

# Receipts and Envelope Tracking Programs

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## Introduction

This document describes the operation of two related programs, RECEPSUM and ENVELSUM, used to keep track of Church receipts and offerings. These two programs were written specifically for Messiah Evangelical Lutheran Church, South Windsor, Connecticut, but could be readily employed elsewhere.

RECEPSUM is intended to be used for the receipts tallying process at Church (normally after the Sunday service). It allows entering individual amounts and assigning them to an envelope (if appropriate) and the intended use (regular envelope, plate, designated gift, &c.). It provides for two forms of printed output, a “Summary sheet”, that lists totals for the various categories of giving, and a “Deposit slip”, that lists totals for cash and coin, and individual entries for each cheque. This latter form is intended to be printed out and included with the official bank deposit slip to avoid needing to enter each cheque individually on the official bank deposit slip.

ENVELSUM is a tool to track individual offering for purposes of providing each individual member a record of their giving. It is intended to be used by the Financial Secretary to assist in providing quarterly and end of year reports to each member and managing envelope assignments. It provides for generating the following printed forms:

- Quarterly reports for each member
- List of envelope assignments for a given year
- Address labels, for envelope boxes and quarterly report envelopes

RECEPSUM and ENVELSUM share a common database, so data that has been entered using RECEPSUM will also be used by ENVELSUM when generating quarterly reports.

## Printing

Printing for both the RECEPSUM and ENVELSUM programs is currently not done directly, but indirectly by creating a PDF file and sending it to the application associated with the .PDF extension under Windows. Typically, this will be Adobe Acrobat Reader. (There are plans to support direct printing to a printer in future versions of the software.)

# Recepsum

The RECEPsum program presents data in three side-by-side panels: left, middle, and right, as shown by the following screen-shot.

The screenshot shows the RECEPsum software interface with the following data:

Date: Apr 21, 2019    Counters: A. Hamilton    I. Newton

Receipts Summary				
Description	Coin	Cash	Checks	Total
Budgeted Giving				
Regular Envelope	1.75	234.00	6326.00	6561.75
Plate		606.00		606.00
Sunday School	1.75	2.00		3.75
LACE Interest				
Non-Budgeted Income				
Coffee				
Altar Flowers				
Banners			30.00	30.00
Womens Guild				
Fund Giving				
BGH			60.00	60.00
Student Fund			30.00	30.00
Building & Equipment				
Synod Mission Outrea			25.00	25.00
Landscaping				
Helping Hands				
Transfers				
TOTAL	3.50	842.00	6471.00	7316.50

Individual Items			
Env	Check #	Amount	Description
1		cash	606.00 Plate
2		cash	2.00 Sunday School
3		coin	1.75 Sunday School
4	49	8832	50.00
5	25	2657	25.00
6	21	1116	150.00
7	9	3614	30.00 Banners
8	78	2460	30.00 Student Fund
9	51	9732	60.00 BGH
10	40	4513	25.00 Synod Mission Outreach
11	40	4513	160.00
12	51	9731	600.00
13	20	275	75.00
14	19	13319	200.00
15	46	2995	20.00
16	66	133	50.00
17	57	379	190.00
18	43	4378	200.00
19	77	4299	50.00
20	78	2461	25.00
21	57	382	450.00
22	71	cash	2.00

Totals by Category		
Description	Total	Type
1 Regular Envelope	6561.75	B
2 Altar Flowers		N
3 Banners	30.00	N
4 BGH	60.00	F
5 Building & Equipment Fund		F
6 Coffee		N
7 Helping Hands		F
8 LACE Interest		B
9 Landscaping		F
10 Plate	606.00	B
11 Student Fund	30.00	F
12 Sunday School	3.75	B
13 Synod Mission Outreach	25.00	F
14 Womens Guild		N
TOTAL	7316.50	

## Left Panel

The left panel presents amounts as totals by category (intended use) and medium (coin, cash, or cheques). Lump amounts for Coin and Cash can be entered under the appropriate category in the left panel directly (but see below for entering individual cash or coin items). If the appropriate category is not already shown in the left-hand panel, a new one can be created simply by typing in its description under the appropriate box. Cheques cannot be entered here, but must be entered individually using the middle panel.

