

## **Developing A Web Based Interactive Business Planning Application**

### **Using Open Source Software**

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Preparing a good business plan is a necessary component for the success of any new entrepreneurial venture. Even the Small Business Administration refers to the business plan as, "The Business Plan, Your Roadmap to Success" (SBA, 2000). Many prospective entrepreneurs have limited knowledge and expertise in business and business planning. However, whenever they search for venture capital or funding, one of the first questions asked is, "Do you have a business plan?"

A review of the literature on business planning will show that several software packages costing anywhere from \$50-\$300 and above are available for purchase. New titles in the business-planning category are continuing to be developed. Most applications provide templates for writing executive summaries and presenting the financial spreadsheets required by banks and other institutions.

One important fact becomes apparent when reviewing the business planning software available is that they are designed to sell software. This software must be purchased and then loaded on one's personal computer. The majority of these plans require the use of a spreadsheet or a spreadsheet template. This approach assumes that the user is familiar with spreadsheets and basic accounting principles. Many of the users do not possess some of these skills. Therefore, it is important to develop an application that is easy to understand and use, an application that can be used by an individual with a limited understanding of accounting and business planning.

The purpose of this project is to develop a software package on business planning, designed in such a way as to meet the needs of prospective entrepreneurs, particularly those individuals with limited skills. Since funding for this endeavor is very limited, freely available Open Source Software was used as the core of the application.

### **BUSINESS PLANNING SOFTWARE REVIEW**

A review of current business planning software and business planning theory was necessary to insure that any software design would meet or exceed current trends in business planning and applications.

### **BUSINESS PLANNING SOFTWARE**

I have personally reviewed but not tested several business planning software applications. Those applications reviewed include:

- ? Business Plan Pro 7.0, PaltoAlto Software
- ? Business Plan: Interactive Software, Success, Inc.
- ? Microsoft Office Business Plan, Microsoft, Inc
- ? PlanWrite( for Business, Center for Business Planning
- ? Interactive Business Planner, Canada Business Services Centres
- ? Plan Magic, Plan Magic Corporation
- ? SBA Download Software, Small Business Administration

Of all these applications, only one is truly interactive. The Interactive Business Planner published by the Canada Business Services Centres is interactive and is Internet ready. With the Interactive Business Planner, one can set up an account, login with a User Id and Password, and prepare a business plan online. Another option available is to download planning templates and prepare the plan on one's own personal computer.

## **BUSINESS PLANNING THEORY**

A review of business planning information published by the Small Business Administration was done. Some of the documents reviewed were: a) The Business Plan, Your Roadmap to Success, b) The First Steps: How to Start A Small Business, and c) Shareware Programs for Starting Your Own Business. Other documents reviewed included: a) Developing A Thoughtful and Effective Business Plan (Christian, 2000), b) Cash Flow Example: Direct Method (Prairie Public, 2002), and c) Cash Flow Example: Indirect Method (Prairie Public, 2002).

I was already familiar with QuickBooks (accounting software) having previously used it for several years. Therefore, charts of accounts to be used in the software were selected to match the QuickBooks arrangement. One additional objective is to design a method whereby the business plan data could be exported to Quickbooks. This would allow the transition from planning to implementation of an accounting system much easier. It is the intent that once this is accomplished, the software could be modified so that it would be compatible with other accounting applications.

## **OPEN-SOURCE SOFTWARE USED**

Since funding for this project is very limited, Open Source Software (OSS) was used as the core of the application. Open Source is, "a certification standard issued by the Open Source Initiative (OSI) that indicates that the source code of a computer program is made available free of charge to the general public" (Webopedia, 2002). According to Wheeler (2001), OSS are "programs whose licenses permit users the freedom to run the program for any purpose, to modify the program, and to redistribute the original or modified

program (without payment or restriction on who they can redistribute the program to)."

The term "open source software" and those who use it tend to stress the technical advantages of the software. The term "free software" and those who use it tend to emphasize the "freedom from control by another" (Wheeler, 2001

Open Source software used included: a) MySQL, a data base management system, b) PHP3, a programming language, c) Apache, a WEB Server Platform, d) Linux (RedHat), an operating system, and e) PhpMyAdmin, a data base administrative system..

