

# Mortgage Designer for Microsoft Windows

## Quick and Accurate Mortgage Calculations and Amortization Schedules

Mortgage Designer © 1991,1992 MaeDae Enterprises

Welcome to the **Mortgage Designer** on-line documentation and help file. **Mortgage Designer** is a Windows 3.x application and uses standard Windows techniques. This document covers areas that are specific to **Mortgage Designer**. If you need information about using Windows, please refer to your Microsoft Windows documentation.

**Mortgage Designer** helps you make informed decisions on what probably will be the largest investment of your life--your home. **Mortgage Designer** is the quickest way to calculate all aspects of home mortgage loans. Don't depend on the real estate agent or mortgage company to choose the best loan for you. Remember, they don't really work for you or have your best interests in mind!

### Procedures

To make best use of **Mortgage Designer**, your first step is to select the *File* menu, *Default Mortgage Info* command. Enter the principal, interest rate, term of the loan (in years), payment options (how often payments are made), and start date. Then press the *Payment* button to display the normal payment required for the loan. If you want to save these loan parameters for future use, select the *Database..., Set as Default* command. Each time you start **Mortgage Designer**, these default loan parameters are read from the database file (LoanData.INI) if it exists.

Once you've entered the basic mortgage parameters, you can calculate the loan's remaining balance (if you've been paying on it for a while) by selecting the *Calculate* menu, *Remaining Balance* command. To find the cost of the mortgage over its full term, select the *Calculate* menu, *Cost of Loan* command. You can have **Mortgage Designer** compute any one of the four parameters of a loan by selecting the *Calculate* menu, *Missing Variable* command.

**Mortgage Designer** will display or output amortization schedules by selecting the *Reports* menu, *Amortization Schedule* command. In addition to viewing them on the screen, you can optionally send amortization schedules to a file or printer. To perform "what if" analyses of different mortgages, use the *Reports* menu, *Mortgage Comparisons* command.

### Help

Help for **Mortgage Designer** is accessed two ways:

- Pressing F1 (when no menu is highlighted)
- Using the *Help* pulldown menu

General help areas are listed in the [index](#).

**Notes:** **Mortgage Designer** will calculate *any* type of loan (not just mortgages) as long as the term of the loan is in years. Use it to analyze your car loan, your business loan, or any situation where you are borrowing or lending money. In any case, **Mortgage Designer** can *save you money* and make you an informed consumer.

**Mortgage Designer** is compatible with Microsoft Windows versions 3.0 and has been tested with the beta 3.1 version (expected to be released to the public in early '92).

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# Mortgage Information Help

In the Mortgage Information dialog box you must enter the various parameters of the loan.

<u>Principal</u>	Enter the full amount of the loan principal, up to 9 digits. Do not enter a dollar sign ("\$\$") or commas. Principals from \$100.00 to \$500,000,000 are supported at all interest rates and loan lengths.
<u>Interest Rate</u>	Enter the annual interest rate as a percentage. For example, if the annual interest on the loan is 9 3/4%, type in 9.75. Do not enter a percent sign ("%"). Interest rates from 0.10% to 25.00% are allowed.
<u>Mortgage Length</u>	Enter the term of the loan in years. The term must be a number from 1 to 30 years. Months were not used because they can't be divided evenly using the two week repayment option! Also, mortgages are almost always at least a minimum of five years.
<u>Payment Options</u>	Select the frequency of payments, either every two weeks, twice a month, monthly, quarterly, or once a year. This option and the loan start date will be used to calculate the dates used for the amortization table.
<u>Loan Starts</u>	Enter the date the loan starts. Date format is MM/DD/YYYY. Example: for 1 Dec 1991 enter 12/01/1991. The loan start date must be between 1 Jan 1900 and 31 Dec 2100.  <b>Note:</b> The first payment date for the amortization table for twice monthly payments will be adjusted to the 1st and 15th of the following month. Monthly payments will fall on the same day each month (or last day of the month whichever is less) starting one month after the loan start date.
<u>Comments</u>	The comments area allows you to add a string of up to 20 characters by which you can customize the loan. All leading and trailing spaces will be removed in order to allow it to align correctly for amortization reports.

When all the parameters of the loan have been entered, press the *Payment* button or the *Enter* key to calculate and display the payment amount. To close the Mortgage Information dialog box, press the *Done* button.

