

Financial Applications

This chapter looks at some of the ways banks make use of spreadsheets. It will include an electronic cheque book, a home loan simulator and a calculation of compound interest.

An Electronic Cheque Book

A spreadsheet can be used to allow a person to keep an accurate record of their financial dealings.

A Opening the Prepared Template

- 1 Load Microsoft Excel, or close the current file.
- 2 Click on the OPEN icon in the QUICK ACCESS TOOLBAR or in the OFFICE BUTTON. Access the CHAPTER 17 folder of the EXCEL 2007 SUPPORT FILES and load the file:

Cheque Book

Selecting YES to the READ-ONLY dialogue box.

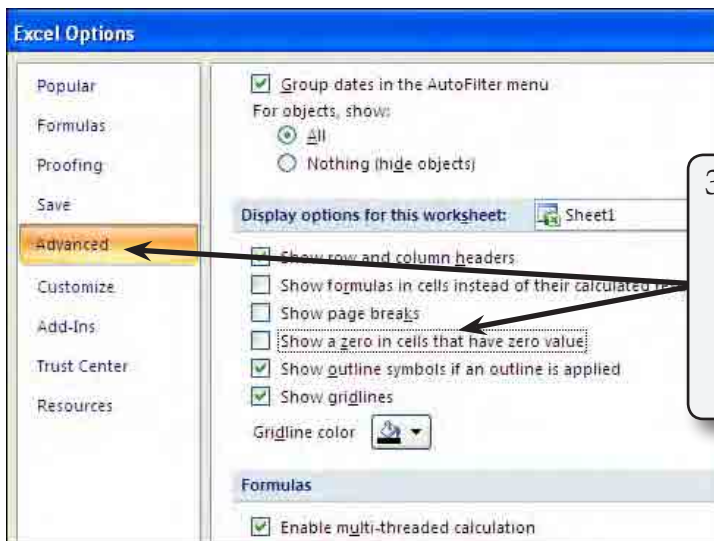
B Completing the Formulas

We need a formula that looks to see whether a deposit or withdrawal has been entered. If either has, then the deposit must be added to the balance, or the withdrawal subtracted from the balance.

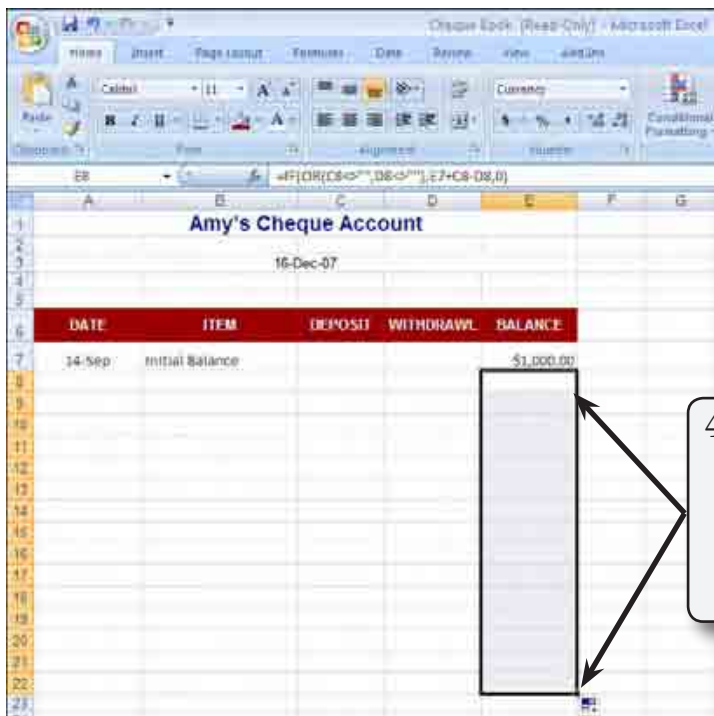
DATE	ITEM	DEPOSIT	WITHDRAWAL	BALANCE
14-Sep	Initial Balance			\$1,000.00
16-Dec-07				\$0.00

NOTE: This formula says: "If either a deposit is entered in this row, OR a withdrawal is entered in this row, then display the previous balance (one row up) plus the deposit in this row minus the withdrawal in this row, otherwise display zero."

- 2 Zero values need to be turned off. Click on the OFFICE BUTTON and select EXCEL OPTIONS.



3 In the ADVANCED category scroll to the DISPLAY OPTIONS FOR THIS WORKSHEET section and turn off SHOW A ZERO IN CELLS THAT HAVE ZERO VALUE and select OK.



4 Autofill the formula down from cell E8 to cell E22. There will be nothing displayed at this stage as there are no deposits or withdrawals.

C Using the Cheque Book

Now you are ready to use the cheque account.

- 1 Enter the following labels and values to your worksheet (there is 1 deposit and 4 withdrawals):

Date	Item	Deposit	Withdrawal
15 Sep	Supermarket		\$39.50
21 Sep	Electricity Bill		\$86.80
21 Sep	Rent		\$475.00
24 Sep	Pay Day	\$870.00	
25 Sep	New dress from Katie's		\$125.00

DATE	ITEM	DEPOSIT	WITHDRAWAL	BALANCE
14-Sep	Initial Balance			\$1,000.00
15-Sep	Supermarket		\$39.50	\$960.50
21-Sep	Electricity Bill		\$86.90	\$873.60
21-Sep	Rent		\$475.00	\$398.60
24-Sep	Pay Day	\$870.00		\$1,268.60
25-Sep	New dress from Katie's		\$125.00	\$1,143.60

2 The Balance should adjust after each entry.

- 3 Try adding some more withdrawals and deposits of your own.
- 4 Save your workbook and print a copy if you wish.

