CSE 1321L: Programming and Problem Solving I Lab

Assignment 2 – 100 points

Conditional and Looping Statements

What students will learn:

1) Problem solving

2) Structure programs to include conditional logic

3) Write code that includes if/else statements

4) Using loops

Overview: For this assignment, you're going to practice making decisions in your code. It's because of those decisions that your program can behave differently depending on the values in your variables; these decisions are called conditional statements. In practical terms, this means you're going to expand on the concepts from assignment 1 and 2, but also include things like IF, ELSE IF, ELSE and /MATCH statements. Again, start early, practice, and ask a lot of questions.

Make sure to follow the FYE Submission Guidelines. Finally, we don't mean to lecture, but we want to remind you not to cheat. This is the core of what a lot of you will be doing for a living, so master it now.

Question 2A : Movie Ticket Pricing System

Problem Statement:

Write a Python program to determine the price of a movie ticket based on the customer's age and membership status.

Instructions:

1. Prompt the user to enter their age.
2. Prompt the user to enter whether they are a member of the cinema club (yes or no).
3. Use if, elif, and else statements to determine the ticket price based on the following rules:
    - If the customer is under 12 years old, the ticket price is $8.
    - If the customer is 12 to 17 years old, the ticket price is $10.
    - If the customer is 18 to 64 years old:
        - Prompt the user to enter whether they are a member of the cinema club (yes or no).
        - The ticket price is $15 if they are not a member.
        - The ticket price is $12 if they are a member.
    - If the customer is 65 years or older, the ticket price is $10.
4. Display the final ticket price to the user.

Sample Output:

```
Enter your age: 45
Are you a member of the cinema club (yes or no)? yes
Your ticket price is: $12
```

Question 2B : Animal Classifier

Problem Statement:

Write a Python program that classifies animals into different categories based on user input. The categories are Mammals, Birds, Reptiles, Fish, and Amphibians.

Instructions:

1. Prompt the user to enter the name of an animal.
2. Use if, elif, and else statements to classify the animal into one of the following categories:
    - **Mammals:** Examples include dog, cat, human, elephant, and whale.
    - **Birds:** Examples include eagle, parrot, penguin, and sparrow.
    - **Reptiles:** Examples include snake, lizard, crocodile, and turtle.
    - **Fish:** Examples include salmon, goldfish, shark, and tuna.
    - **Amphibians:** Examples include frog, toad, salamander, and newt.
3. If the animal entered does not fall into any of the above categories, display "Unknown category."
4. Display the category of the animal to the user.

Sample Output:

```
Enter the name of an animal: cat
The animal is a Mammal.
```

Hint:

- You can use a predefined list of examples for each category to make the classification easier. This question will require handling multiple conditions to match each animal to its respective category.

Question 2C : Day of the Week Translator

Problem Statement:

Write a Python program that converts a numeric input representing a day of the week to its corresponding name using match statements.

Instructions:

1. Prompt the user to enter a number between 1 and 7.
2. Use a match statement to translate the number to the corresponding day of the week:
    1: Monday
    2: Tuesday
    3: Wednesday
    4: Thursday
    5: Friday
    6: Saturday
    7: Sunday
3. Display the name of the day to the user. If the input is not between 1 and 7, display an error message saying "Invalid input. Please enter a number between 1 and 7."

Sample Output:

```
Enter a number (1-7): 5
The day of the week is: Friday
```

Submission:

1. You will submit 3 separate files containing source code – one for each of the assignments above. Make sure the files are named correctly and to include the header with your name and course section listed.

2. Upload both files (simultaneously) to the assignment submission folder in Gradescope.

3. We'll continue to work with you on this assignment if something messes up, so long as you submit by the due date. However, start early because we work during the weekday.