Due: Friday, January 29, 11:45 pm   **This document has 5 pages.**

Marks:

Note there is no VBA coding required for this first assignment, except for the macro that gets recorded in Part B. Part A requires no code.

Part A

In a new Excel workbook, create a worksheet with the name **Loan** and design a simple spreadsheet that will allow a user to calculate the payments they will make on a car loan.

You will use Excel's payment function (**PMT()**) and have the user be able to modify their **loan amount, number of payments** (typically 12 in a year, 60 for a 5-year car loan) and the **interest rate**. You can learn about the PMT function here.

Use **Cell Styles** to indicate which cells the user can change and which cells the user cannot. Format the result cell as Calculation style.

Using the references below if necessary, protect the worksheet by locking cells so the user cannot change or delete the equation. *Make sure the worksheet is user friendly by making it clear and easy to use for someone who doesn't know much about Excel.* Do not set a password on the protection or we will not be able to mark your spreadsheet.

Protecting a worksheet / Protecting Cells
https://support.microsoft.com/en-us/office/protect-a-worksheet-3179efdb-1285-4d49-a9c3-f4ca36276de6
Lock specific cells in a worksheet
https://support.microsoft.com/en-us/office/lock-cells-to-protect-them-cb7835f6-9c37-4161-bb53-d1c410acaf21

Here's an example: Your's does not have to look exact.

Part B

In Part B you will record a macro by following the instructions step-by-step (with a few extras thrown in), and then deleting the new worksheet, then stop recording the macro.

Tip: If you display your spreadsheet on one half of your computer screen and your VBE on the other half of the screen or on a different monitor, you can see VBA code added to the code window the VBE as you perform each step of the macro.

Record a macro that contains the following steps:

- Create a new worksheet
- Rename the worksheet as **Main**
- On the **Main** sheet, Format cell B2 using the **Cell Style** called **Input**
- Name cell B2 as **UserName** (using the Name box or *Formulas > Name Manager*)
- Unlock the **UserName** cell
- Type "**First Name:**" in cell A2 without quotation marks
  - If your column is too narrow, you can make column A wider, or just leave it if you do not know how.
- Copy cell A2, paste it into A4
- Press the Escape key (to remove the dotted marquee around the cell) (You may have to press Escape twice, the first time to get rid of the helper menu for pasting)
- Protect the worksheet
- Unprotect the worksheet, so you can see that appear in the macro as well
- Delete the worksheet called **Extra.**
- Stop the macro recorder

Note:
1. Before you run your macro, create a worksheet and name it **Extra** so your macro will not crash.
2. Delete the worksheet called Main before you run your macro or it will crash.

Take a few minutes to look at the macro you recorded and try to understand what each line of code is doing.

Early on, you may have to record simple steps like these to become familiar with the VBA code that they generate, but over time you will learn how to make the code more efficient and you'll know some common commands by heart.

When you enter the words "First Name:" into the cell, the macro recorder uses a property called **FormulaR1C1**. Since this is actually a value (label) and not a formula, the code should use the **Value** property instead. You may change it here if you wish. In future assignments you should always use the Value property for text and numbers, the Formula property for writing out Excel formulas or mathematical expressions (but not just the results of a calculation), and FormulaR1C1 property when using R1C1 notation (explained later).

By examining the code, you will need to learn VBA code to do the following:
- Create a new worksheet and rename it
- Change the Format of cells
- Set a Name for a cell or range (Named Ranges)
- Unlock a cell
- Enter text (values) into a cell, formulas are the same but uses the Formula property
- Copy and paste text
- Remove the copy marquee (dotted lines) from a copied cell

- Protect and unprotect a worksheet
- Delete worksheets

Further tips: ⭐

Looking at your recorded macro, you will see lines like:

Range("A2").Select
ActiveCell.FormulaR1C1 = "First Name:"

In VBA code, using a separate line to select an object first is not necessary, so in future assignments your code should look more like:

Range("A2").Value = "First Name:" (without having to select it first).

Marking Rubric

Part A

- ❑ Worksheet is neat and well organized – 1 mark
- ❑ Explains how to use the worksheet – 1 mark
- ❑ Cells for Loan amount, number of payments (periods) are formatted as Input cell style – 1 mark
- ❑ Payment cell formatted as calculation – 1 mark
- ❑ Changes to loan amount work correctly – 1 mark
- ❑ Changes to number of periods work correctly – 1 mark
- ❑ Changes to interest rate works correctly – 1 mark

Part B

Unless otherwise mentioned, the following points must also appear in the recorded macro.

- ❑ Code shows the worksheet created – 1 mark
- ❑ Code shows the worksheet renamed – 1 mark
- ❑ B2 is formatted as Input Style, and shown in code – 2 marks
- ❑ The named range "UserName" was created and is shown in the code – 1 mark
- ❑ Cell B2 has been unlocked – 1 mark
- ❑ Code shows how to enter "First Name:" into cell A2 – 1 mark
- ❑ Code show copy and paste – 2 marks
- ❑ Code shows CutCopyMode setting to remove marquee – 1 mark
- ❑ Code shows Worksheet was protected – 1 mark
- ❑ Code shows Worksheet was unprotected – 1 mark
- ❑ Code shows a worksheet was deleted – 1 mark

List of Considerations

This is a partial list of what the markers will look for when grading your assignment. Not all questions are pertinent to assignment 1 because it contains very little code.

Marking Checklist:
Does it run?
Does it do everything required?
Is anything missing?
Does it display errors?
Is it easy to understand if you were not familiar with the host application (ex. Excel)?
Are there on-screen instructions?
Is it visually appealing?
Is it user friendly?