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Sub: FP(Functional Programming)

Branch: CBA

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---------------------------PRACTICAL 03----------------------------

❖ Question:

1. *Four friends are playing cards. One person has to assume whether the opponent is giving correct judgment or not? The scenario is to simulate a person to pick a card from a deck of 52 cards. The opponent should be able to recognize the rank and suit of the card. i.e. (Rank can be: Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, king) and suit: Clubs, Diamonds, Heart, Spades).*
Here is a sample run of the program:
The card you picked is the Jack of Hearts.

2. *An astrologer is interested to do analysis for the calculations w.r.t zodiac signs. The zodiac sign depends upon the month, day and date on which any person is born. To make his work easy, help the astrologer to display first days of each month by considering his requirements. He has to only provide the year and first day of the year.*
Sample: if the user entered year 2021, and 5 for Friday, January 1, 2021, the program should display the following
output: January 1, 2021 is Friday

...

December 1, 2021 is Wednesday.

3. *A teaching assistance is asked to prepare program to generate a quiz corresponding to faculties requirement. The program should generate questions depending on faculties requirement should report correct answers after a student answers all of them. Also, the time spent on the test by each student should be known.*

✓ **Source Code:**

```python
import time
import random
import datetime
# ----------------------1----------------------
print("--------------------1----------------------")
ranks = ['Ace', '2', '3', '4', '5', '6', '7',
         '8', '9', '10', 'Jack', 'Queen', 'King']
suits = ['Clubs', 'Diamonds', 'Hearts', 'Spades']
num = random.randint(1, 52)
print(num)
tk = num//13
print(suits[tk])
tk = num % 13
print(ranks[tk-1])

print(" The card you picked is the ", ranks[tk-1], "of", suits[tk])
print("\n")
print("---------------------------------------------")
# --------------------2----------------------
print("--------------------2----------------------")


def first_day_of_month(year, first_day_of_year):

    first_days_of_month = []

    for month in range(1, 13):

        first_day = datetime.date(year, month, 1)
        day_name = first_day.strftime("%A")
        first_days_of_month.append(
            f"{first_day.strftime('%B')} 1, {year} is {day_name}")
    return first_days_of_month


year = 2021
first_day_of_year = 5   # Friday
```

```python
z = first_day_of_month(year, first_day_of_year)
for txt in z:
    print(txt)
print("-----------------------------------------------")
print("\n")
# ----------------------3----------------------
print("---------------------3---------------------")

# create a list to store the questions and options
quiz = []

# gather input from the faculty member
num_questions = int(input("Enter the number of questions for the quiz: "))
for i in range(num_questions):
    question = input("Enter question " + str(i+1) + ": ")
    options = input("Enter options for question " + str(i+1) +
                    " (separated by commas): ").split(",")
    correct_answer = input(
        "Enter the correct answer for question " + str(i+1) + ": ")
    quiz.append({"question": question, "options": options,
                 "correct_answer": correct_answer})

# administer the quiz to the student
start_time = time.time()
score = 0
for i in range(num_questions):
    print("Question " + str(i+1) + ": " + quiz[i]["question"])
    print("Options: " + ", ".join(quiz[i]["options"]))
    answer = input("Enter your answer: ")
    if answer == quiz[i]["correct_answer"]:
        score += 1
end_time = time.time()

# report the results to the student
print("Quiz complete! You scored " +
      str(score) + " out of " + str(num_questions))
print("Time spent on the test: " + str(end_time - start_time) + " seconds")
print("---------------------------------------------")
```

✓ **Output Screenshots:**

Q.1:

```
---------------------1----------------------
 27
 Hearts
 Ace
  The card you picked is the  Ace of Diamonds


  ------------------------------------------------
```

Q.2:

```
-------------------------2-------------------------
January 1, 2021 is Friday
February 1, 2021 is Monday
March 1, 2021 is Monday
April 1, 2021 is Thursday
May 1, 2021 is Saturday
June 1, 2021 is Tuesday
July 1, 2021 is Thursday
August 1, 2021 is Sunday
September 1, 2021 is Wednesday
October 1, 2021 is Friday
November 1, 2021 is Monday
December 1, 2021 is Wednesday
-------------------------------------------------
```

Q.3:

```
-------------------------3-------------------------
Enter the number of questions for the quiz: 5
Enter question 1: Who is Black Panther's sister?
Enter options for question 1 (separated by commas): shuri,natasha,wasp,gamora
Enter the correct answer for question 1: shuri
Enter question 2: How many Infinity Stones are there in MCU?
Enter options for question 2 (separated by commas): six,four,one,three
Enter the correct answer for question 2: six
Enter question 3:  Who is Tony Stark's father?
Enter options for question 3 (separated by commas): Howard Stark,bucky stark,stan stark,john stark
Enter the correct answer for question 3: Howard Stark
Enter question 4: Who was able to pick up Thor's hammer in Endgame?
Enter options for question 4 (separated by commas): Captain America,Hulk,Thanos,Iron Man
Enter the correct answer for question 4: Captain America
Enter question 5: Who is the superhero that is also known as the "Man of Steel"?
Enter options for question 5 (separated by commas): superman,thor,iron man,batman
Enter the correct answer for question 5: superman
Question 1: Who is Black Panther's sister?
Options: shuri, natasha, wasp, gamora
Enter your answer: shuri
Question 2: How many Infinity Stones are there in MCU?
Options: six, four, one, three
Enter your answer:
Question 3:  Who is Tony Stark's father?
Options: Howard Stark, bucky stark, stan stark, john stark
Enter your answer: Howard Stark
Question 4: Who was able to pick up Thor's hammer in Endgame?
Options: Captain America, Hulk, Thanos, Iron Man
Enter your answer: Captain America
Question 5: Who is the superhero that is also known as the "Man of Steel"?
Options: superman, thor, iron man, batman
Enter your answer: superman
Quiz complete! You scored 4 out of 5
Time spent on the test: 32.01503133773804 seconds
```