You will also notice that this dialog box provides access to a database of loan information. When you select the database option, another dialog box will be displayed. Using the database area you can specify default loan values for a virtually unlimited number of loans complete with comments on their purpose.

# Defaults Usage Help

The defaults area of **Mortgage Designer** allows you to save selected defaults to a file called MD.INI that will be automatically loaded each time you start up **Mortgage Designer**.

This area is reserved for global types of information that affects all mortgages that you may be working with. Defaults specific to a particular loan should be kept in the loan database. See the loan defaults area under the file pulldown for more information.

You **MUST** use the SAVE option before the defaults will be retained. Each time you enter this area, the current program defaults will be used to update the dialog box. Example: The 1st tax bracket box contains 15%. You change it to 33% and then select done. The 33 will NOT be saved or retained. The next time you access this area it will still contain 15% for the 1st tax bracket.

## Notes:

1. The government is constantly changing tax laws. Because of this, we decided to make the tax brackets user installable to allow the user to keep pace with tax bracket changes.
2. Watch this area in the future. As we get more user feedback, we will expand this area to include additional items. If you have suggestions please write us and let us know how to improve **Mortgage Designer**.

# Database Usage Help

The database area provides access to data on multiple loans with the ability to specify the initial defaults for startup. The main functional areas are:

Set as Default - Highlight a record in the "Loan Database Records" list box and then use this option to specify the record as the initial defaults for **Mortgage Designer**.

Add Record - Add a new record to the database which consists of the current defaults. The record will be added to the end of the current database.

Delete Record - Highlight a record in the "Loan Database Records" list box and then use this option to delete or remove the highlighted record.

Use Now! - Highlight a record in the "Loan Database Records" list box and then use this option to load the highlighted information and use it as the current defaults.

## Notes:

1. The default record for startup will have an \* as the first character in the list box. **Mortgage Designer** will automatically use the record with an \* if one is specified. Specifying a default record is optional.
2. The delete record option is a two step process that takes place transparent to you UNLESS an error is encountered. The first step is for the record to be marked as deleted. The second step is for the database file (LoanData.INI) to be packed and the file size reduced.
3. The records in the database are displayed in the listbox in a fixed format. The format is:  
\* if startup default, record number, comment, principal, interest rate, term, payments per year (ex. two week is 26), loan start date (MM/DD/YYYY)
4. The maximum width of the comment field is limited to 20 characters throughout **Mortgage Designer** because of the requirement to display it on a single line with the rest of the database record. This should be more than enough to uniquely identify the records. For amortization schedule file/print operations, we extend it to 60 characters.

## Calculate Remaining Balance Help

When you have entered the number of payments made, press the *Calculate* button or the *Enter* key to calculate and display the payment amount, principal paid, interest paid and loan balance. To close the Analysis dialog box, press the *OK* button or the *Enter* key. You may change the number of payments made and press *Calculate* or *Enter* as often as you wish to see the effect on your loan balance. To close the Calculate Remaining Balance dialog box, press the *Done* button.

# Calculate Equity vs Balance Help

When you have entered the number of payments made and the current estimated value, press the *Calculate* button or the *Enter* key. A dialog box will appear with a total picture of where you stand on the mortgage. To close the Analysis dialog box, press the *OK* button or the *Enter* key. You may change the number of payments made/current value and press *Calculate* or *Enter* as often as you wish to see the effect on your loan balance. To close the Calculate Equity vs Balance dialog box, press the *Done* button.

## Notes:

1. The equity is the current value - principal + amount of loan paid off. When you calculate the equity, the dialog box will have one of the fields showing estimated equity. This number can be negative if you owe more on the property than it is worth. When the number is negative, a minus sign will be shown in front of the equity.
2. The percent equity is the equity\*100/principal. Like the equity, it can also be negative if you owe more than the property is worth.

# Calculate PITI Help

The calculate Principal, Interest, Taxes, and Insurance (PITI) function attempts to give you a complete picture of what your mortgage payment will be. When you have entered the tax and insurance values, press the *Calculate* button or the *Enter* key. A dialog box will appear with the calculated PITI. To close the Calculate PITI dialog box, press the *OK* button or the *Enter* key. You may change the tax/insurance values and press *Calculate* or *Enter* several times to see the effect on your mortgage Payment. To close the Calculate PITI dialog box, press the *Done* button.