All software is installed on a Celeron 700 MHz, 40 GB ATA/100, 64MB RAM server with a Linux operating system leased from CiHost of Bedford, Texas.

### **MySQL**

MySQL is an Open Source data base management system us standard SQL statements. "Today MySQL is the most popular open source database server in the world with more than 2 million installations. . . Firms such as Yahoo! Finance, MP3.com, Motorola, NASA, Silicon Graphics, and Texas Instruments use the MySQL server in mission-critical applications" (MySQL, 2002 )

The current version (3.23) is a stable version that is recommended for most users. Binary packages (tar.gz) and RedHat (rpm) can be downloaded for Linux systems. There are many other packages available for download.

### **PHP3**

"PHP Hypertext Preprocessor is a server-side HTML embedded scripting language used to create dynamic Web Pages" (Webopedia, 2002). The PHP script is

quite similar in syntax to that of Perl or C with the script being enclosed within special PHP tags (<? and ?>).

"Because PHP is embedded within tags, the author can jump between HTML and PHP (similar to ASP and Cold Fusion) instead of having to rely on heavy amounts of code to output HTML" (Webopedia, 2002).

PHP works very similar to JavaScript. However, JavaScript and PHP process the scripts very differently. JavaScript is interpreted and executed by the browser once the web page has been downloaded to the viewer's computer. With PHP, the script is interpreted and executed on the web server before the web page is sent to the users browser. This way, the user's browser only receives the output of the page after the script was executed. The user cannot view the script itself.

PHP can perform any task any CGI program can do. It's strength lies in its compatibility with many types of databases. PHP can also talk across networks using IMAP, SNMP, NNTP, POP3, or HTTP.

The code is not difficult to use or understand if one has some basic knowledge of programming. Take a look at the following PhP3 example for "Hello World".

```
<HTTP>
<BODY>
Sample PHP Code
<BR>
<?
EHCO "Hello World";
?>
</BODY>
</HTML>
```

The following example of code includes a simple calculation and output.

```

<HTMP>
<BODY>
Sample PHP Code
<BR>
<?
$amount = 50 * 10;
ECHO "The amount is equal to: " . $amount;
?>
</BODY>
</HTML>

```

### **phpMyAdmin**

PhpMyAdmin, a program designed specifically to handle the administration of MySql over the web, was also used. This program is very easy to use and allows one to do a variety of operations on the database. Current phpMyAdmin can complete the following functions

- ? Create and Drop databases
- ? Create, Copy, Drop and Alter tables
- ? Delete, Edit and Add fields
- ? Execute and SQL-statement, even batch-queries
- ? Manage keys on fields
- ? Load text files into tables
- ? Create and Read dumps of tables
- ? Export data to CSV values
- ? Administer multiple servers and single databases
- ? (PhpWizard, 2002)

### **APACHE WEB SERVER**

The Apache Web Server, written by a loosely-knit group of programmers, has become the world's most popular Web server. Since it was developed from some existing NCSA code with a variety of patches added, it was referred to as a patchy server - hence the name Apache Server (Webopedia, 2002). Apache was originally written for UNIX

but now there are other versions that run under OS/2, Windows as well as other platforms.

According to The Netcraft Web Server Survey, Apache is used nearly two and one-half times its closest rival Microsoft. In January 2002, Apache was running on nearly 9 billion sites (8.99 billion), while Microsoft Server software was running on some 3.68 billion systems.

### **LINUX (REDHAT)**

Linux, a free Unix-type operating system, was initially created as a hobby at the University of Helsinki in Finland by a student, Linus Torvalds. The system was developed under the GNU General Public License making its source code freely available. Although development began in 1991 and continues today, the most current version, version 2.4 was released in January of 2002 (Linux.com, 2002).

