

# CS 3240 UNIX Programming

## Midterm Assignment

Fall 2023 Semester

Date of Assignment: 9/29/2023

Deadline: 10/6/2023 by Midnight

Total points: 150 points

Instructor: Patrik Boloz, M.S.

Create and submit these three bash files (.sh), which will solve these three tasks:

1. (50 points) Create a script that will countdown to 0 with increments of 1 where the user specifies the number of seconds to start with. Requirements:
  - Use user input to ask the user for the number of seconds.
  - If the countdown is equal to 0 or less, let the user know and exit out. Otherwise use a while loop and sleep to count down from the number of seconds to 0 while printing out the information to the terminal.
  - When the countdown reaches 0, print out a message stating that the countdown is complete.
2. (50 points) Create a script that will inform the user of their name and age, if they are an adult or a minor, and save the data in a separate text file. Requirements:
  - Use an argument to get the user's name.
  - Get the user's age by reading the user's input.
  - Display the user's name and then the user's age, where if the age is greater than 18, they will be an adult. Otherwise, they will be a minor.
  - Append the name and age to a text file (for example bolozp\_midterm2\_data.txt)
  - By using the AND and OR logical operators, print out a message either saying "You are between 18 and 65 years old" or "You are either under 18 or 65 and older."
3. (50 points) By using custom functions, a select loop, and case statements, create a calculator, that will perform additions, subtractions, multiplications, and divisions between 2 user defined numbers. Requirements:
  - Create 4 functions where an addition, subtraction, multiplication, and division happen between 2 numbers. These numbers can be floats so make sure it works for them too.
  - In the division function, create an if statement where if the second number is zero, the division will not happen. Also, set the number of decimal points to at least 2.

- Use the select loop and choice statements, where the user can choose between an addition, subtraction, multiplication, division, and exiting out of the program.
- Each choice should ask the user for 2 numbers, perform the action, and report back on the result.
- If the choice is invalid, report back to the user with that fact.
- If the user chooses the option to exit the program, exit the program.

To save on paper, each task has its expected output shown as a screenshot of the terminal on Brightspace under the Assignments > Midterm Assignment tab. Please compress all files (for example `bolozp_midterm1.sh`, `bolozp_midterm2.sh`, `bolozp_midterm3.sh`) to a folder and submit this ZIP folder to Brightspace before the deadline.