CS125 Introduction to Data Analysis for Social Sciences
Midterm Exam
Duration: 100 minutes

NOTE: Write your name and surname as a comment in the beginning of each script.

1. **(30 pts.)** Write a Python script, **`yourname_mt_q1.py`** that inputs a string **word** and determines if the **word** entered is a palindrome or not. A palindrome is a word that is the same when read from the start and from the end.
   *** DO NOT USE A LOOP***

   Sample Run 1:

   ```
   Enter a word: racecar
   racecar is a palindrome.
   ```

   Sample Run 2:

   ```
   Enter a word: hello
   hello is not a palindrome.
   ```

2. **(30 pts.)** Write a Python script, **`yourname_mt_q2.py`,** that does the following:
   a. Creates and displays a <u>dictionary</u> **d** where the **keys** are random numbers between 1 and 50 (both included) and the **values** are the <u>keys modulus 10</u>. **Notes:** You should use a loop to add the `key:value` pairs to the dictionary. You should import the `random` module and use the `randint()` function. Generate 10 random numbers as keys. Only add a key if it is not already in the dictionary.
   b. Create and display a list containing the values in the dictionary whose keys are divisible by 4 or 7.

   Sample Run:

   ```
   Dictionary:
    {24: 4, 35: 5, 4: 4, 11: 1, 46: 6, 27: 7, 18: 8, 42: 2, 9: 9, 38: 8}
   The list is: [4, 5, 4, 2]
   ```

3. **(40 pts.)** Write a Python script, **`yourname_mt_q3.py`** that simulates a rock-paper-scissors game. There are two players, each taking a turn to enter their move (either **rock**, **paper**, or **scissors**). At the end of each round apply the following rules to determine the winner:
   - Rock beats scissors
   - Scissors beats paper
   - Paper beats rock

   The game should terminate if one of the players win. Otherwise, it should continue up to 3 rounds. If there are no winners after 3 rounds, an appropriate message should indicate a draw. **Note:** You should **use a loop** to repeat the rounds. You do not need to check for spelling errors, assume moves are entered correctly.

Sample Run 1:

```
*** Rock, Paper, Scissors Game ***

Player1 enter your move: rock

Player2 enter your move: paper
>> PLAYER2 WINS in round 1
```

Sample Run 2:

```
*** Rock, Paper, Scissors Game ***

Player1 enter your move: rock

Player2 enter your move: Rock


>> No winners for round 1

Player1 enter your move: Paper

Player2 enter your move: PAPER
>> No winners for round 2

Player1 enter your move: scissors

Player2 enter your move: SCISSORS
>> No winners for round 3

---- GAME OVER ----
```