The staff at LinuxLinks.com, the Linux portal, has listed 10 reasons why Linux should be the best operating system for you. These 10 reasons are:

- ? A Linux Distribution has thousands of dollars worth of software for no cost
- ? Linux is a complete operating system that is: a) stable, b) reliable, and c) extremely powerful
- ? Comes with a complete development environment, including C, C++, Fortran compilers, toolkits such as Qt and scripting languages such as Perl, Awk and SED.
- ? Excellent networking facilities
- ? The ideal environment to run servers such as a web server (e.g. Apache), or an FTP server
- ? A wide variety of commercial software is available if your needs aren't satisfied by the free software
- ? An operating system that is easily upgradable
- ? Supports multiple processors as standard
- ? True multi-tasking

- ? An excellent window system called X, the equivalent of Windows but much more flexible.
- ? (LinuxLinks.com, 2002)

## **SOFTWARE DEVELOPMENT**

A review of the selected business planning software applications revealed many similarities among them. This is not surprising. After all, a business plan by any other name is still a business plan. Most of them seemed to follow the basic pattern for a business plan as recommended by the Small Business Administration. Therefore, an outline of a business plan as suggested by the Small Business Administration was used as a guideline for the starting point of the software.

### **PLANNING STRATEGY**

According to the Small Business Administration (SBA), there are four major parts of a business plan: the description of the business, the management plan, the marketing plan, and the financial plan. An executive summary was added to these four parts to make up the core of the application.

Attachment 1, Flowchart: The Interactive Business Plan, shows the primary sections to be included in the application. One will note that the executive summary will be compiled from information included in description of the business, the management plan, the marketing plan, and the financial plan.

A variety of questionnaires will be developed corresponding to each of the major four sections of the plan. These questionnaires will be presented as Forms through web browsers and responses to the forms will be used to complete the various sections.

Whenever information is needed that cannot be properly included as a specific question in a questionnaire, the user will be asked to complete a sentence or paragraph relating to the needed information. Whenever possible sample information will be provided.

## **IMPLEMENTATION STRATEGY**

Preparing the Financial Statements was chosen to begin the design. This is primarily due to the fact that numbers, calculations and numerical analysis is easier to program than creating grammatically correct sentences in descriptive statements. The completed Financial Statement section will include: a) Three year Projected Income Statements, b) Three Year Cash Flow Statements, c) A Performance Balance Sheet, d) Descriptive Graphics and e) Easy to Understand Documentation.

Following is a list of parameters and assumptions used to define the structure of the program:

- ? Forms will be used to collect all data
- ? The user should have freedom to select a business type
- ? The user should have freedom to select his or own chart of accounts
- ? The user should be able to base the output on their own set of assumptions
- ? The user should be able to modify their set of assumptions without difficulty
- ? The user should be able to save the contents of the current interactive and be able to bring it up for further processing at a later date
- ? The user should be able to start over with ease
- ? The user should be able to play what if games
- ? The user should be able to download and print out the results
- ? The printed output should be presented in a professional
- ? The user's screens should be easy to read and pleasing to the eye
- ? The user should be able to prepare the financial statements with little or no knowledge of accounting
- ? The user should have supporting information available

Attachment 2, Flowchart: Preparing an Interactive Financial Plan, shows the flow of information and the corresponding processing procedures. First, the user must select the type of business that he or she is going to establish. To do this, one simply clicks on a business type selected from a listing of businesses shown on the home web page. This will generate a Form titled, “EZ-Interactive Business Planning: Basic Business Account Selection.”

The form is generated from a master chart of accounts table by a program written in PHP3 using the MySQL database. Attachment 3: Sample PHP3 Code for Chart of Accounts Page Generation shows sample code that is similar to the code used to generate the Chart of Accounts Selection Pages. Please note that the Form Action line and the Table definition line are written in standard HTML format. The PHP3 code begins with the <? Symbols and ends with ?>. The ECHO line in the PHP3 code includes both PHP3 code and HTML code. This ability to mix HTML and PHP3 makes building dynamic web pages much easier.