The left-hand panel displays data in a form approximating how it will appear in the printed Summary Sheet.

## Middle Panel

The middle panel offers two modes. By default, it provides for entry of all individual items. Clicking on the "Individual Items" button at the top of the panel will switch to a mode that displays (and allows for entering) cheques only. Most data will be entered via this panel.

Clicking on the "Env" column heading will cause the list of items to be sorted by envelope number. (Click again to unsort.)

## Individual Item Mode

Enter individual items here. If the Description field is left blank, the amount will be credited to “Regular Envelope” if an envelope number has been entered and “Plate” if not. For other designations, see below under “Item Categorization”. For cheques, a cheque number must be entered, but non-cheque items can also be entered by specifying “cash” or “coin” instead of a cheque number. “Cash” and “coin” can be abbreviated as follows:

- Use “c”, “cash”<sup>1</sup>, “\$”, or “/” to indicate cash. (Note that “/” is convenient if entering data using the numerical keypad)
- Use “co”, “n”, or “\*” to indicate coin. (Note that “\*” is convenient if entering data using the numerical keypad)

## Cheque Mode

This mode behaves the same as the “Individual Items” mode except that only cheques are displayed and may be entered, no coin or cash.

## Keyboard Usage

When entering data in the middle panel, note the following:

- Use the **Tab** key (or **Enter** if using the numerical keyboard) to move to the next cell to the right. (**Shift Tab** will move to the cell to the left.)
- Use **Enter** to register an entry.
- An item can be deleted by selecting its row and hitting **Delete** (or **Del**). Also, simply changing the amount to 0 will effectively delete the entry.
- Use the **"** (double-quote) key to repeat the last envelope and cheque number. This is meant as an aid in dealing with following common situation described below.

### Use of the double-quote to repeat a cheque number

Normally, as a safety measure to prevent the same cheque from being entered more than once, a confirmation dialogue will pop up when an attempt is made to enter a cheque number previously entered for the same date. Sometimes, however, a single cheque will be made out with different amounts intended for different purposes, and these amounts must be entered as separate items. In this case, the safety measure will cause the pop-up confirmation dialogue to appear when the same envelope and cheque number is entered as the previous entry, which can be annoying.

To make this common situation easier to deal with, entering a “ditto” (double-quote) sign in the envelope column will cause the envelope and cheque number of the previous entry to be replicated, and the confirmation dialogue to be skipped.

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<sup>1</sup>A “c” alone or followed by anything other than “o” will be interpreted as meaning “cash”.

## Right Panel

The right-hand panel is normally used just to provide a summary of the total amounts per category rather than entering data, but it also provides for the following:

- Editing a description. (Click in the Description cell.)<sup>2</sup>
- Change the type of a category. (See below under “Changing the Category Type”.)
- Deleting or deactivating a displayed category. (See below under “Deleting Categories”.)

## Database

Data is stored in a persistent database as it is entered, so there is no need to explicitly save. The location and name of the database can be changed from the Options menu, if needed. There is also provision for backing up the database onto a separate location (typically, a USB disk) and for restoring the database from a separate device under the “Actions” menu.

## Dates

When RECEPSUM is started, the date of displayed receipts is initially set to the latest Sunday. This date can be changed by several means:

- Type in a different date in the text field displaying the date. The format for entering dates is pretty flexible – usually any format will be recognized as long as it’s unambiguous. The date typed will be echoed back in the common “Jan 1, 2016” display format, regardless of the format the date was entered.
- Click on one of the small arrow buttons to the right of the date display to go backward or forward to the previous or next date that contains data.
- Click on the small square button between the arrow buttons to the right of the date display. This will bring up a pop-up calendar by which a different date may be selected.

## Item Categorization

### Assigning an Item to a Category

An item can be assigned to a category by entering a suitable description in the Description column of the list of items in the middle panel. The entered description will automatically be added to the right-hand panel if it is not already there.

