

**COMMUNITY COLLEGE OF SOUTHERN NEVADA**  
**Department Of Computer Information Technology**  
**IS-101**

(Mr. Harden's Sections)

**ASSIGNMENT #12**

**OBJECTIVES & PURPOSE:**

The purpose of this assignment is to become familiar with electronic spreadsheet features and techniques including:

- Designing and laying out a spreadsheet, formatting cells, printing and saving spreadsheets;
- Using Absolute and Relative cell referencing;
- Using functions including: **SUM, PMT, INT, and IF**;
- Programming "smarts" into a spreadsheet by using the "IF" function;
- Using "nested IF" functions (an IF inside of an IF)
- Using Headers and Footers;
- Using "Sheet" Options, including Grids and Row/Column Headers;
- Using Borders, Shading, and Colors;
- Creating a useful ("real-world") spreadsheet that you may use forever to analyze consumer loans and (with slight modifications) home mortgages.

**SPECIFICATIONS & INSTRUCTIONS:**

PLEASE NOTE:

- To receive full credit, all specifications must be meet.
- Read the **NOTES** at the bottom of the assignment before continuing;
- Learning how to do this assignment:
  - The following descriptions are the specifications for the assignment;
  - *They are not a tutorial on how to do the assignment;*
  - Discussion and demonstration on how to do the assignment will be given in class on the demonstration day for this assignment (please attend class that day for the demonstration);
- Use Microsoft's **Excel** spreadsheet. If any other spreadsheet other than **Excel** is used, it may not behave in the same manner as demonstrated with **Excel**.

Using **Excel** (other spreadsheets may not work for this assignment), prepare a spreadsheet that calculates a loan amortization schedule as per the specifications given below.

Prepare a spreadsheet for a "smart" generalized loan amortization schedule for loans upto 48 payments, but shows only the payments applied to the loan, even when there are less than 48 payments. Though specific requirements are given for this assignment, it is designed so that it can be used for a wide variety of loans. Examples of the spreadsheet and the formulas are included. To assure that the spreadsheet works properly, follow the specifications exactly as written.

The specifications required for this assignment are:

1. PAGE SETUP:

- Page:
  - Orientation: Portrait
  - Paper size: US Letter (8 1/2" x 11")
- Margins:
  - Left: 0.75"
  - Right: 0.75"
  - Top: 0.50"
  - Bottom: 0.50"
  - Header: 0.25"

- Footer: 0.25"
- Sheet:
  - Grids: ON
  - Row/Column Labels: ON
- Headers/Footers (click "View-Header/Footer"):
  - Use the "Header" to put the name of the spreadsheet (**Loan Amortization Schedule**) in the center of the header line.
  - Use Left Footer to write your Name and ID#.
  - Use Middle Footer to write the Assignment#.
  - Use Right Footer to write your Class Section#.

2. ROW 1:

- Set the titles of cells A1 thru F1 as shown in the example;
- Right Align all of these labels.

3. ROW 2:

Although this spreadsheet is a generalized amortization schedule for any standard loan upto 48 payments, use the following data for your printout: An auto loan for:

- Loan Amount of \$12,000.00;
- 35 payments of \$398.57 and a final 36th payment for \$398.64;  
NOTE: When programmed with the formulas given below, the spreadsheet will calculate these payments correctly.
- Annual Percent Rate of interest at 12%.

Specific details for certain cells include:

- A2: **36** (number of payments). Format as integer with no decimal.
- B2: enter a **loan date**. Format as a Date Format of your choice.
- C2: **0** (payment amount). Format with commas and 2 places to right of decimal.
- D2: **12** (APR expressed as %). Format with commas and 2 places to right of decimal. Do not enter a "%" sign with the value 12;
- E2: Use the following formula that calculates the monthly loan payment if C2=0, and uses functions to make the calculation, and round to the nearest penny:

**=IF(C2=0,INT(-PMT(D2/12/100,A2,F2)\*100 + 0.5)/100,C2)**

Format with commas and 2 places to right of decimal.

4. ROW 4:

Place a boarder around Row 4 (A4 thru F4).

