file.



6. Double-click on the myodbc file. This will open the Winzip application (or whatever archiving software installed in the computer). A list of the files in the myodbc file will be shown.

🗐 WinZip (Evaluati	on Version) - myo	odbc-2.50.39-	win95.z	zip						_ 8 ×
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mssetup.ex	3/3/95 10:00 AI	vi 7,543	5%	7,140						
🛅 admndemo.exe	10/30/97 2:57 F	PM 233,984	67%	77,592						
🖻 Ctl3d95.dl_	3/3/95 10:00 Al	vi 14,974	3%	14,453						
🔊 ctl3dnt.dll	11/10/97 11:36	27,136	51%	13,168						
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🖻 Ds16gt.dl_	3/3/95 10:00 Al	vi 3,827	5%	3,629						
🖻 Ds32gt.dl_	3/3/95 10:00 Al	vi 4,608	75%	1,162						
Nfc30.dll	7/11/95 8:50 PI	M 322,832	50%	162,004						
Msvert20.dl_	3/3/95 10:00 Al	vi 144,994	4%	138,890						
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🔊 Gtrtst32.dll	11/2/96 10:00 /	AM 90,624	52%	43,158						
🖻 Odbc16gt.dl_	3/3/95 10:00 Al	M 13,163	3%	12,756						
🖻 Odbc32.dL	3/3/95 10:00 Al	M 30,962	3%	30,093						
🖻 Odbc32gt.dl_	3/3/95 10:00 AI	M 2,699	3%	2,606						
🗂 Odbcad32.exe	6/7/95 9:24 AM	7,168	66%	2,422						
🖻 Odbccp32.cp_	3/3/95 10:00 Al	vi 3,105	4%	2,971						
🖻 Odbccp32.dl_	3/3/95 10:00 Al	vi 52,172	3%	50,455						
🖻 Odbccr32.dL	3/3/95 10:00 AI	M 96,975	3%	93,597						
🖻 Odbeinst.hl_	3/3/95 10:00 Al	M 12,517	6%	11,737						
🔊 Sample32.dl_	3/3/95 10:00 Al	M 6,178	3%	5,975						
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🔊 Quiktest.dll	8/16/01 12:11 /	AM 329,376	58%	136,857						
🙍 readme	7/19/01 4:26 Al	vi 14,435	73%	3,937						
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🔄 Change.log	8/15/01 10:11 F	PM 18,296	61%	7,103						
Myodbc.dll	9/18/01 10:52 F	PM 299,008	45%	163,007						
Myodbcd.dll	9/18/01 10:54 F	PM 499,762	55%	226,693						
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7. Double-click on the Setup.exe file.

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Ctl3d95.	.dL_	3/3/95 10	:00 AM	14,974	3%	14,453	А						
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Drvstp3	2.exe	10/31/97	12:24	95,744	75%	23,899	А						
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🔄 🖻 Ds32gt.	dL_	3/3/95 10	:00 AM	4,608	75%	1,162	А						
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8. This will start the MyODBC installation. Click 'Ok'.

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Ds16gt.dl_	3/3/95 10:00 AM	3,827	5%	3,629 A						
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🔊 Quiktest.dll	8/16/01 12:11 AM	329,376 5	58% 1	36,857 A						
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Odbctest.hlp	10/26/96 1:00 AM	57,722 3	30%	40,293 A						
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🖻 Odbc.nt	9/18/01 11:03 PM	2,181 7	70%	646 A						
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9. Click on 'Continue'.



10. A list of available ODBC drivers will be shown. Choose MySQL then click on Ok.



11. This will install the MyODBC driver. The next window will list all available ODBC drivers. Choose 'MySQL' then click 'Ok'.



12. The next window is critically important. The correct values need to be entered to establish a successful connection between the Windows machine and the SPReAD server. The following data as shown on the image below should be entered.



13. A successful installation will show the following message. Successful installation means SPReAD databases may now be accessed by external computer programs through MyODBC.