The Home Loan Simulator

Many banks have home loan tables set up so that prospective borrowers can be shown what their repayments will be. We can use Microsoft Excel to set up a loan simulator of our own. Such tables are called LOAN AMORTIZATION tables. For simplicity we will just create a table for monthly repayments.

A Opening the Prepared Template

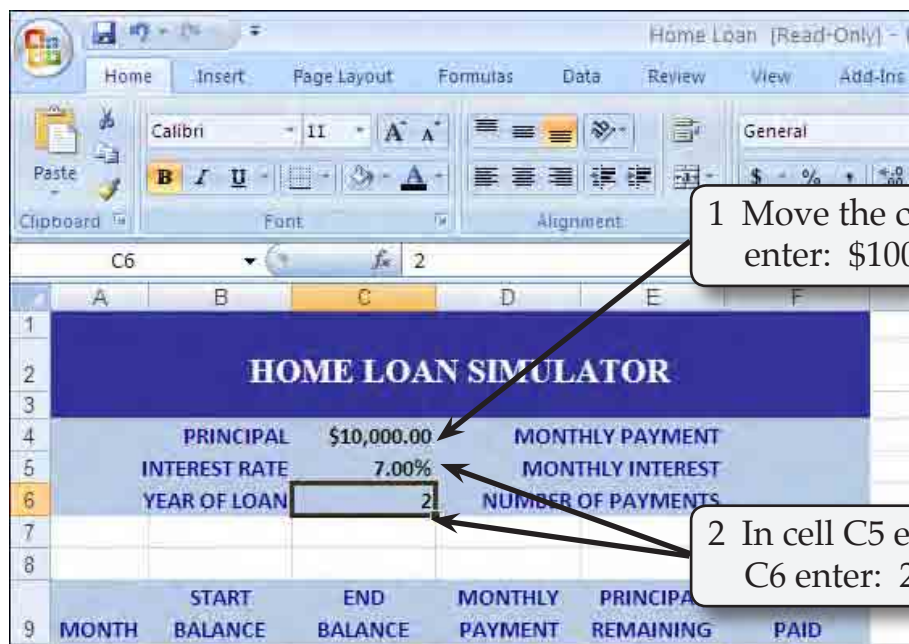
- 1 Close the current file and click on the OPEN icon in the QUICK ACCESS TOOLBAR or in the OFFICE BUTTON.
- 2 Access the CHAPTER 17 folder of the EXCEL 2007 SUPPORT FILES and load the file:

Home Loan

Selecting YES to the READ-ONLY dialogue box.

B Entering the Initial Values

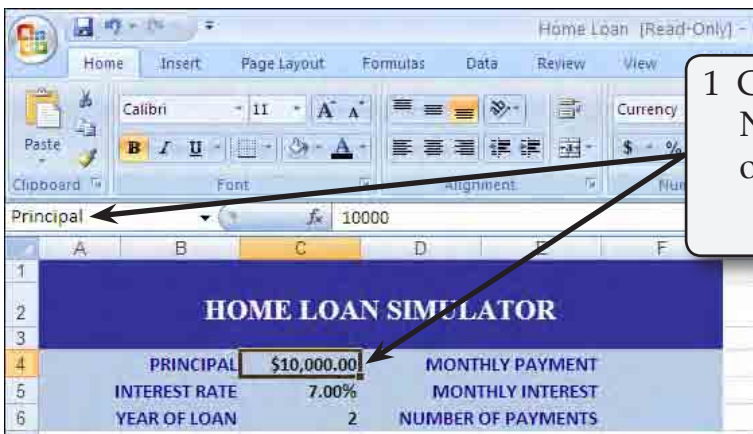
The values in the PRINCIPAL, INTEREST RATE and YEARS OF LOAN section control the spreadsheet. They are the only values that need to be entered and the table will be set up so that when different values are entered the table automatically adjusts.



NOTE: For simplicity we will use a 2-year loan. Normally a home loan would be for a much higher Principal that this and be paid over many more years.

C Naming the Cells

To make the calculations easier to understand it is helpful to name cells containing the three values you just entered.



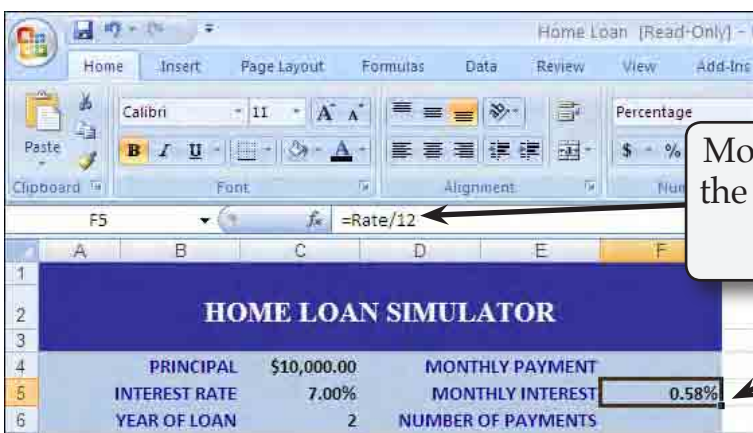
1 Click in cell C4, then click in the NAME BOX and define the name of the cell by entering:

Principal

- 2 Repeat step 1 to name cell C5 as RATE and cell C6 as YEARS.

D Calculating the Monthly Interest

A calculation needs to be made to ensure that the repayments are such that the loan is paid off in the set number of years. Before the calculation is made we will calculate the MONTHLY INTEREST and the NUMBER OF REPAYMENTS.



Move the cursor to cell F5 and enter the formula:

= Rate / 12

NOTE: This will divide the yearly interest rate by 12 to obtain the monthly interest rate.