CST8333 Programming Language Research Project

# Practical Project Part 4 – Project Release – See Brightspace for due dates

* Refer to the Course Section Information (CSI) document posted in Blackboard under Course Information for additional requirements common to all assessments as well as details on the required use of the data set specified for the course.
* Refer to the documents in the dataset area in Brightspace for the list of dataset columns to use, note that all listed columns need to be used, and need to be present within your source code to verify you are using the dataset provided.
* The first record in the data set may contain the column names, if so you may skip over this record when reading in and parsing the data set data.
* You may use your previous work in this course as a reference / starting-point but I expect modifications, i.e. passing in older work again with none to very small changes will not earn marks.

## Tasks

* Modify your project to add additional functionality by utilizing the data set data to offer a new project feature to the user, **Choose one of**
* Horizontal Bar Chart
* Vertical Bar Chart
* Pie Chart
* Search records based on multiple columns at same time
* Sort records based on multiple columns at same time, in a selected order
* Your professor may also suggest alternatives specific to your course section via Brightspace or you may propose your own feature however, your professor must verify and grant permission before you proceed if you want to use your own idea, not listed in this handout, for a project feature.

The user must be able to interact with the program at run time to customize the output, for example what parts of the data to chart or perform a search or sort on.

Console programs can fall back on generating ASCII Art versions of charts.

Web Service projects can return a formatted result that can be either viewed as ASCII art in a testing program, or used by a client to render results in the case of charts.

You can figure out the logic and write the code on your own, or reference a web resource and adopt it to your own use, or use a framework either part of the language API or a free third party alternative (no paid packages). I.e. I do not care how you make it work, only that you make it work, that you can explain how it works, and that you documented learning resources and / or code library licensing using IEEE reference style.

**\*\*You must integrate the new feature you select above into your existing project as was developed through Practical Project Parts 1, 2 and 3 retaining the previous Projects functionality. A new stand-alone program that focuses on just this new feature will receive a mark deduction\*\***

## Your single MS Word document should have this general format

* Cover page with your full name within it.
* Heading with name “Evidence of Learning”
  + Code figures to display the implementation of the Practical Project Part 4 feature you selected.
  + Either:
    - Use small code examples for the feature, or
    - Indicate what line numbers in a larger code sample illustrate the feature.
    - **You must indicate clearly to your professor that you can identify what parts of your code illustrate and match to the implemented feature.**
* Heading with name “Program Demonstration via Screen Shots”
  + Include screen shots of your running program; I should see records from the data set displayed, as well as creating, updating, deleting records and re-loading and saving records via user interaction with the program, as well as demonstration of your selected program feature. Your full name must appear within the screen shots.
  + Indicate with brief description which screen shot shows the new feature in use.
* Heading with name “Source Code Commenting Example”
  + Copy and paste at least **one source code file** from your project to demonstrate you can write programming comments using documentation-comments. Use a font size of 10 point, with a monospaced font of your choosing.
  + This should be the file(s) that has your new project feature implemented.

**Note: There is no unit testing required for Practical Project Part 4.**

## Submission Requirements

* Upload your MS Word document and original source code files by the due date
  + One MS Word document
  + One zip file containing your original source code file(s)

\*\*Submitting any other format other than .doc or docx for your MS-Word document will result in zero for this assessment. Libra-Office users save-as… MS Word.

Do not bundle your MS Word document inside the source code zip-archive keep them separate instead.

* Ensure your full name is included in all materials as asked.

## Grading (Total 12 Points)

**Note: There is no entry in this rubric for a cover page with your full name in it, however a mark deduction of 3 points will be applied if you do not have a cover page in your MS Word document.**

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| --- | --- | --- | --- | --- |
| Criteria | Poor/Missing (0) | Below Expectations (1) | Meets Expectations (2) | Exceeds Expectations (3) |
| Evidence of Learning | Poor/Missing or program does not use the dataset as required. | New feature does not build and/or run or is incomplete. Reference is incomplete, and / or not in IEEE Reference style. Code figures and / or descriptive text and / or figure-text missing for several items.  Alternatively, student provides a standalone project that is missing C.R.U.D. (etc.) from earlier practical project parts. | New feature does build and/or run, but is not fully functional, i.e. does not work to produce correct results or does not meet expectations as specified. Reference is complete, but loosely patterned on IEEE reference style. Code figures and / or descriptive text and / or figure-text missing for some items. | New feature is complete, functional, and working correctly meets or exceeds expectations specified. Reference is complete and formatted using IEEE reference style. Code figures and / or descriptive text and / or figure-text present for all items. |
| Screen Shots, Running Program | Poor/Missing  E.g. missing full name from all images, image file not within the MS Word document. Screen shot does not demonstrate use of the dataset. Screen shot does not show or indicate requested feature. | Screen shots are within MS Word document. No explanation of the image. Has partial name or nickname or but full name missing from some screen shots. Some project functionality missing or program crashes. The requested feature is incomplete. | Screen shots are within MS Word document. Student provides brief generalized description of each image. Has full name in nearly all screen shots. Most of the requested feature is working. Descriptive text adjacent to screen shots briefly indicates presence of requested feature. | Screen shots are within MS Word document. Student provides brief yet detailed description of each image. Has full name in nearly all screen shots. New project feature is documented and working fully. Descriptive text adjacent to screen shots indicates and discusses requested feature. |
| Source Code, programmer comments. | Poor/Missing  E.g. missing full name as programmer comment at the top of the file as author of the file. | Student uses minimal comments in source code, e.g. the student does not comment (m)any class members. | Student comments some class and class members, however does not use documentation comments. | Student uses documentation comments in an accepted coding style specific to their language of study. If the language does not support documentation comments student provides evidence of this from reputable source, yet still comments code following best practices. |
| Source Code and Source Code files | Poor / Missing or MS Word document is bundled inside the code zip archive. | Not used for this criteria | Not used for this criteria | Student uploads both MS Word document, and source-code zip file keeping them separate, i.e. MS Word document is not inside zip file. |

## Additional Notes

**Video Game Software projects are not acceptable in this course.**

Your source code within the MS Word document, should match the code in your source code files, this includes the programmer comments. If there are large or many differences, you will lose marks.

**If you do not submit your full source code in a zip archive to so your code figures can be verified this entire assessment will be awarded zero points. It is your responsibility to submit the correct files.**

Name your project something similar to CST8333ProjectByYourName, where ‘Your Name’ is your ACSIS name. Where you develop the project through Practical Project Parts 1 through 4, naming your project “Project 1” (etc.) will not look professional for future submissions.