The next section will show how to access the SPReAD datawarehouse

Appendix K: Connecting The Database To SPSS

SPSS is a statistical software package created and distributed by LEAD Technoloiges, Inc. It is one of the tools preferred in analyzing data warehouses for its various features and processing speed. This appendix is made up of two sections. The first section demonstrates how to access the SPReAD data warehouse using SPSS. The second section shows how to analyze the data after access to the warehouse has been established.

How to Access the SPReAD Data Warehouse using SPSS

1.Click on Start \rightarrow Program Files \rightarrow SPSS for Windows. This will start the SPSS application. You should be able to see the screen below.



2. On the top menu, click on File \rightarrow Open Database \rightarrow New query

📺 Untitled - SPSS Dat	a Editor												. 8 ×
<u>File Edit View D</u> ata	Transform	<u>Analyze</u> <u>G</u> raphs	<u>U</u> tilities <u>W</u>	indow <u>H</u> elp									
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5. This opens the Database Wizard



6. In the box of available databases, you will see two SPReAD Databases: SPReAD Claims and SPReAD DataWarehouse. SPReAD Claims contains claims data on a record per record basis (obtained from the Unified Claims Processing System or UPCS) while SPReAD DataWarehouse contains the data from Monthly Operating Reports from the PhilHealth Regional Offices.

You may choose either source when analyzing data. For the following steps, let us choose SPReAD DataWarehouse. Click Next after highlighting SPReAD DataWarehouse.

Database Wizard		×
Welcome To the Database Wizard! This wizard will help you select the data elements you wish to w Select Data Source:	vork with during your SPSS session.	
From which data source(s) would you like to retrieve data?	 dBASE Files dBase Files - Word Excel Files FoxPro Files - Word MS Access Database sample-MySQL SPReaD Claims SPReaD DataWarehouse Visual FoxPro Database Visual FoxPro Tables 	
< <u>B</u> ack. <u>N</u> ext >	Cancel	Help

7. The next window will show the available tables in the SPReAD DataWarehouse. There are two types of tables in a data warehouse: fact table and dimension tables. Fact tables contain data collected from the regions. Dimension tables contain parameters from which queries to the fact tables may be done (eg., Date dimension to do queries by date, Location dimension to do queries by province or region, Sector dimension to do queries by type of member – government, individually paying, etc).

Dimension tables, by convention, start with a letter 'D' (eg., Ddate, Drhio, Dsector). Fact tables are those which do not start with a capital letter 'D'.

Database Wizard - Step 2 of 6	×
Select Data Now you need to select the fields you wish to work the mouse button pressed, drag it over to the 'Retri Hint: Dragging a table selects all of its fields.	< with. To select items, click on an item in the 'available' list and, with ieve Fields' list.
Available Tables:	Betrieve Fields In This Order:
Benefits claimsproc claimsproc dbuildup dbuildup deniedreduct deniedreduct deniedreduct deniedreduct Dhealthcareprof Dindigenttype Diocation Docation Drunicipality Dreasons	
Sort field names	
< <u>B</u> ack	Next > Finish Cancel Help

8. Depending on the query, the user can then drag and drop the tables from the Available Tables box to the Retrieve Fields In This Order box. For purposes of this example, let us drag the benefits fact table and the Ddate dimension table.

Database Wizard - Step 2 of 6

Select Data

Now you need to select the fields you wish to work with. To select items, click on an item in the 'available' list and, with the mouse button pressed, drag it over to the 'Retrieve Fields' list.

х

Hint: Dragging a table selects all of its fields.



Database Wizard - Step 2 of 6 х Select Data Now you need to select the fields you wish to work with. To select items, click on an item in the 'available' list and, with the mouse button pressed, drag it over to the 'Retrieve Fields' list. Hint: Dragging a table selects all of its fields. Available Tables: Retrieve Fields In This Order: 🕂 🖶 benefits 🖶 benefits: date_key * 🗄 🖶 claimsproc 😓 benefits: geo_key 🖻 🖶 dbbuildup 🖶 benefits: sector_key 🗄 🚰 Ddate ę - benefits: roomboard e deniedreduct Dhealthcareinsti ÷ 🖶 benefits: drugmed ÷ 🖳 benefits: xraylab ÷ 🖣 Dhealthcareprof ą benefits: orfee ÷ 🖣 Dindigenttype ę _ benefits: proffee 🖣 Diocation ÷ 🖳 Ddate: date_key 嶺 Dmunicipality ÷ ę - Ddate: calmonum 🎝 Dprovince ÷ , Ddate: calmoname Dreasons Ŧ 4 Sort field names < <u>B</u>ack Finish Help <u>N</u>ext > Cancel