If there is already an entry for a description in the right-hand panel that has an index number shown, that description can be selected in the middle panel by several means:

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<sup>2</sup>Note that there is a difference between editing a description in the middle panel and editing it in the right panel. In the former case, the description for that entry only is changed, whereas in the latter case, the description is changed for all items that have that description.

- Enter its index number as shown in the right-hand panel.
- Right-click the Description field and then select from a pop-up menu.
- Select the Description cell, and then select the category description in the right-hand panel.

If entering a *new* description, please remember to assign a suitable category type. By default, a new description is assigned to be “Non-budgeted income”. If this is not appropriate, please change as described below.

## Changing the Category Type

The Type column in the right-hand panel indicates whether the item category is to be classified as B(udgeted), N(on-budgeted), F(und), or T(ransfers). A new description will be classified as N(on-budgeted) by default. To change this, double click the Type code to cycle through “N”, “F”, “B”, and “T”, or right-click to select a new classification directly.

## Deleting Categories

A category in the right-hand panel can be deleted by first selecting the row and then hitting **Delete**. If there is a non-zero amount shown for it, it won't actually be deleted but deactivated instead, indicated visually by having no index number shown in the row header.<sup>3</sup>

## Deactivated Categories

A category that has been deactivated will not show up automatically in either the left-hand panel (Receipts Summary) or the right-hand panel (Totals by Category) unless some non-zero amount has been assigned to it for the currently displayed date, nor will it appear in the menu that that pops up when one right-clicks on the Description field for an item in the middle panel.

A deactivated category may be reactivated by selecting the row and hitting the **Insert** or **Ins** key. (Obviously this requires a non-zero amount to be assigned to it for the currently displayed date for it to be visible.) A category will also be reactivated automatically if a new amount is assigned to it.

## Adding Notes

An arbitrary note can be added for the currently selected date by selecting “Add note” from the Actions menu and entering text into the editing window. This text will be included on the Summary Sheet as printed. (It does not appear in the summary data as presented in the left-hand panel.)

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<sup>3</sup>A category cannot actually be deleted until all amounts assigned to it are deleted, at which point the category itself will be deleted from the database automatically.

# Envelsum

## General

ENVELSUM is an adjunct to the RECEPSUM program and provides for the display of data by member, generation of quarterly reports, and assignment of envelope numbers. In particular, it provides:

- A summary of offerings vs. envelope number for a single year
- Maintenance of envelope assignments
- Printing of quarterly reports
- Printing of labels for member envelope boxes and quarterly reports

The ENVELSUM program contains three presentation displays, selectable by tabs:

1. Donations by Envelope. This shows individual donations for a year. This is a read-only display; it is not possible to change any data in this display – any changes must be done via RECEPSUM and get reflected here. This display may be handy to check the amounts as entered by RECEPSUM, however, vs. the amounts as recorded on the envelopes, since errors in attributions may be more obviously apparent.
2. Member labels. This shows members and their addresses that will be used to generate labels to be affixed to envelope boxes or quarterly report envelopes.
3. Envelope Assignments. This shows the envelope number assignments for a specified year.

## Member Labels

Member names and addresses for printing sheets of Avery labels (1x2<sup>5</sup>/<sub>8</sub>" , 30 labels per sheet) can be maintained by selecting the “Member Labels” tab.

Names are automatically added to the list of labels when a new member is added as a result of a new envelope assignment.<sup>4</sup> The address fields can then be entered in the appropriate table cells. Instead of re-typing an address when the same address has already been entered for another member, an existing address can be selected from a pop-up list by using the right mouse button on one of the address fields (second column).

Right-clicking in a cell in the third column will bring up a pop-up menu of towns with zip codes that are already part of other addresses.

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<sup>4</sup>Note that since “importing envelopes” from the current year into the new year results in a new envelope assignment for every member that currently has an envelope assigned, therefore any labels that have been deleted during the course of the current year will reappear. The rationale for this behaviour is that one may wish to delete labels in the course of the year for those members who have not given any detectable contributions for the current year (and therefore are not being given quarterly reports), but one still wishes to give them envelope boxes for the coming year (and therefore will need labels for the boxes). One should also note that it’s not necessary to refrain from deleting a label just in case that member may still make contributions in the future, since if that happens the label will automatically reappear.

