## Workbook exercise #5: VBA exercise for Excel

Due dates for book exercises can be found on the main grid of the course webpage:

- https://pages.cpsc.ucalgary.ca/~tamj/2020/203F/index.html#Main_grid

Similar to the last exercise you should not underestimate this exercise. It will be more challenging partly because you now have a great deal more experience writing programs but mostly it's been designed with a challenge in order provide more of a stepping stone for the last assignment. If you can solve the smaller and less complex problem from the exercise then you have a greater chance with the larger and more complicated problem that you will face with the assignment.

Starting files that you should modify and submit:

- Excel macro enabled spreadsheet: [Tamville visitor data STARTING]. This file is a macro enabled Excel spreadsheet that you can use to contain or save your program (see **Figure 1**).
- Word 2007 document: [Wb_Ex5_backup]. Copy-paste your program into this document in order to back up your work.

In addition to backing up your work into the Word document it's critical that you **save (or contain) your macros in the above spreadsheet** when you first create the macro (via View->Macros in the Excel ribbon). **DO NOT** save it in "All Open workbooks". Doing the latter will save your macro in another spreadsheet that is local to your computer. (This means that when your marker downloads your submission the code will not be available and you will receive a zero).
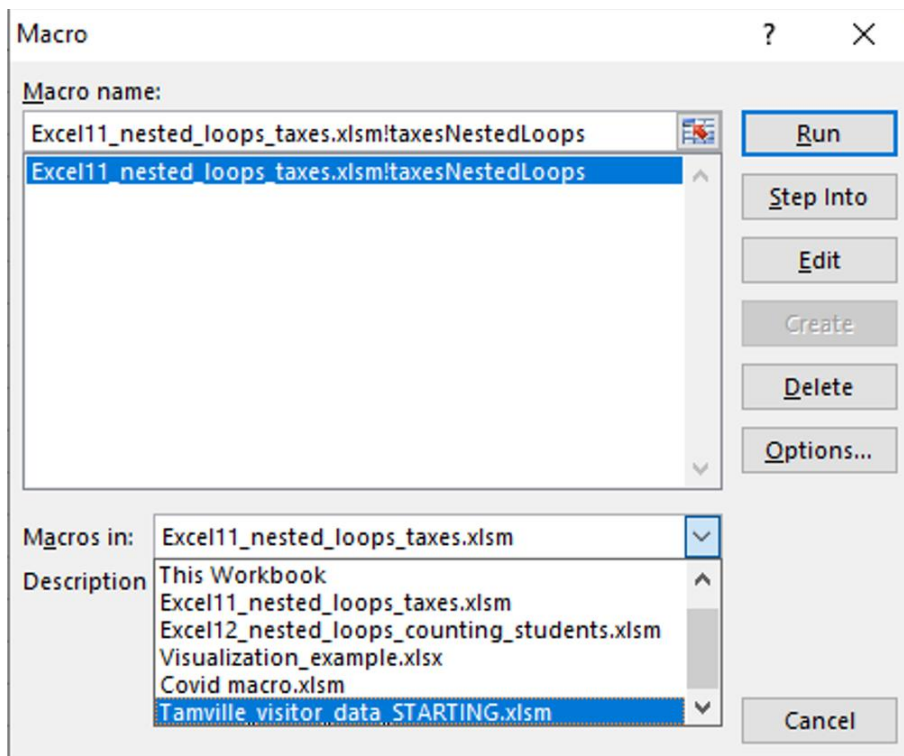


**Figure 1**: Save your program in the starting spreadsheet

## Description

Write an Excel VBA program that will count the number of visitors to the town "Tamville". Your program will determine the total number of visitors on a per month basis and show this information in the form of a popup for each month where visits occurred (as specified by the spreadsheet data). Information about the total number of visitors will be written into the spreadsheet itself.

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Month | Day | Number of visitors | Using sum to count visitors/month | | |
| 2 | Jan | 2 | 15 | 139 | | |
| 3 | Jan | 12 | 25 | | | |
| 4 | Jan | 24 | 38 | | | |
| 5 | Jan | 31 | 61 | | | |
| 6 | Feb | 13 | 52 | 92 | | |
| 7 | Feb | 14 | 40 | | | |
| 8 | Mar | 1 | 100 | 319 | | |
| 9 | Mar | 14 | 98 | | | |
| 10 | Mar | 25 | 53 | | | |
| 11 | Mar | 30 | 68 | | | |
| 12 | Apr | 1 | 27 | 147 | | |
| 13 | Apr | 9 | 100 | | | |

Your program will implement the above features on the currently active worksheet. While you can use the data in the two worksheets to test your submission your program must be able to work with any worksheet that contains visitor data in this format. To be blunt: Your solution **cannot** be tailored to work only with the cases in the starting spreadsheet (e.g. 33 rows of visitor data, exactly 4 days where visitors came into town in January etc.)

To help you test and debug the program Column 'D' contains the information that your program is to tabulate.

