Assignment 3 CS 100 - Spring'24

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Submission Deadline: 11:55 PM, Wednesday 21st February, 2024

Folder Naming Convention: 2XXXXXXX_PA3

File Naming Convention: 2XXXXXXX_Task_x.cpp

Submission Guidelines: Remove all executable files from folder before compressing it. Only submit .zip file

Task 1: Pizza Deliveries [15 marks]

You are running a pizza delivery service which boasts its efficient delivery system. To ensure on timely delivery, customers are only required to pay for deliveries received on time; if a delivery is late, the customer does not have to pay for the meal. So with every late delivery, the service loses money.

Your task is to log delivery information, including the delivers value, and whether it was delivered on time or not (yes/no input). You are required to log 5 entries, after which you must provide information regarding the overall service. This includes: the total value of deliveries, total value of timely deliveries, % of timely deliveries, and the loss incurred due to untimely deliveries.

You are required to use loops to take input, and are required to follow the given format below:

```
Delivery 1 of 5
Enter total value of delivery: 4000
Was the delivery on time? (yes/no): yes

Delivery 2 of 5
Enter total value of delivery: 3200
Was the delivery on time? (yes/no): no

Delivery 3 of 5
Enter total value of delivery: 550
Was the delivery on time? (yes/no): yes

Delivery 4 of 5
Enter total value of delivery: 3300
Was the delivery on time? (yes/no): yes

Delivery 5 of 5
Enter total value of delivery: 1000
Was the delivery on time? (yes/no): yes

*** Summary ***

Total value of deliveries: 12050
Total value of deliveries received on time: 8850

Percentage of deliveries received on time: 80%
Loss due to untimely deliveries: 3200
```

Task 2: Highest Hourly Rate [20 marks]

The manager of a firm has asked you to create a program to find the highest hourly paid employee. The program should ask the user how many employees the user wants to enter data for, and for each employee, input their name, total pay, and hours worked.

After inputting the data, you must determine which employee has the highest hourly pay. You must print their name and their pay rate.

```
*** Employee Details ***

Employee 1
Enter name: zubair
Enter employee pay: 10000
Enter hours worked: 2
Hourly pay: 5000

Employee 2
Enter name: essa
Enter employee pay: 4000
Enter hours worked: 2
Hourly pay: 2000

Employee 3
Enter name: moiz
Enter employee pay: 7000
Enter hours worked: 4
Hourly pay: 1750

Employee 4
Enter name: wajiha
Enter employee pay: 12000
Enter hours worked: 1
Hourly pay: 12000

Employee 5
Enter name: maryam
Enter employee pay: 8400
Enter hours worked: 3
Hourly pay: 2800

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Employee with highest hourly pay is: wajiha
Highest hourly pay is: 12000
```

Task 3: Calculator [15 marks]

You've been banned from using all calculators and have to make your own. It should ask for the first number, then the operation, and then the second number. Possible operations are +,-,*,/,exit. If the user enters exit, your program should terminate, otherwise it should give the answer and prompt again for the next calculation.

Task 4: The Guessing Game [20 marks]

The program generates a random number between 0 and 99, and the user must guess. According to the difference between the users' guess and the random number, print "too low" or "too high". Stop the program if the user has guessed correctly.

Finally, print out the points they scored, 10 if the guessed on the first try, 5 if they guessed in the first 5 turns, 2 if they guessed in first 10 turns and 1 for anything above.

Hint: use these to generate the random number

srand(time(0)); // Seed the random number generator

int target = rand() % 100; // Generate a random number between 0 and 99

```
Guess a number between 0 and 99: 40
Too low! Try again: 70
Too low! Try again: 90
Too low! Try again: 99
Too high! Try again: 95

Congratulations! You guessed the number in 5 turns.
You scored 5 points!
```

Goodluck!