To delete a label for a member, select the name and hit the **Delete** key. (Note that a deleted label will be added back automatically if a new amount is added for the member in RECEPSUM.)<sup>5</sup>

The actual labels are created using the Print menu.

## Envelope Assignments

To edit envelope assignments, select the “Envelope Assignments” tab. There are buttons for adding, deleting, and importing member envelope assignments.

To add a new envelope assignment for the year shown, hit the “Add” button. A new empty entry is added to the bottom of the list, into which the name of the new donor(s) can be added.

To delete an envelope assignment, select its row and hit the “Delete” button. Normally, the only time one would delete an assignment would be at the time of assigning envelopes for the next year using the “Import envelopes” button (see below), and one or more members that were assigned envelopes for the current year will not need them for the coming year.

“Importing” is only done when making assignments for a new year. Using the “Import envelopes” button, the list of members from the previous year will be imported to the new year and re-alphabetized. Assignments can then be added or deleted as appropriate for the new year.

New envelopes created using the “Add” button show up at the bottom of the list. Use the **Ctrl** **↑** and **Ctrl** **↓** key combinations to move envelopes to new positions as desired. (This would normally only be done at the start of a new year when making the initial envelope assignments.)

A list of the envelope assignments for a given year can be printed using the Print menu.

There is also a column indicating whether a label should be generated for each assigned envelope. Double-click the corresponding entry to toggle whether or not a label should be generated.

## Quarterly Reports

Quarterly reports can be generated from the Print menu, four per page (standard 8½x11). Use a paper cutter to cut them apart.

# Workflow Using Receptsum & Envelsum Together

The following is a guide to how to use RECEPSUM & ENVELSUM together based on how the author has employed them. Feel free to adjust as may be convenient.

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<sup>5</sup>Generation of labels can also be controlled via the Envelopes Assignments tab.

RECEPSUM is installed on a computer at Church. After service, counters use it to enter receipts for that Sunday and possibly any other services that have occurred since the last counting. A summary sheet (for the benefit of the Chief Financial Officer or Treasurer) and a “deposit slip” are then printed. The deposit slip (as printed by RECEPSUM) is included in the envelope with the official bank deposit slip and the cash and cheques for deposit.

The database can be periodically copied to a removable device (in practice, a USB thumb drive) using the “Back up database...” item from the “Actions” menu of RECEPSUM and taken home. Alternatively, the “Mail database...” item (also from the “Actions” menu) may be used to mail the database to the home e-mail address.

At home (where both RECEPSUM and ENVELSUM are installed), the entries should be checked for accuracy. (The author does this by checking the envelopes vs. the “Donations by Envelope” display in ENVELSUM, but it could also be done in RECEPSUM, after clicking the “Env” column in the “Individual Items” display to sort the envelope numbers.<sup>6</sup>)

It may happen that corrections will have to be made, and in any case it will be necessary to modify the database when new envelope assignments are made or label addresses are updated in ENVELSUM. In this event, it will be necessary to get the changes made at home (whether via RECEPSUM or ENVELSUM) back into the database at Church.

There are two ways of doing this:

1. Copy the modified database onto a USB stick using “Back up database...” from the “Actions” menu of either RECEPSUM or ENVELSUM, and then subsequently at Church use “Restore database...” from the “Actions” menu of RECEPSUM to replace the database at Church with the corrected version. A drawback to this method is that the transfer of the modified database to Church must be done *before* any further modifications are made to the Church database so as not to lose the changes made at Church. Because of this limitation, a second method of synchronization is provided:
2. When changes are made at home, make sure that “Track database changes” is checked under the “Options” menu of either RECEPSUM or ENVELSUM. This will result in generating a patch file that records changes made to the database at home. The patch file can then be saved to a USB stick, and when convenient, may be applied to the Church database using the “Apply changes to database...” from the “Actions” menu of RECEPSUM. Because it’s a *patch* file, it may be applied even after additional changes have been made to the database at Church.<sup>7</sup>

## Technical Details

This section gives technical details on the implementation of RECEPSUM/ENVELSUM. It may safely be ignored by those who simply wish to *use* these programs, as opposed to maintaining them.