The user now selects individual accounts to be used in the plan by clicking a checkbox located to the left of the listed account. Blank text boxes are included on the form so that the user can customize their chart by adding additional accounts. This ability to add new accounts to the chart without difficulty is unique to this program. All in all, the user selects revenue accounts, expense accounts and additional reduction accounts (Owners Draw and Note Payments). The ability to calculate a Net Income after additional reductions is valuable in the preparation of the Cash Flow Statement.

Once the user hits the submit button, the financial assumptions page is generated and displayed. During this process a Scratch Chart of Account Table is established. The one thing that PHP3 can do is to pass variable data from one form to another. However, it does not allow one to create session variables. One way around this is to use scratch tables.

The Financial Assumptions Page shows all of the accounts that the user had selected on the preceding screen. If the user is not satisfied they can go back and add or delete accounts. At this point the user enters financial data including: a) estimated monthly amounts, and b) estimated annual increases or decreases. The increases or decreases can be either a cash amount or percentage. One last thing that the user must do at this point is to enter a unique user ID. This ID will be used later whenever the financial data is saved. A login procedure using an ID and password will be added later and this information will be used to keep track of the account. When satisfied with the assumptions, the user should click the Submit button.

Next the Financial Projections Update Screen will be generated. This page is yet another form. The user can now review the results of his or her assumptions presented as three years of income and expense data including any additional reductions. The first year is displayed on a monthly basis and year two and three is displayed on a quarterly basis.

The user now has the option to change any of the monthly or quarterly amounts listed. Users are not allowed to change any totals these will be recalculated during the next process. The ability to change data at this time is extremely important. Remember, that

during the assumption state, the user had to project yearly data either as an amount or a percentage. The user can now refine the assumptions to allow for seasonal changes in the projections as well as make changes for any other factors that might affect their business.

Once finished modifying, the user will click the Update button located at the bottom of the page. This action will cause the program to generate and send to the screen a copy of the Projected Income Statement. This time the statement is not a form but is presented as a professional looking Income Statement.

The user is now given three options shown by three links located on the bottom of the web page. The first is the option to make changes. When one clicks on the Make Change Link, a new form appears similar to the one shown on the Update Screen, except it now has the most recent values included. One simply has to input different numbers and click submit. In which case, an updated Projected Income Statement will be sent to the user's screen. This process is depicted in Attachment 2, Flowchart: Preparing on Interactive Financial Plan.

The remaining options quite self-explanatory Save and Start-Over. When one saves the plan they are directed back to the Web Site Home Page. If one clicks on Start Over, he or she is directed to the Chart of Accounts Selection Page.

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

The purpose of this project has been to develop an interactive business planning software package using Open Source Software where possible. The Open Source Software used in the project included; Apache—web server software, Linux—operating

software, PHP—a programming language, and MySQL—a database management system.

