

- 1) Download the Python file Homework3-Exercises.py and work directly in this file only.
- 2) Please write your name, ID, and initial to the Honor Code statement.
- 3) Submit the python file as yourname\_cs110\_hw3.py and submit it to Canvas. Submit only this .py file.
- 4) Any late submission will be penalized 25% of the earned points per 24 hours.
- 5) Submissions must follow the instructions. Any incorrect format of submission (e.g., file, errors, etc.) is subject to be penalized.
- 6) Specific to homework 3:
  - a. Test each condition once.
  - b. Add comments pasting your input/output for testing each condition beneath your code.
  - c. Example is provided in Homework3-Exercises.py.

## Exercises

### [20 PTS] QUESTION 1

**A grocery store is offering discounts based on the number of items a customer purchases:**

- **15% discount if the number of items is divisible by both 3 and 5.**
- **10% discount if divisible by 3 only.**
- **5% discount if divisible by 5 only.**
- **No discount if not divisible by 3 or 5.**

**Write a program that asks the user to input the number of items purchased and prints which discount they get.**

### [20 PTS] QUESTION 2

**A movie theater is offering discounts based on customer age. A customer qualifies for the discount if:**

- **Their age is between 10 and 50 (inclusive).**
- **Or, their age is a multiple of 7 (7, 14, 21, etc.).**

**Write a program that asks the user to input their age and checks if they are eligible for the discount.**

**If the customer qualifies, print "Discount eligibility: Yes". If they do not qualify, print "Discount eligibility: No".**

**[20 PTS] QUESTION 3**

Write a program that asks the user for a year and then checks if it's a leap year.

- The program should print "Leap year" if the year is divisible by 4 but not divisible by 100, unless it's also divisible by 400.
- Otherwise, print "Not a leap year".

**[20 PTS] QUESTION 4**

Write a program that simulates a simple bank transaction approval system.

The program should ask the user to input the amount they want to withdraw and respond according to the following conditions:

- If the amount is greater than \$1000, print "Large transaction, approval required."
- If the amount is between \$500 (inclusive) and \$1000, print "Transaction in review."
- If the amount is less than \$500:
- If the amount is less than \$10, do nothing here for smaller transactions by using the pass statement.
- Otherwise, print "Transaction approved."

**[20 PTS] QUESTION 5**

Write a program that takes a user's grade as input and categorizes it as follows:

- If the grade is 90 or higher, print "A".
- If the grade is between 80 and 89, print "B".
- If the grade is between 70 and 79, print "C".
- If the grade is between 60 and 69, print "D".
- If the grade is below 60, print "F".

Hint: make sure to use each at least once: if, elif, and else.

Hint: make sure the number entered is within a valid range.

Fall 2024 CS 110: Computer Science Fundamentals  
HW3 due on 10/23/2024 Wednesday 11:59 PM