## Notes:

1. Many things alter your total mortgage payment. PITI takes into account the majority of the items, but is not all inclusive.
2. Since the tax and insurance information could apply to a wide variety of loans, it is stored as part of the program defaults. See the program defaults area under the File area for a complete listing of program defaults.
3. The calculated tax and insurance are based on the taxable property value when you select the percentage option.

# Calculate Missing Variable Help

When the Mortgage - Find Missing Information dialog box is displayed, it will contain all the information available from the **Mortgage Designer** default database loan file (LoanData.INI) if it exists. To calculate a new value for any of the variables, perform the following steps:

1. Modify any three of the four variables (Principal, Interest Rate, Term, or Payment). You also have the option of specifying whether the payments are every two weeks, twice a month, monthly, quarterly, or once a year by selecting the desired item.
2. Select the item you want **Mortgage Designer** to calculate from the Missing Item group.
3. Press the *Calculate* button or the *Enter* key to calculate and display the new values for the modified parameters. The pie chart off to the right will then be updated to reflect the new principal and interest percentages for the life of the loan.

**What if** you want to compare multiple mortgage choices? Use the Log to File option to save the different sets of data you generate. The data will be saved in a file (What-Ifs.Log). You can then view the file or delete it and start over with a new group of options for comparison. The size of the log file is limited only by available free disk space. Since viewing a large number of items in a list box is difficult, we recommend deleting the old log file and starting a new one whenever you start working with a new group of options.

Also located on this dialog box are two buttons that allow you to work with the global program defaults. The Pgm Default group allows you to either overwrite the displayed values with the global program defaults (Use Here) or change the global mortgage defaults to those shown (Chng Pgm).

To close the Mortgage - Find Missing Information dialog box, press the *Done* button.

## Notes:

1. It is not necessary to clear the value from the box containing the variable you want to calculate. **Mortgage Designer** will ignore the contents of that box when it calculates the item selected in the Missing Item group.
2. **Want to save money?** The pie chart shown on the right side of the dialog box is updated after each calculation to show the percentage of the total loan payments that goes toward principal (black) and interest (red). As a borrower, normally your goal will be to minimize the amount of interest you pay over the life of a loan. This pie chart can graphically show you how to save money. As you are running through the various "What if?" options, try to minimize the red portion of the pie chart. If you are the loaner, you want to maximize the red portion of the pie chart.

## Calculate Mortgage Refinance Help

**Mortgage Designer** will compare two mortgages of different repayment options allowing you to get a feel for the advantages of refinancing. The old mortgage (existing mortgage) and the new mortgage terms are entered into the two mortgage areas shown on the dialog box. The time intervals of the two mortgages must overlap and the new mortgage balance be less than the old balance at some point for a break even to occur.

The new mortgage principal should include all the costs of refinancing plus the old mortgage amount carried over. Typical refinancing costs run 3-5% of the amount to refinance.

**Mortgage Designer** calculates the refinance break even point using the assumption that all costs of the refinancing are rolled over into the new principal **and** you have to borrow the new money at the same rate as on the new mortgage. Most simple refinance calculations assume you get a 0% percent loan to cover the new refinance costs giving you a somewhat inaccurate picture.

To close the Mortgage Refinance - Break Even Analysis dialog box, press the *Done* button.

# Mortgage Break Even Analysis Help

The dialog box displayed on the screen provides the estimated break even point and two list boxes showing payments and balances. The left list box shows your current mortgage. The right list box shows the new or projected mortgage.

Each of the list boxes contains a complete list for all mortgage payments. The format for the list boxes is payment number, date for the payment, and the balance.

**Mortgage Designer** uses a simplified method for calculating the break even point for mortgage refinancing. Payment reductions are not reflected into the break even analysis. Break even analysis looks ONLY at principal reduction. It assumes you are not re-investing the payment into a savings account, CD, or other interest producing vehicle. This should cover the majority of cases.

**Mortgage Designer** goes through extensive calculations to come up with the displayed data. Please be forgive us if it takes a couple of seconds to calculate.