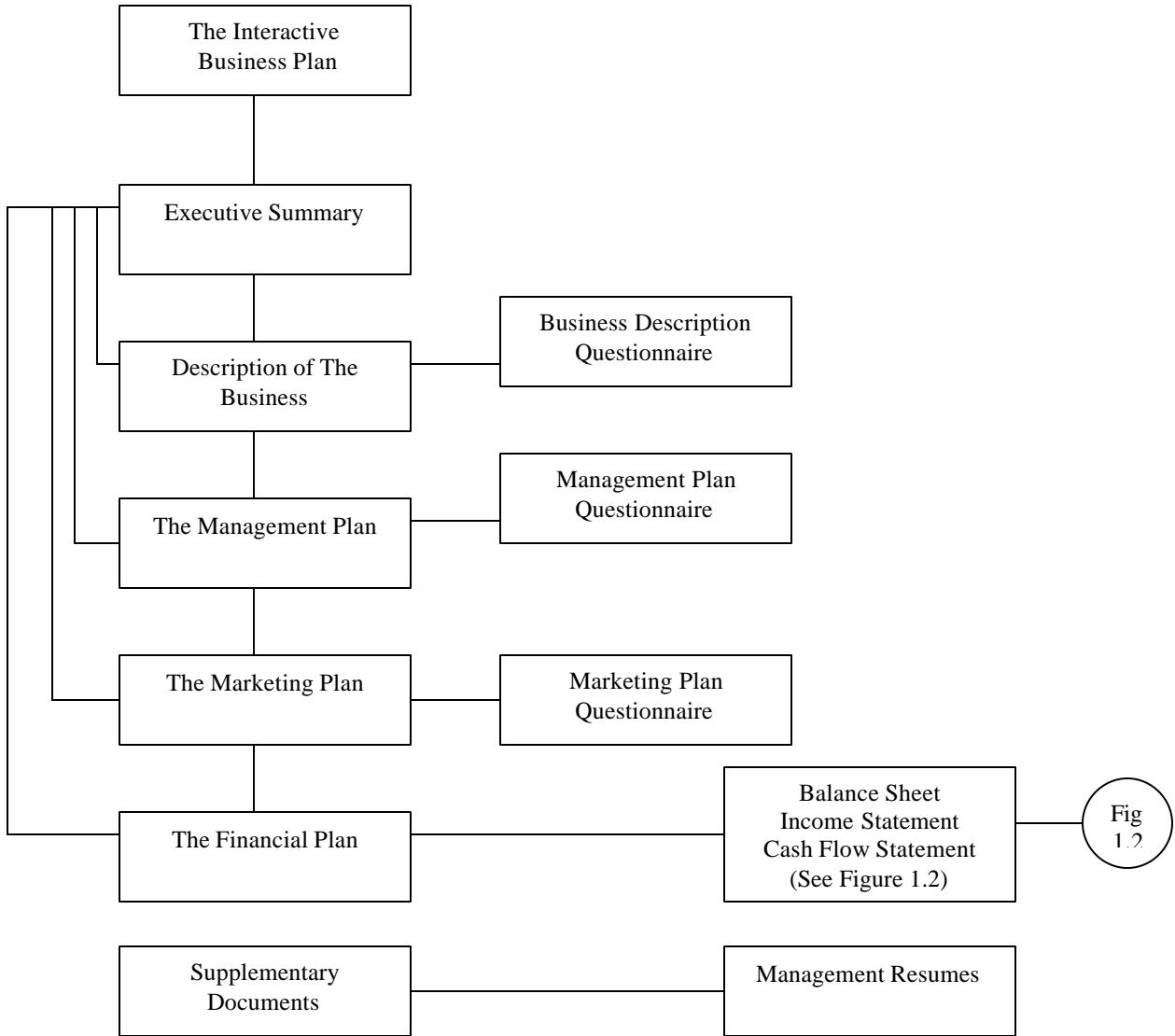
A limited review of business planning theory and currently available business planning software was conducted. Brief explanations of the open source software used were presented.

The concept of the total business planning application with attached flowcharts was presented. Also, an explanation of design and programming consideration for the Income Statement section was presented.

Today, quality open source software covering a variety of functions is readily available. Information on the use of such software is also accessible and fairly easy to obtain. Both PHP and MySQL are quality software applications that are fairly easy to use.