Right align the following column headings in the following cells:

- A4: **PMT#**
- B4: **DATE**
- C4: **PMT-AMT**
- D4: **INTEREST**
- E4: **PRINCIPLE**
- F4: **BALANCE**

5. COLUMN A: (A6 thru A53) **PMT#**

- Format the Payment Number as an integer (no decimal).
- Use the formula shown in the sample that displays the payment number only if a payment is going to show on this row. The formula for cell A6 is:  
**=IF(A5<\$A\$2,A5+1,"")**

6. COLUMN B: (B6 thru B53) **DATE**

- Format the Date with a date format of your choosing (*Format-Cells-Date-Type*). See the **NOTES** below on formatting dates.
- Use the formula shown in the sample that displays the payment date only if a payment is going to show on this row. The formula for cell B6 is:  
**=IF(A6<=\$A\$2,\$B\$2 + A6\*31,"")**

7. COLUMN C: (C6 thru C53) **PMT-AMT**

- Format the Payment Amount with commas and 2 places to the right of the decimal.
- Use the formula shown in the sample that displays the payment amount only if a payment is going to show on this row. The formula for cell C6 is:

=IF(A6<\$A\$2,\$E\$2,IF(A6=\$A\$2,F5+D6,""))

8. COLUMN D: (D6 thru D53) **INTEREST**

- o Format the Interest Amount with commas and 2 places to the right of the decimal.
- o Use the formula shown in the sample that displays the interest amount paid only if a payment is going to show on this row. The formula for cell D6 is:

=IF(A6<=\$A\$2,INT((F5\*\$D\$2/12)+0.5)/100,"")

9. COLUMN E: (E6 thru E53) **PRINCIPLE**

- o Format the Principle Amount with commas and 2 places to the right of the decimal.
- o Use the formula shown in the sample that displays the principle amount paid only if a payment is going to show on this row. The formula for cell E6 is:

=IF(A6<=\$A\$2,C6-D6,"")

10. COLUMN F: (F5 thru F53) **BALANCE DUE**

- o Format the Balance Due Amount with commas and 2 places to the right of the decimal.
- o Place a border around the Balance column (F4 thru F53). Shade with a light color or light shade of gray the Balance column (F4 thru F53).

- o F5: Display the original loan amount from cell F2. The formula for cell F5 is:

=\$F\$2

- o F6 thru F53: Use the formula shown in the sample that displays the balance due only if a payment is going to show on this row. The formula for cell F6 is:

=IF(A6<=\$A\$2,F5-E6,"")

11. ROW 54:

Place heavy top and bottom lines (from borders) across cells C54 thru E54.

Shade with a light color or light shade of gray the cells C54 thru E54.

At the bottom of the columns for Pay-Amt, Interest, and Principle, (C54 thru E54) use formulas to add the total of each said column.

**ASSIGNMENT SUBMISSION:**

Produce the following two (2) printouts, stapled together in the following order, and then submit as your assignment:

1. A regular spreadsheet printout;
  - o Hand write in the upper right corner corner of this printout your:
    - a. Name;
    - b. Last 4 digits of your ID#;
    - c. Section#;
    - d. Assignment#;
2. A formula style printout.

Although the regular spreadsheet printout should print as one page (if all margins, headers, and footers are properly set), the formula printout will print as two, or three, or more pages. That is acceptable. No further adjustments are required to force the formula printout into one page.

**NOTES:**

- Use Microsoft's **Excel** spreadsheet. If any other spreadsheet other than **Excel** is used, it may not behave in the same manner as demonstrated with **Excel**.
- Use formulas comparable to the ones shown in the example formula printout. Remember that:
  - o The interest portion of any payment is calculated by multiplying the monthly interest rate (the annual interest percent divided by 12 divided by 100) times the balance due before the current payment;
  - o The principle portion of the payment is calculated by subtracting the interest portion of the payment from the payment amount.
  - o The new balance due is calculated by subtracting the principle portion of the current payment from the balance due before the current payment.
  - o The last payment is calculated as the balance due plus the interest to be paid on the balance due.

- The use of "IF" functions makes the spreadsheet "smart", that is, the value calculated and displayed will occur only if the "IF" condition is met. Use the formulas in the sample. Explanations of the formulas will be given during the class demonstration of this assignment.
  - IF the **DATE** column shows a number (such as "37956") rather than a date, please note:
    - This number is an **Excel** date!
      - It is **Excel's** way of storing a Y2K compatible date.
      - "37956" means there have been 37,956 days since January 1, 1900!
    - Format the date cell(s) by:
      - High-lighting the date cell(s) to be formatted;
      - Clicking *Format-Cells-Date* and select a *Type* of date format.The cell(s) will then show the date(s) in a human readable date format.
  - If a numeric, formula, or date cell displays ##### signs across the cell, it means that the column is not wide enough to display the number or date in the cell. The solution is to increase the column width until the number or date displays correctly.
  - To receive full credit, all specifications must be meet.
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[Click Here To See Sample Of This Assignment](#)

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