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<sup>6</sup>Using ENVELSUM may have the advantage of making it more obvious if an amount has been attributed to the wrong envelope number, however.

<sup>7</sup>Under rare circumstances, changes made to the Church database may make applying the patch file impossible, resulting in a “constraint violation” error when the attempt to apply the patch is made. In this case, there is no other option but to re-apply the corrections to the database manually.

RECEPSUM and ENVELSUM are written in the RUBY language<sup>8</sup>, using the FOX graphical toolkit<sup>9</sup> to supply the graphical user interface, and use the SQLITE database<sup>10</sup> to store data. Since the FOX toolkit used for the Graphical User Interface (GUI) is cross-platform, these programs can be run on both UNIX-like systems (including GNU/LINUX) and WINDOWS. The author develops and uses them under FREEBSD (a UNIX-type operating system), and then builds them under Windows for use on a Windows computer at Church.

RUBY is an interpreted language, so to run them under Windows requires that the Ruby interpreter be available. One way of doing this is to install Ruby on the Windows machine, but an alternative is to compile the Ruby interpreter and the program scripts into single executable files using the OCRA<sup>11</sup> tool. The latter is the method that has been employed in order to provide a simple one-file deployment.

SQLITE is a small, embeddable database engine that is incorporated into the two programs. RECEPSUM and ENVELSUM share a single SQLITE database, the structure of which is as follows:

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<sup>8</sup><https://www.ruby-lang.org/>

<sup>9</sup><http://www.fox-toolkit.org/> and <http://www.fxruby.org/>

<sup>10</sup><https://www.sqlite.org/>

<sup>11</sup><https://rubygems.org/gems/ocra>

Table Name	Field	Type	Notes
Counters	date	text	in the format 'YYYY-MM-DD'
	name1	text	name of 1st counter
	name2	text	name of 2nd counter
Descriptions	id	integer	primary key
	description	text	empty string (i.e., '') represents "regular envelope"
	type	text	'B', 'N', 'F', or 'T'; see below for explanation
	state		null = active, 'x' = inactive
Envelopes	number	integer	
	year	integer	
	member	text	id field in Members table
Items	_id	integer	primary key
	date	text	in the format 'YYYY-MM-DD'
	amount	integer	in cents
	desc_id	integer	id field in Descriptions table
	envelope	integer	
	medium	text	'\$' = cash, '*' = coin, 'x' = cheque
	cheque_number	text	text, even though it will consist of digits only, so that a cheque numbered '0123' will be printed exactly that way, rather than '123'
Members	id	text	unique member ID, of the form 'Nnnn', where 'nnn' is a sequentially increasing number, starting from '001'
	name	text	must be unique
	address	text	
	print_label		'*' = print, null = don't print
Notes	date	text	in the format 'YYYY-MM-DD'
	contents	text	

The TYPE field of the DESCRIPTIONS table may have one of four values: 'B' indicating "Budgeted giving", 'N' indicating "Non-budgeted giving", 'F' indicating "Fund giving", and 'T' indicating "Transfers".

The STATE field of the DESCRIPTIONS table may have one of two values:

NULL indicates that the category is active, i.e., it will appear as a line item in the summary table and list of categories even if there is no amount entered for it on the currently displayed date.

'x' indicates that the category is inactive, i.e., it will not appear as a line item in the summary table or list of categories unless there is a non-zero amount entered for it on the current date.

## Source Code

Source code for the software is maintained under configuration control and may be downloaded, either as a compressed tarball (*receptum.tar.gz*, the usual format for POSIX-type systems), or as a zip file (*receptum.zip*, the usual format for Windows) from the RECEPSUM website, <https://chiselapp.com/user/varro/repository/Receptum>.