**Institute of Computer Technology**

**B. Tech. Computer Science and Engineering**

**Semester: IV**

**Sub: Functional Programming**

**Course Code: 2CSE403**

**Practical Number:2**

**Objective:**

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).

**Code :**

import random

ranks = ['Ace', '2', '3', '4', '5', '6', '7', '8', '9', '10', 'Jack', 'Queen', 'King']

suits = ['Clubs', 'Diamonds', 'Hearts', 'Spades']

def pick\_card():

    rank = random.choice(ranks)

    suit = random.choice(suits)

    return rank, suit

print("A card has been picked from the deck.")

rank, suit = pick\_card()

opponent\_rank = input("Opponent, guess the rank of the card: ")

opponent\_suit = input("Opponent, guess the suit of the card: ")

print(f"\nActual Card: {rank} of {suit}")

if opponent\_rank == rank and opponent\_suit == suit:

    print("Correct Judgment! The guess is accurate.")

else:

    print("Incorrect Judgment. Better luck next time!")

**Output :-**

A screen shot of a computer code

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1. 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 2025, and 2 for Wednesday, January 1, 2025, the program should display the following

**Code :**

def get\_first\_days(year, first\_day):

    # Days in each month

    months = ["January", "February", "March", "April", "May", "June",

              "July", "August", "September", "October", "November", "December"]

    days\_in\_month = [31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31]

    if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):

        days\_in\_month[1] = 29

    days\_of\_week = ["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"]

    first\_days = []

    current\_day = first\_day

    for i, days in enumerate(days\_in\_month):

        first\_days.append((months[i], days\_of\_week[current\_day]))

        current\_day = (current\_day + days) % 7

    return first\_days

year = int(input("Enter the year: "))

first\_day = int(input("Enter the first day of the year (0=Sunday, 1=Monday, ..., 6=Saturday): "))

print("\nFirst days of each month:")

for month, day in get\_first\_days(year, first\_day):

    print(f"{month}: {day}")

**Output :-**

A screenshot of a computer program

AI-generated content may be incorrect.

1. 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 answer all of them. Also, the time spent on the test by student should be known.

**Code :**

import time

quiz = [

    {"question": "What is the capital of France?", "answer": "Paris"},

    {"question": "What is 5 + 7?", "answer": "12"},

    {"question": "What is the color of the sky?", "answer": "Blue"}

]

def start\_quiz():

    correct\_answers = 0

    total\_questions = len(quiz)

    print("\nStarting the quiz...")

    start\_time = time.time()

    for q in quiz:

        print("\n" + q["question"])

        user\_answer = input("Your Answer: ").strip()

        if user\_answer.lower() == q["answer"].lower():

            correct\_answers += 1

    end\_time = time.time()

    time\_taken = end\_time - start\_time

    print("\nQuiz Completed!")

    print(f"Correct Answers: {correct\_answers} out of {total\_questions}")

    print(f"Time Taken: {time\_taken:.2f} seconds")

start\_quiz()

**Output :-**

A screenshot of a computer

AI-generated content may be incorrect.