7. Once the necessary tables are on the right side, click on the Next button subsequently until the wizard exits. The next few figures show the subsequent windows and their purposes. The user may opt to leave these options alone. The next step for example allows the user to limit the retrieved fields. This is useful if there are unnecessary fields in the tables chosen. Limiting the fields will also speed up the performance f the query.

atabase Wizard - Step 4 o	f 6					Ľ
Limit Retrieved C	Cases ved by spec	ifying one or more (criteria.			
Hint: Fields and Functions ca	n be added	to an expression by	y dragging and dropp	ing into an expres	sion cell.	
- Fields:	Criteria:					
		Connector	Expression 1	Relation	Expression 🔺	
drugmed geo_key orfee proffee Eunctions ASCII(strexpr) CHAR(asciicode) CONCAT(strexpr,strexp INSERT(strexpr,pos,ler LEFT(strexpr,count) LTRIM(strexpr)	2 3 4 5 6 4 5 6 6 1 1 2 8 6 6 6 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8	Random Sampling Native rando <u>m</u> sam © <u>A</u> pproxima © <u>E</u> xactly	pling tely 10 = 2 100 case	© <u>S</u> PSS r % of all cases s from the first [andom sampling	
	<	: <u>B</u> ack <u>N</u> ex	it > Finish	Cance	el Help	

9. Variables may also be defined to a more human readable format. Step 5 shows the window where the user can rename the fields from the tables.

Database Wizard - Step 5 of 6

Define Variables

Enter or edit variable names for the fields being retrieved from the data source.

To convert an alphabetic variable to numeric using the original values as value labels, check Value Labels box.

Note: If you do not supply variable names for the fields being retrieved, the resulting variable names may be supplied for you (e.g. var001).

х

	Result Variable Name	Data Type	Value Labels
benefits: date_key	date_key	Numeric	
benefits: geo_key	geo_key	Numeric	
benefits: sector_key	sector_k	Numeric	
benefits: roomboard	roomboar	Numeric	
benefits: drugmed	drugmed	Numeric	
benefits: xraylab	xraylab	Numeric	
benefits: orfee	orfee	Numeric	
benefits: proffee	proffee	Numeric	
Ddate: date_key	date_k1	Numeric	
Ddate: calmonum	calmonum	Numeric	
Ddate: calmoname	calmonam	Alphabetic	
Ddate: calqtr	calqtr	Numeric	
Ddate: calyr	calyr	Numeric	
	< <u>B</u> ack	Next	> Fin

10. The final step will show the SQL query required to perform the merging of the fact and dimension tables. Advanced SQL queries may be written directly on this window.

atabase Wizard - Step 6 of 6						×
Results						
Your selection has resulted in the f	iollowing SQL au	ieru.				
	onormig oge qo					
SELECT "T111."date_key" AS 'da "T11"."roomboard" AS 'roomboar", 'orfee", "T11"."proffee" AS 'proffee "T0"."calmoname" AS 'calmonam", "Ddate" "T0" WHERE "T0"."date_	ate_key), 'T111.' 'T111.'drugmed e), 'T01.'date_ke . 'T01.'calqtr'AS key` = 'T111.'da	igeo_key`AS`igeo `AS`drugmed`, ` ay`AS`date_k1`, `Calqtr`, `TO`.`ca te_key`	o_key), 'T111','sec T11','xraylab' AS 'T0','calmonum' / lyr' AS 'calyr' FRO	tor_key`AS`sec `xraylab`, `T11`.` \S`calmonum`,] M_`benefits``T1	orfee`AS	
- What would you like to do with t	his query?				*	
Betrieve the data I have se	lected		🔽 Cache the d	lata locallu		
C Paste it into the syntax edite	or for further mod	lification		ata iooaliy.		
- Save query to file						
					Browse	
	< <u>B</u> ack	<u>N</u> ext >	Finish	Cancel	Help	

