**Project Report**

Project Name: Percentage Calculator

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Calculating percentage is an easy task, but when it comes to teachers grading hundreds of students scores the easy task becomes annoying and repetitive. For teachers making a mistake on calculating a grade might mean they have to start over because you might not know where else a mistake occurred in your calculation.

A solution to that problem is creating a percentage calculating program. This project does exactly that by creating a GUI app for a percentage calculating program.

The Percentage calculator will have the option available for users to be able to input a file or manual input, if the input is manual then the user must enter the total score that can be achieved on whatever assessment they are using, then enter the student’s name followed by the score to calculate the percentage. The output is displayed after the input and the program will automatically create a save file with the student’s names their scores and their percentage.

Users Guide:

1. Total and Score are required input
2. Name is optional
3. There is a menu bar with the option to choose a file
4. The program only accepts a text file in the .txt format as input and outputs to a text file as well
5. The input text file content must follow this format:

Table

Description automatically generated with medium confidence

1. The output file for manual input will be in the same directory as the project files with the name “Calculation Results.txt”
2. The output file for file format will be in the same folder as the input file with the prefix “Calculated” in front of the input file name.

The concepts that I learned in class that were helpful were:

* Inheritance: helped create the GUI class
* Interface: helped with getting input from GUI
* Overriding, overloading
* I/O concepts were very helpful
* Exception handling

The concepts I learned while creating this project were:

* Swing GUI module
* Connecting GUI to backend code
* Serializable classes and transient keyword
* FileWriter Class
* BufferedWriter Class
* Try-with resources.

I would expand the project in the future by giving it more functionalities like sorting the output file with dates and attaching other useful grading tools to it like an average calculator or a tool that helps to sort out student grades.

The most difficult part to develop and implement was the bridge between the GUI class and the actual calculation class.