## Notes:

1. The break even point is calculated by looking at each payment of the new mortgage. The first new mortgage payment that generates a balance less than or equal to a balance on the old mortgage of the same or earlier date is defined as the break even point.
2. The larger term repayment periods introduce date inaccuracies. For example, when the yearly repayment option is selected on either loan, the entire year is checked for a match.
3. The date calculations may add some inaccuracies to the break even point. All mortgage repayments options of one month or twice a month are assumed to have their first payment due one month after the mortgage is taken out. This causes the principal to be reduced more on the first payment on monthly mortgage payments over 2x month mortgage payments. This difference will cause the break even point to appear on the first payment, all other factors being the same.

# Amortization Schedule Help

An amortization schedule shows at a glance exactly how much of your mortgage payment goes to principal and interest, and the remaining balance on the loan for each payment. It also summarizes the loan amount, term, interest rate and normal payment. This option in **Mortgage Designer** complements the *Calculate* menu, *Remaining Balance* command, which calculates and displays only the principal, interest and remaining balance for any single payment period.

When the amortization schedule is displayed, the main menu of **Mortgage Designer** will change. The following new commands will be available:

<u>File</u>	Contains the output and done options.
<u>Print</u>	Displays an <u>Output Destination</u> dialog box that lets you select where to send the output (printer or file), and which payments to include. All information was common between printer and file so a single function and dialog box was used.
<u>Done!</u>	Returns to the main menu when you are done viewing the amortization schedule. Escape will also work.
<u>Next Page!</u>	Displays the next page of the amortization schedule. When you reach the last page, this menu option will be grayed. You may also use PgDn.
<u>Previous Page!</u>	Displays the previous page of the amortization schedule. When the schedule is first displayed, this menu option will be grayed because you are on the first page. You may also use PgUp.
<u>F1=Help!</u>	Displays this page of help.

## Notes:

1. The final payment will be different than the normal payment to compensate for the normal payment being rounded to the nearest cent. To calculate the final payment, add or subtract (as appropriate) the remaining balance at the end of the schedule from the normal payment.
2. Payment dates are determined differently based on the type of loan you select.
  - a. Every two weeks - Each payment will be 14 days from the last one. The first payment will be due 14 days after the loan start date.
  - b. Twice a month - The dates are shown as the 1st and 15th of the month. The first payment month is the month following the loan start date.
  - c. Monthly - The payments will fall on the same day each month unless there aren't that many days in the month. In that case, the payment will be due the last day of the month. February is considered to always have 28 days for purposes of payment due dates. This avoids the problem of leap years where sometimes the payment would be due February 28th and sometimes February 29th.
  - d. Quarterly - Due every three months and will fall on the same day each month.
  - e. Yearly - Payment will occur each year on the same day.
3. A keyboard accelerator is loaded for this area to allow the enhanced keyboard interface. For example, this allows you to press PgDn for the next page instead of being forced to go through the menu.



# Output Destination Help

The Output Destination dialog box allows you to specify where to send output and which payments to include in the output.

## Output To?

Selecting Printer will send the amortization schedule to your current printer. If you have more than one printer installed in Windows, or if you wish to customize the format of the output, you may use the Printers option in the Windows Control Panel application to select or setup your printer.

Selecting File will send an amortization schedule to a file of your choice.

## Which Payments?

This selection defaults to include all payments. If you wish to output only a subset of the amortization schedule, select First, then Last, entering the range of payments you want included.

## Heading:

The heading is used as the first line for printing and file output. Since this area is very dynamic, the initial default each time you enter the dialog box will be the loan default comments. Using this area will allow you to customize the output. Since a lot of flexibility is needed on printing and file output, we have extended the maximum heading width to 70 characters for ONLY this area of **Mortgage Designer**.

After selecting the destination and range of payments to output, press the *OK* button or the *Enter* key to send the amortization schedule to the printer or file. If you selected Output to File, a dialog box will display to allow entering a filename. After entering a filename (or accepting the default), press the *OK* button or the *Enter* key to begin sending the amortization schedule to the selected file. To close the Output to File dialog box without saving the schedule to a file, press the *Cancel* button. This action will also close the Output Destination dialog box and return you to the main window. To close the Output Destination dialog box without taking any action, press the *Cancel* button.

# Mortgage Designer Commands

To get help with a particular command, choose the appropriate menu.

