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Title : Python programming Basic quize code

Python code:

```
def __init__(self, questions):
    self.questions = questions
    self.score = 0

def display_question(self, question):
    print(question['question'])
    for idx, option in enumerate(question['options'], 1):
        print(f'{idx}. {option}')
    user_answer = input("Enter your answer (1, 2, 3, or 4): ")
    return int(user_answer) - 1

def check_answer(self, question, user_answer):
    correct_option = question['answer']
    if user_answer == correct_option:
        print("Correct!")
        self.score += 1
    else:
        print("Incorrect.")
        print(f"The correct answer is: {question['options'][correct_option]}")

def run_quiz(self):
    print("Welcome to the Quiz Game!")
    for question in self.questions:
        user_answer = self.display_question(question)
        self.check_answer(question, user_answer)
```

```

print(f"Quiz completed! Your final score is: {self.score}/{len(self.questions)}")

def main():
    questions = [
        {
            "question": "What is the capital of France?",
            "options": ["London", "Paris", "Berlin", "Rome"],
            "answer": 1
        },
        {
            "question": "Which is the largest planet in our solar system?",
            "options": ["Venus", "Mars", "Jupiter", "Saturn"],
            "answer": 2
        },
        {
            "question": "Who wrote 'Romeo and Juliet'?",
            "options": ["William Shakespeare", "Jane Austen", "Charles Dickens", "Leo Tolstoy"],
            "answer": 0
        }
    ]

    quiz = Quiz(questions)
    quiz.run_quiz()

if __name__ == "__main__":
    main()

```

Explanation about the project :

This Python code creates a basic quiz game with multiple-choice questions. It uses a class `Quiz` to manage questions, user input, scoring, and feedback. The `main()` function initializes

the quiz with predefined questions, runs the quiz, and displays the final score. The code is structured for readability and customization, allowing easy modification of questions and options

Requirements & Features :

Questions and Options: The code defines a list of questions, each containing a question prompt and a list of options. For example:

```
questions = [  
    {  
        "question": "What is the capital of France?",  
        "options": ["London", "Paris", "Berlin", "Rome"],  
        "answer": 1  
    },  
    # Add more questions similarly  
]
```

Scoring System: The Quiz class tracks the user's score as they answer questions. The score attribute increments each time the user answers correctly.

User Input: The `display_question` method prompts the user to input their answer for each question. It validates the input to ensure it's within the valid range of options.

Feedback: After the user inputs their answer, the code checks if it's correct or incorrect. It provides feedback accordingly, displaying "Correct!" or "Incorrect." along with the correct answer if the user was wrong.

Final Score: At the end of the quiz, the code displays the user's final score out of the total number of questions.

Customization: The quiz can be easily customized by modifying the questions list. Each question object can be adjusted to change the question prompt, options, and correct answer.

Code Structure: The code is organized into a Quiz class, which contains methods to manage the quiz functionality. This structure improves readability and maintainability by

encapsulating related functionality within the class. Additionally, the main() function serves as the entry point and orchestrates the quiz execution.

Overall, the code satisfies the requirements by structuring the quiz game logically, implementing the necessary features, and providing a clear and customizable interface for quiz creation.

Output of the code :

Welcome to the Quiz Game!

What is the capital of France?

1. London
2. Paris
3. Berlin
4. Rome

Enter your answer (1, 2, 3, or 4): 2

Correct!

Which is the largest planet in our solar system?

1. Venus
2. Mars
3. Jupiter
4. Saturn

Enter your answer (1, 2, 3, or 4): 3

Correct!

Who wrote 'Romeo and Juliet'?

1. William Shakespeare
2. Jane Austen
3. Charles Dickens
4. Leo Tolstoy

Enter your answer (1, 2, 3, or 4): 0

Correct!

Quiz completed! Your final score is: 3/3