11. Finally, the fields of the chosen tables are displayed.

	date_key	geo_key	sector_k	roomboar	drugmed	xraylab	orfee	proffee	date_k1	calmonum	calmonam	calqtr	calyr
1	5	13	1	1117140	1520123	905579.3	229392.0	1114934	5	5	May	2	2002
2	5	13	4	999680.0	1469652	948328.7	323894.0	1264466	5	5	May	2	2002
3	5	13	7	.00	.00	.00	.00	.00	5	5	May	2	2002
4	5	13	10	175755.0	180430.2	101525.1	24590.00	138443.0	5	5	May	2	2002
5	5	14	1	988175.0	1559668	823872.9	265595.0	978753.8	5	5	May	2	2002
6	5	14	4	12448615	2023110	1019766	418730.0	1337571	5	5	May	2	2002
7	5	14	7	.00	.00	.00	.00	.00	5	5	May	2	2002
8	5	14	10	219050.0	187976.4	82965.91	21995.00	131324.4	5	5	May	2	2002
9	5	1	1	1931235	3728413	1857979	796418.4	2350017	5	5	May	2	2002
10	5	1	4	2142628	4079370	2092382	1112039	2817629	5	5	May	2	2002
11	5	1	7	.00	.00	.00	.00	.00	5	5	May	2	2002
12	5	1	10	394890.0	550806.4	273596.7	107213.0	276058.6	5	5	May	2	2002
13	5	2	1	1373880	2518996	1284718	508417.5	1740047	5	5	May	2	2002
14	5	2	4	521640.0	975155.4	547597.1	257899.0	817764.6	5	5	May	2	2002
15	5	2	7	118870.0	234392.9	128529.6	114731.5	231179.2	5	5	May	2	2002
16	5	2	10	271960.0	308839.5	144467.9	46045.00	223149.4	5	5	May	2	2002
17	5	3	1	2844761	6055905	3890409	2019406	5903126	5	5	May	2	2002
18	5	3	4	3986750	8458544	5347394	3308956	9438735	5	5	May	2	2002
19	5	3	7	.00	.00	.00	.00	.00	5	5	May	2	2002
20	5	3	10	613242.0	739099.9	514850.9	209812.0	740334.4	5	5	May	2	2002
21	5	41	1	2286330	4582549	3219508	1001773	2969298	5	5	May	2	2002
22	5	41	4	6747207	14416311	9589241	3760130	10680517	5	5	May	2	2002
23	5	41	7	.00	.00	.00	.00	.00	5	5	May	2	2002
24	5	41	10	180700.0	325500.7	203533.9	56770.00	203923.0	5	5	May	2	2002
25	5	42	1	1007190	2305659	1432542	440041.0	1319876	5	5	May	2	2002
26	5	42	4	1904816	4724699	3111529	1077850	3139821	5	5	May	2	2002
27	5	42	7	286940.0	813667.5	606091.8	224980.0	655292.4	5	5	May	2	2002
28	5	42	10	351221.0	686622.4	389960.6	137280.0	458446.6	5	5	May	2	2002
29	5	9	1	1761030	2951351	1467142	589178.0	2108109	5	5	May	2	2002
30	5	9	4	938835.0	1574743	777202.9	332850.0	962350.0	5	5	May	2	2002
31	5	9	7	263795.0	483270.7	222914.0	136070.0	428260.4	5	5	Мау	2	2002

Once the tables have been displayed as above, the end user may now perform analyses on the table like any other table. Note that because of the dimension table (Ddate), it is now possible to analyze the data through various parameters (eg., by month, by year, by quarter, by type of holiday, etc). The aforementioned steps demonstrate how to open tables from the SPReAD data warehouse.

How to analyze the data by making graphs

1.Using a sample dataset such as the **benefits** from the **SPReAD** Data Warehouse as shown above, select **Graph** \rightarrow **Bar** from the top menu of the SPSS program.

