

CSC 1300 LAB 3 PURPLE

**Spring 2023, February 6, 2023 through February 9, 2023**

# Concepts

* If-Else statements, Switch statements
* Relational and logical operators
* Generating random numbers

Job Forecast Program



## Description

You will write a program to make a forecast of the user’s future job including where they will work, how many years they will work there, their yearly salary, and the company car they will drive. You must follow the specific directions on how to write the program. Looking at just the sample output without reading the specific instructions will likely result in a low grade because you will not be writing the program as specified. *You must look at both.*

## INSTRUCTIONS

1. In your **CSC1300LAB** folder, create a **Lab3Purple\_yourTTUusername** folder.
2. Open **Visual Studio Code (VS Code)**.
3. Click on **File** and then select **Open Folder**. Select the folder that you just created.
4. In **VS Code**, click on the **New File** icon to create a new file in thefolder.
5. Type **lab3.cpp** to create a new file with that name.
6. Include the following C++ libraries in your source file:
   1. iostream – for input and output
   2. iomanip – to use stream manipulators to print two numbers after the decimal in floating-point numbers
   3. cstdlib – to seed & generate random numbers
   4. ctime – to seed random number generator
7. Create all your variables at the top of your main function (but INSIDE of your main function). If you view the sample output first, you can see there are several lines with stars.
8. Create a string variable and initialize it with 79 ‘\*’ characters. Then, every time you want a line of stars printed, just print this string variable to the screen. Look at the example code below.

**string lineOfStars(79, ‘\*’);**

**cout << lineOfStars << endl;** **//this will print a line of 79 stars**

1. **Seed** the random number generator.
2. Set up the output stream with a **precision** of 2 and in **fixed** notation.
3. Print the line of stars, paragraph of text, and another line of stars.
4. Get user **input** (6 strings and 1 integer) – refer to sample output.
5. **Calculate** the number of years spent at the job and also the salary.
   1. Generate a **random number** between 1 and 100 for the number of years the user spends at their job.
   2. For the user’s salary, you will multiply several things together as you see below:  
      salary = (user’s integer they entered) x (10,000.00) x (**random number** between 1 and 10)
6. Determine the user’s future between 3 possible options. To do this, you will create a **branch** where your code will check the following:
   1. if the user’s integer is greater than or equal to 20, then the user’s option number is 1.
   2. Otherwise, if the user’s integer is greater than 7, but less than 20, then the user’s option number is 2.
   3. Otherwise, if the user’s integer is 7 or less, than the user’s option number is 3.
7. Create a **switch** statement to print the **results** where the cases are based off of the user’s option number. Refer to the sample output for the format of how the results should be printed. Note that you can print the line of stars before the switch statement and the ending line of stars after the switch ends.
   1. Case 1 print the user’s 1st company, number of years (step #13 above), salary (step #13 above), the color red, and the user’s 2nd vehicle they entered.
   2. Case 2 print the user’s 2nd company, number of years (step #13 above), salary (step #13 above), the color royal blue, and the user’s 2nd vehicle they entered.
   3. Case 3 print the user’s 3rd company, number of years (step #13 above), salary (step #13 above), the color neon orange, and the user’s 3rd vehicle they entered.
8. Make sure to put a comment block at the top of your code with the filename, author (you), date, and purpose of the program. Also make sure to put in comments to identify major sections of your code.

  

## Sample Output

#### Sample Output 1

Sample output to show validating user input. User input is highlighted in **yellow**.

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JOB FORECAST

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Enter in the information requested below and I will determine the job you will

get, how many years you will work there, your salary, and the company car you

will drive.

Company you like: ColourPop

Another company you like: Google

Company you hate: Mapco

Vehicle you like: 1975 Cadillac Eldorado

Another vehicle you like: 2023 DeLorean Alpha5

Vehicle you hate: 1999 Corbin Sparrow

Pick an integer between 1 to 25 (inclusively): 15

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You will work at Google for 19 years making $900000.00 per year

and driving a royal blue 2023 DeLorean Alpha 5 on business trips.

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#### Sample Output 2

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JOB FORECAST

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Enter in the information requested below and I will determine the job you will

get, how many years you will work there, your salary, and the company car you

will drive.

Company you like: Hitachi

Another company you like: PC Outdoors

Company you hate: Vacasa

Vehicle you like: 2022 Porsche 718 Cayman

Another vehicle you like: 2022 Lucid Air

Vehicle you hate: 2022 GMC Hummer EV

Pick an integer between 1 to 25 (inclusively): 1

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You will work at Vacasa for 45 years making $60000.00 per year

and driving a neon orange 2022 GMC Hummer EV on business trips.

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## What to Turn In

**Compress/zip** the **Lab3Purple\_yourTTUusername** folder and upload it to the ilearn assignment folder named **Lab 3**.