## File Menu Commands

- Default Mortgage Info...
- Main Program Defaults...
- Exit

## Calculate Menu Commands

- Remaining Balance...
- Equity vs Balance...
- Cost of Loan
- PITI...
- Missing Variable...
- Mortgage Refinance...

## Reports Menu Commands

- Amortization Schedule...
- Mortgage Comparisons

## Tax Time Menu Command

- Yearly P and I...
- Yearly Tax Savings...

## F1 = Help Menu Commands

- Index
- Commands
- Print Invoice
- About Mortgage Designer

# File Menu Help

The *File* menu allows you to enter and save information about your mortgage. All other menu commands in **Mortgage Designer** operate on the information you enter here about the parameters of your loan.

Edit Mortgage Info... Displays the Mortgage Information dialog box. This command provides access to a complete database of loans. It allows you to save information entered in the Mortgage Information dialog box so that it may be recalled when **Mortgage Designer** starts. The mortgage defaults which are shown under *Edit Mortgage Info* will be saved as a record in the file called LoanData.INI in the default directory.

Exit Exits **Mortgage Designer**.

When you start **Mortgage Designer**, it automatically recalls the information entered in the Mortgage Information dialog box, if it was previously saved using the database set default command. To exit the *File* menu without taking any action, click or drag the mouse anywhere outside the menu, or press the *Esc* (escape) key.

# Calculate Menu Help

The *Calculate* menu allows you to compute various aspects of your mortgage.

Remaining Balance... Displays the Calculate Remaining Balance dialog box. Given how many payments have been made, this command provides the value of the normal payment, the investment in principal and interest, and the balance due on the mortgage.

Equity vs Balance... Displays the Calculate Equity vs Balance dialog box. Given how many payments have been made and the estimated value of the property, this command provides an estimated overall value for the property. It takes into account the paid down principal and estimated market value for the property.

Cost of Loan Displays the Cost of Loan dialog box containing the total of all payments, the original loan principal, and the difference between the two.

PITI... Displays the PITI dialog box. It tries to estimate your total mortgage payment factoring in both taxes and insurance in addition to the normal principal and interest payments.

Missing Variable... Displays the Mortgage - Find Missing Information dialog box. Given any three of the four parameters needed to calculate a loan, this command calculates the missing parameter.

Mortgage Refinance... Displays the Mortgage Refinance - Break Even Analysis dialog box. You can compare an existing mortgage against a new mortgage. Typically the new mortgage will be of higher principal but lower interest rate. The crossover point for the principals can be calculated (the break even point).

To exit the *Calculate* menu without taking any action, click or drag the mouse anywhere outside the menu, or press the *Esc* (escape) key.

# Reports Menu Help

The *Reports* menu allows displaying an amortization schedule of your mortgage or comparing mortgage options by varying different parameters of the loan.

Amortization Schedule Displays a complete amortization schedule for your mortgage. The **Mortgage Designer** main menu is replaced by a new menu to allow navigating to all pages of the schedule and to output the schedule to a destination of your choice.

Mortgage Comparisons Displays a table comparing the principal and interest you entered in the Mortgage Information dialog box with four variations on both.

Principal is listed at the top of the each of the five columns on the right. Your original principal is in the center column. Values for plus and minus 5% and 10% are shown in the two columns on either side of the original principal.

Interest is listed in the left column. Your original interest is in the center row. Values for plus and minus 0.5% and 1% are shown in the two rows above and below the original interest rate.

To exit the *Reports* menu without taking any action, click or drag the mouse anywhere outside the menu, or press the *Esc* (escape) key.

# F1=Help Menu Help

The *F1 = Help* menu brings up various types of help which make up the on-line documentation for **Mortgage Designer**.

<u>Index</u>	Displays the help index.
<u>Commands</u>	Displays the complete list of menu commands.
<u>Print Invoice</u>	Prints an invoice for registering <b>Mortgage Designer</b> . If you are evaluating the shareware version of the program, and you intend to make continued use of it, you are obligated to register the program. Improvements to <b>Mortgage Designer</b> can only be made if you support the shareware concept. Shareware is <b>not</b> freeware or public domain software. There are privileges and incentives to becoming a registered user. Please read the README.DOC file for details.
<u>About Mortgage Designer</u>	Displays a dialog box containing the current program version, copyright notice and obligatory head-swelling credits for the authors.