🧰 benefi	ts - SPSS Da	ta Editor		-							_ 8	×
<u>File</u> <u>E</u> dit	<u>V</u> iew <u>D</u> ata	<u>Transform</u> <u>A</u>	nalyze	<u>G</u> raph:	s <u>U</u> tilities <u>W</u> i	ndow <u>H</u> elp						
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1 : date_k	ey	5		Ra								
6	date key	geo key	sect	Lin	e	drugmed	xraylab	orfee	proffee	date k1	calmonum	
1	5	13		Are	ea	1520123	905579.3	229392.0	1114934	5	5	1
2	5	13		Pie		1469652	948328.7	323894.0	1264466	5	5	ī
3	5	13		Hig	jh-Low	.00	.00	.00	.00	5	5	1
4	5	13		Pa	reto	180430.2	101525.1	24590.00	138443.0	5	5	1
5	5	14		<u>C</u> o	ntrol	1559668	823872.9	265595.0	978753.8	5	5	1
6	5	14		Bo	volot	2023110	1019766	418730.0	1337571	5	5	1
7	5	14	-	Err	or Bar	.00	.00	.00	.00	5	5	1
8	5	14			-	187976.4	82965.91	21995.00	131324.4	5	5	1
9	5	1		Scatter		3728413	1857979	796418.4	2350017	5	5	1
10	5	1		E.E	ogram	4079370	2092382	1112039	2817629	5	5	1
11	5	1		1 1 1 1 1	 J	.00	.00	.00	.00	5	5	1
12	5	1		Se	guence	550806.4	273596.7	107213.0	276058.6	5	5	1
13	5	2		RC	C Cur⊻e	2518996	1284718	508417.5	1740047	5	5	1
14	5	2		<u> </u>	ne Series 🔹 🕨	975155.4	547597.1	257899.0	817764.6	5	5	1
15	5	2		7	118870.0	234392.9	128529.6	114731.5	231179.2	5	5	1
16	5	2		10	271960.0	308839.5	144467.9	46045.00	223149.4	5	5	1
17	5	3		1	2844761	6055905	3890409	2019406	5903126	5	5	1
18	5	3		4	3986750	8458544	5347394	3308956	9438735	5	5	Ī
19	5	3		7	.00	.00	.00	.00	.00	5	5	1
20	5	3		10	613242.0	739099.9	514850.9	209812.0	740334.4	5	5	1
21	5	41		1	2286330	4582549	3219508	1001773	2969298	5	5	1
22	5	41		4	6747207	14416311	9589241	3760130	10680517	5	5	1-1
▲ ▶ \ Da	ta View 🗸 Va	riable View 🆯				4						
Bar			S	PSS Pr	ocessor is read	y					1	

A window such as the one below will provide choices as to what type of graph can be made.

Define Cancel Help
Cancel Help
Help
-11
f cases
variables :es

Select the variables that may be used for constructing the graph. Select the appropriate categorical variable (e.g. by location (RHIO), by date (month) or by sector) that can be used for the x-axis. Variables such as costs of benefits for room and accommodation, drugs and medicines, radiology, surgery and professional fees can be selected for the y-axis.

N	Bars Represent	(1 222
date_key[date_key_	C N of cases	C % of cases	<u> </u>
sector_key [sector_	C <u>C</u> um. n of cases	C Cu <u>m</u> . % of cases	Paste
drugmed [drugmed]	Other <u>s</u> ummary funct	ion	<u>R</u> eset
* xraylab (xraylab)	Variable:	omboard (roomb	Cance
proffee [proffee]	Chance	Summary	Help
date_key [date_k1]	CTON 2	, commary	
calmonum (calmonu calmoname (calmon)	Category Avie:	1	
calinorianie [calinori calgtr [calgtr]	A thin [thin]		
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sector_key [sector1 —	1 Use chart specification	ons from:	
🖞 sectorname [sectorr 🖵	Eile		Options

For more information about the different choices, click on **Help**.

The chart is then displayed in the the SPSS Viewer, another window which shows all the results of analysis and graph construction.



The chart can be edited by double-clicking on the chart itself. From the chart editor window, titles, bar labels and other changes can be made.


Changes can be made by drop down menus from the SPSS top bar or by double-clicking on different parts of the chart.