## Features of your program, how they must be implemented and credit awarded.

1. **Feature 1**: Writes the hard-coded text "Total yearly visitors=" to cell **E1** using the **Cells** or **Range** object. (**Worth 0.1 GPA**)
2. **Feature 2**: Correctly writes the total number yearly visits to Cell **F1** (Requires Feature 3A to be correct) (**Worth 0.2 GPA**)
3. **Feature 3**: Correctly counts the total number of visitors for each month and displays the count using a **MsgBox**:
   a. **Feature 3A**: Uses a loop to step through each non-empty row in the worksheet. (**Worth 1.0 GPA**)
   b. **Feature 3B**: Uses a loop nested inside of the one written for Feature 3A to step through the visits for a month. This loop repeats the process (or reruns from start to end for each month where visits have occurred). In the starting spreadsheet the nested loop for Feature 3B will run 10 times for the 10 months for the 2019 year and once for the 2018 year. Obviously this feature requires Feature 3A to be complete and correct. (**Worth 1.2 GPA**)

     c.  **Feature 3C**: The nested loop from 3B is used to count and display the visits for each month. Obviously requires Feature 3B to be complete and correct. (**Worth 1.5 GPA**)

**New, Dec. 1**: I never change requirements after they have been posted but in this cse it doesn't hurt you if you used nested loops and just adds another choice for a solution. The alternative to using a nested loop shown in the example covered in lecture can be used for full credit as well.

## Submitting your work:

- The file must be electronically submitted using D2L.
- (**New for this exercise**): submit both the macro enabled spreadsheet that contains your VBA program and the starting Word document (with the code for your program copy-pasted here). While "you won't lose" marks directly for excluding the Word document with the code you do so at your own peril. If for some reason your program is not actually contained in the spreadsheet that you uploaded into D2L then you will receive a grade of zero. If the deadline has passed then you won't be allowed to resubmit.
- You don't need any special naming conventions for this exercise. Keep in mind only the latest file is the one that will be marked, everything else will be ignored (because it is not fair to your marker to sort through multiple versions of your files). Whatever name you have for the latest make sure that it's what you truly want marked!
- D2L configuration for this course
  - o Multiple submissions are allowed for this assignment: You can (and really should) submit work as many times as you wish before the due date. Due dates are strict, only what is in D2L by the deadline is what will be marked. **Other methods of verifying that your work was completed on time (e.g. checking timestamps, emailed files etc.) will NOT be accepted**.
- Do not use compression utilities (such as zip) or archiving utilities (such as tar) otherwise your submission may not be marked. The space savings in D2L is not worth the extra time required by the marker to process each submission.
- Make sure that you [check the contents of your submitted files] (e.g., is the file okay or was it corrupted, is it the correct version etc.). It's your responsibility to do this! (Make sure that you submit your assignment with enough time before it comes due for you to do a check). Note: that even if you check the files, for VBA programs you must take care to save the program in the actual file you are submitting (not all Word documents or all Excel spreadsheets) and you should copy paste a backup into a Word document. Otherwise the check will only work on your computer and not when the marker tries to download the work.

## Important points to keep in mind:

1. **Extensions** may be granted for reasonable cases by the course instructor with the receipt of the appropriate documentation (e.g., a completed Statutory declaration form that has been signed by appropriate Deponent, you can get an appointment via the Office of the

). Typical examples of reasonable cases for an extension include: illness or a death in the family. Cases where extensions will NOT be granted include situations that are typical of student life: having multiple due dates, work commitments etc. Teaching Assistants (the people working in the 203 lab room) will not be able to provide extension on their own and must receive written permission from the course instructor first. (Note: Forgetting to submit/not properly submitting your assignment or a component of your assignment in does not constitute a sufficient reason for special grading considerations).

2. **Collaboration**: Assignments must reflect individual work, group work is not allowed in this class nor can you copy the work of others. To avoid problems students should not see each other's assignment solution.

3. **Execution**: the submission must work on the machines on campus Windows computers. (For the remote learning semester since access to the lab computers is more challenging: the requirement is that your document works on any Windows computer). It's up to you to test and check this is the case. Non-functional submissions will receive only partial credit (if any at all).

4. **Late submissions**:

| Submission received: | On time | Hours late : >0 and <=24 | Hours late: >24 and <=48 | Hours late: >48 hours |
|---|---|---|---|---|
| Penalty: | None | -1.5 GPA | -3.0 GPA | No credit |

## Marking:

- **New and specific for this exercise**: Because of university funding, all submissions for this exercise will be marked by one person: Wang, Nanija (Eric's email is: nanjia.wang1@ucalgary.ca). If you have any questions about the marking of this particular exercise then Eric is the one that you should contact first. As usual if you still have questions after this first step then feel free to contact your course instructor, just let me know that you talked to the marker first.
- Marking feedback. This workbook exercise has far fewer features than an assignment so there is a need for a marking spreadsheet. If any feedback is needed then you can find it directly in the D2L Dropbox folder for this exercise along with the