To exit the *F1 = Help* menu without taking any action, click or drag the mouse anywhere outside the menu, or press the *Esc* (escape) key.

## Tax Time Menu Help

**Mortgage Designer** will calculate the amount of principal and interest paid on a yearly basis and an estimated tax savings due to having the mortgage. This takes into account the different repayment options. The calculations are quite extensive and may take a few seconds. After the items are calculated for each year of the loan, they will be displayed in a list box.

The list box which shows the information can be controlled by both the keyboard and mouse. Simply scroll through the listing until you find the year(s) you are looking for.

## Estimated Yearly P & I

**Mortgage Designer** will calculate the amount of principal and interest paid on a yearly basis. This takes into account the different repayment options. The calculations are quite extensive and may take a few seconds. After the items are calculated for each year of the loan, they will be displayed in a list box.

The list box which shows the information can be controlled by both the keyboard and mouse. Simply scroll through the listing until you find the year(s) you are looking for.

The list box displays for each year the total of the payments that went toward principal and interest.

# Estimated Yearly Tax Savings

**Mortgage Designer** will calculate the estimated amount of tax savings on a yearly basis. This takes into account the different repayment options. The calculations are quite extensive and may take a few seconds. After the items are calculated for each year of the loan, they will be displayed in a list box.

The list box which shows the information can be controlled by both the keyboard and mouse. Simply scroll through the listing until you find the year(s) you are looking for.

The list box displays figures for each year showing the amount of money saved depending on your tax situation. The box lists figures for 15%, 28%, and 33%. These are the default brackets and can be changed by the user. As the brackets change between tax years, you can easily specify new defaults to keep pace with new tax laws.

Guessing at your potential tax savings is very difficult. **Mortgage Designer** takes the approach of using only the 15%, 28%, and 33% of the interest for the years listed in the list box. Many times the deductible mortgage interest may lower you from one tax bracket into another (for example, overall taxes drop from 33% to 28%). Without extensive details from you, this factor could not be taken into account.

The Adj Pymt function on this dialog box will show you the estimated adjusted payments for the mortgage using the potential tax savings. This is calculated by the following formula:

Yearly Adjusted Payment = NP - YPTS/NPMDY where

PYMT=normal payment

YPTS=yearly potential tax savings

NPMDY=number of payments made during year.

## Disclaimer:

Every person's tax situation is different. The figures listed here make a lot of assumptions about your tax situation. Use the estimates to give you a feel for what difference a home mortgage might make for an "average" person. We strongly recommend you consult an accountant or qualified tax consultant for specifics concerning your possible tax savings!

# What is Shareware?

Shareware is copyrighted commercial software that you are allowed to try out before you make the purchase decision. It is a marketing concept, not a type of software.

Shareware marketing is typically used when the author doesn't have a huge advertising budget. High end software like Lotus 1-2-3, dBase IV, etc. may have advertising budgets of over a million dollars. A full page advertisement in a magazine like PC Magazine can cost over \$10,000 an issue. Smaller software companies, like MaeDae Enterprises, usually don't have that type of advertising budget so shareware marketing is used.

Many people question whether software distributed via shareware is of as high a quality as the software they see advertised in commercial magazines. Good commercial advertising can sell almost any software regardless of its quality. Shareware must be of equal or higher quality than commercially available software for users to register. You, the user, have the opportunity to evaluate the shareware and find the real gems. With commercial software, you purchase the software and then hope it works as advertised.

**Note:** Don't feel guilty about passing around copies of shareware. You are helping the author distribute his software. Even though shareware is commercial software, you are encouraged to pass around evaluation copies!

# Registration Benefits

## Registration benefits include:

1. The latest version of **Mortgage Designer** with no additional information screens.
2. Unlimited support - written or by phone.
3. Low cost upgrades.
4. Notification of enhancements.
5. A Windows based installation program is included with the registered version of **Mortgage Designer**. It completely automates the installation process including the creation of a program group!
6. **Mortgage Designer** now comes with a hard copy manual. Previously this was a \$10 option.

**Note:** Shareware relies on you, the user, for its existence. Your registration will help ensure **Mortgage Designer** continues to improve. When you register, please take the time to fill out the suggestion form. We want **Mortgage Designer** to evolve so it can better meet your needs.