Putting in a title for the chart:



Fonts can be changed by selecting the title bars and selecting the font symbol.



Axis labels can be modified by double-clicking on either the x or y axis.

```
╔╗╺┓┽┈╨╙╱┰<u>╎╚</u>╝<u>┼</u>遽
```



Additionally, one may choose to put in bar labels to facilitate viewing of results.



Once the chart editor window is closed, the chart can be copied from the viewer window and be pasted on any other document (i.e. Word or Powerpoint) as an image file (*.BMP).



Copying into a Word document:

🔤 Document 1 - Microsoft Word 📃 🗗	×
Eile Edit <u>V</u> iew Insert Format Iools Table <u>Wi</u> ndow <u>H</u> elp Quickword Acrobat	
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Page 1 Sec 1 1/1 At 1" Ln 1 Col 1 REC TRK EXT OVR	



Editing should be done in the SPSS Chart Editor as the pasted imaged file in the receiving document can not be edited.

2.Using the same dataset above, select **Graph** \rightarrow **Pie** from the top menu of the SPSS program either from the SPSS Data Editor window or the SPSS Viewer window.



Select the type of chart.



A	Slices Represent	OK
#> date_key [date_key _	C N of cases C % of cases	UK
geo_key [geo_key]	Cum, n of cases Cum, % of cases	<u>P</u> aste
xraylab [xraylab]	Other summary function	<u>R</u> eset
orfee [orfee]	⊻ariable:	Cancel
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👂 calmonum (calmonu	Cillarge commary	
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geo_key [geo_ke1]		
🖁 rhio [rhio]		Titlee
sector_key [sector1	Use chart specifications from:	Tides
	File	Options

Further editing can be done by double-clicking on the graphs and by using the menus.



The graph can then be copied and pasted into another document. The image can be resized to fit into the page width.



How to analyze data by creating explore tables

1. Select Analyze \rightarrow Descriptive Statistics \rightarrow Explore from the top menu of the SPSS program either from the SPSS Data Editor window or the SPSS Viewer window.



2.Select variables for analysis. Enter quantitative variables into the Dependent List and then choose categorical variables into the Factor List.

R Explore		×
geo_key [geo_key] sector_key [sector] date_key [date_k1] date_key [date_k1] calmonum [calmonu] calmoname [calmonu] calqtr [calqtr] calyr [calqtr] geo key [geo ke1]	Dependent List: roomboard [roombo drugmed [drugmed] Eactor List: (*) date_key [date_key]	OK <u>P</u> aste <u>R</u> eset Cancel Help
 ▲ rhio [rhio] ♦ sector_key [sector1 	Label <u>C</u> ases by:	
Display C Both C Statistics C Plots	Statistics Plots Opt	ions

3. The resulting output can be then exported by saving it as a text file for printing and interpretation.



xport: Output Do	cument (No Charts)
Export File	Chart Size,
File Name: C:\My Doc	uments\SPREAD\OUTPUT
Export What	Export Format
C <u>A</u> ll Objects	File <u>T</u> ype:
C All <u>V</u> isible Objects	Text file (*.txt)
• Selected Objects	
OK	

📕 Output - WordPad						_ 8 ×
<u>File E</u> dit <u>V</u> iew <u>I</u> nsert	F <u>o</u> rma	at <u>H</u> elp				
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Þescriptives						
n 1			2	8	ñ	- i -
	date	e_key		Statistic	 Std. Error	1
 roomboard	 1	 Mean		1257162.9345		1
1 1	I				1	I
		95% Confidence Interval for Mean	Lower Bound	732766.3972	1	
	ļ		Upper Bound	1781559.4718		1
		5% Trimmed Mean		934150.4239		
		Median		310264.0000		
		Variance		4120773177552.083		
		Std. Deviation		2029968.76270		1
		Minimum		.00		
		Maximum		10156004		
	Range	Range		10156004		
		Interquartile Range		1595656.5050		
		Skewness		2.747	 .309	1
	l	 Kurtosis		8.470	 .608	1
						•

Other methods of analysis can be done from choosing other options in the Analyze \rightarrow Descriptive Statistics.(i.e. Frequencies, Descriptives and Crosstabs).