PYTHON PROGRAMMING INTERNSHIP

(PROJECT BASED)

WEEK 1 PROJECT(PROJECT 1)

PROJECT: BASIC QUIZ GAME.

REQUIREMENTS AND FEATURES OF PROJECT:

Build a simple quiz game that asks users a series of questions.

Implement a scoring system to evaluate the user's performance.

Enhance user interaction by allowing them to input their answers.

Reinforce Python fundamentals, including data structures, control flow, and user inputhandling.

Questions and Options: Design the quiz with at least three questions. Each question shouldhave multiple-choice options.

Scoring System: Implement a scoring mechanism to track the user's correct answers.User Input: Allow users to input their answers. Use appropriate validation to handle user input.

Feedback: Provide feedback on each question, indicating whether the user's answer was correct or incorrect. Display the correct answer if the user is wrong.

Final Score: Display the user's final score at the end of the quiz.

Customization: Make it easy to customize the quiz by modifying the questions, options, andcorrect answers.

Code Structure: Organize your code into functions or classes for better readability andmaintainability.

QUIZ GAME DESIGN:

A simple implementation of a quiz game in Python that meets your requirements. This program uses functions to keep the code organized, supports a scoring system, provides feedback, and is easily customizable

CODE:

```
# Quiz Game


# Define the quiz questions, options, and correct answers
questions = [
    {
```

```
    "question": "What is the capital of India?",
    "options": ["A. Berlin", "B. New delhi", "C. Madrid", "D. Rome"],
    "answer": "B"
  },
  {
    "question": "Which planet is known as the Red Planet?",
    "options": ["A. Earth", "B. Venus", "C. Mars", "D. Jupiter"],
    "answer": "C"
  },
  {
    "question": "Who is the  first female Prime minister of India?",
    "options": ["A. Indira Gandhi", "B. Sumitra mahajan", "C. kiran bedi", "D. Sushma swaraj"],
    "answer": "A"
  },
  {
    "question": "What is the smallest prime number?",
    "options": ["A. 1", "B. 2", "C. 3", "D. 5"],
    "answer": "B"
  },
  {
    "question": "What is the largest mammal?",
    "options": ["A. Elephant", "B. Blue Whale", "C. Giraffe", "D. Orca"],
    "answer": "B"
  },
  {
    "question": "What gas do plants absorb from the atmosphere?",
    "options": ["A. Oxygen", "B. Nitrogen", "C. Carbon Dioxide", "D. Hydrogen"],
    "answer": "C"
  },
  {
    "question": "Which element has the chemical symbol 'O'?",
    "options": ["A. Gold", "B. Oxygen", "C. Osmium", "D. Iron"],
    "answer": "B"
  },
  {
    "question": "What is the largest planet in our Solar System?",
```

```
        "options": ["A. Earth", "B. Mars", "C. Saturn", "D. Jupiter"],
        "answer": "D"
    },
    {
        "question": "Which is the largest continent in world ?",
        "options": ["A. Africa", "B. Australia", "C. Asia", "D. Europe"],
        "answer": "C"
    },
    {
        "question": "Which ocean is the largest?",
        "options": ["A. Atlantic", "B. Indian", "C. Pacific", "D. Arctic"],
        "answer": "C"
    }
]

# Function to display a question and get user's answer
def ask_question(question_data):
    print("\n" + question_data["question"])
    for option in question_data["options"]:
        print(option)
    answer = input("Enter your answer (A, B, C, or D): ").strip().upper()
    return answer

# Function to check the answer and give feedback
def check_answer(user_answer, correct_answer):
    if user_answer == correct_answer:
        print("Correct!")
        return True
    else:
        print("Incorrect! The correct answer was", correct_answer)
        return False

# Main function to run the quiz
def run_quiz():
    score = 0
    for question in questions:
        user_answer = ask_question(question)
```

```
        # Validate user input
        while user_answer not in ["A", "B", "C", "D"]:
            print("Invalid input. Please enter A, B, C, or D.")
            user_answer = input("Enter your answer (A, B, C, or D): ").strip().upper()

        # Check the answer and update score
        if check_answer(user_answer, question["answer"]):
            score += 1

    # Display the final score
    print(f"\nQuiz completed! Your final score is: {score}/{len(questions)}")

# Run the quiz
if __name__ == "__main__":
    run_quiz()
```

Explanation of the Code

1. **Question Data Structure**: Each question is stored as a dictionary in a list, with the question text, answer options, and the correct answer.
2. **ask_question Function**: Displays the question and answer choices, then prompts the user for their input.
3. **check_answer Function**: Compares the user's answer with the correct answer, provides feedback, and returns True if the answer is correct and False otherwise.
4. **run_quiz Function**: Loops through all questions, calls ask_question to display them, validates input, checks answers, and keeps track of the score.
5. **Validation**: Ensures the user's answer is one of the valid options.

This structure makes it easy to add, remove, or edit questions in the questions list, making the quiz customizable. Run the above script to start the quiz

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