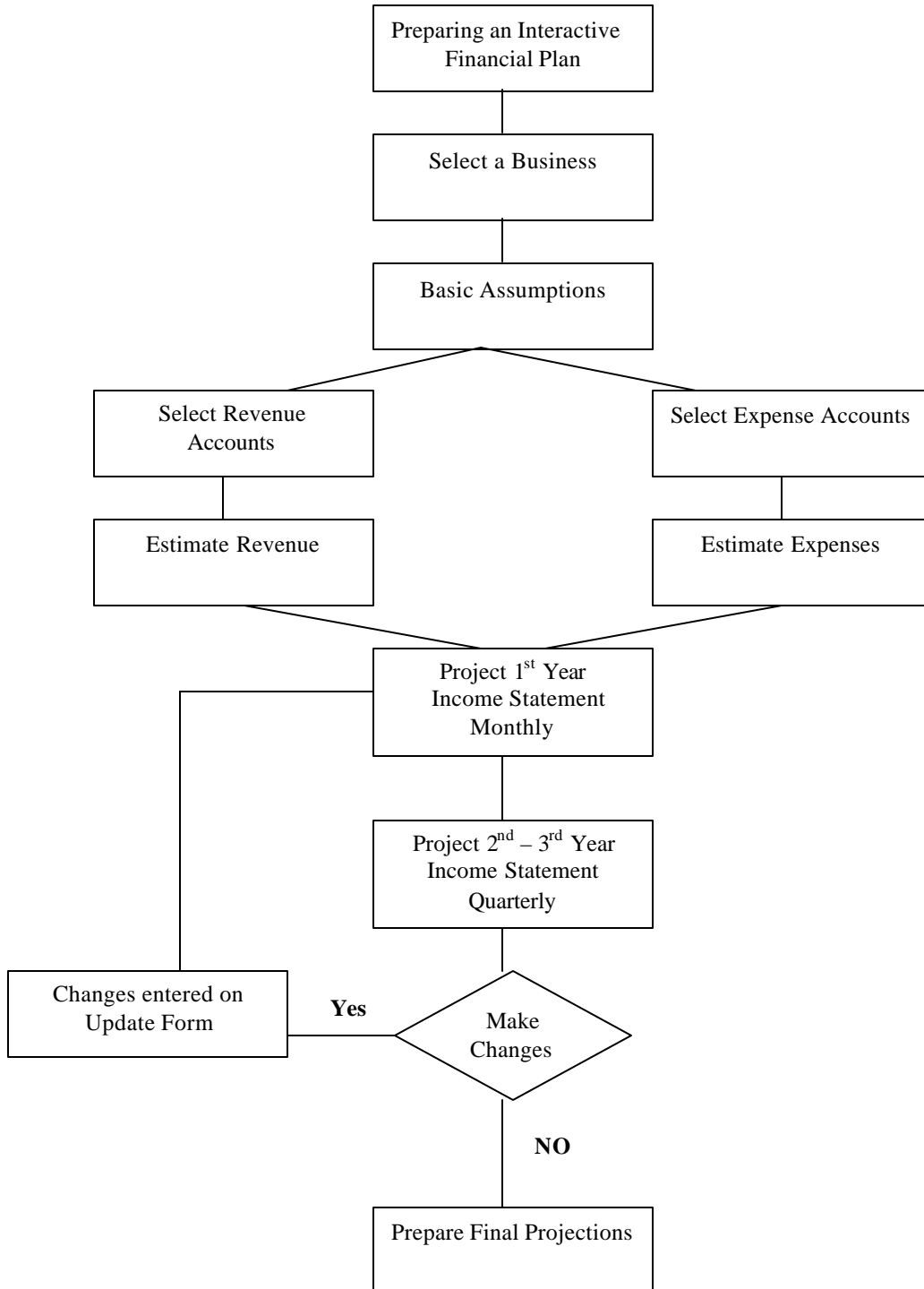
Individuals interested in the development of dynamic web pages, designing database structures, programming, or teaching Information Technology should review and try both PHP and MySQL. The experience will be quite rewarding.

**Attachment 1**  
**Flowchart: The Interactive Business Plan**



### Attachment 2

#### Flowchart: Preparing an Interactive Financial Plan



**Attachment 3: Sample PHP3 Code for Chart of Accounts Page Generation**

```

<form ACTION="financial_assumptions" METHOD="POST">
  <table border="1" width="684">

  <?
  $db = mysql_connect("localhost","(user ID)","(password)");
  mysql_select_db("(database name", $db);
  $result1 = mysql_query("SELECT * FROM
  revenue_chart_of_accounts",$db);
  $revenue_records = mysql_num_rows($result1);
  $revrecno = 0;
  while($revenue_record_number < $revenue_records)
    {
      $revsql = mysql_query("SELECT * FROM
      revenue_chart_of_accounts",$db);
      mysql_query($revsql);
      $revname[$revrecno] =
  (mysql_result($result1,$revenue_record_number,"revenue_account_name
  "));
      echo "<tr valign=top><td width=200>". "<input
  type=checkbox name=revenued_checked[$revenue_record_number]
  value=1>" . "</td></tr>" ;
      $revenue_record_number = $revenue_record_number +1;
    }
  ?>

</form>

```

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