

Micro Project: Quiz System

Team 7:

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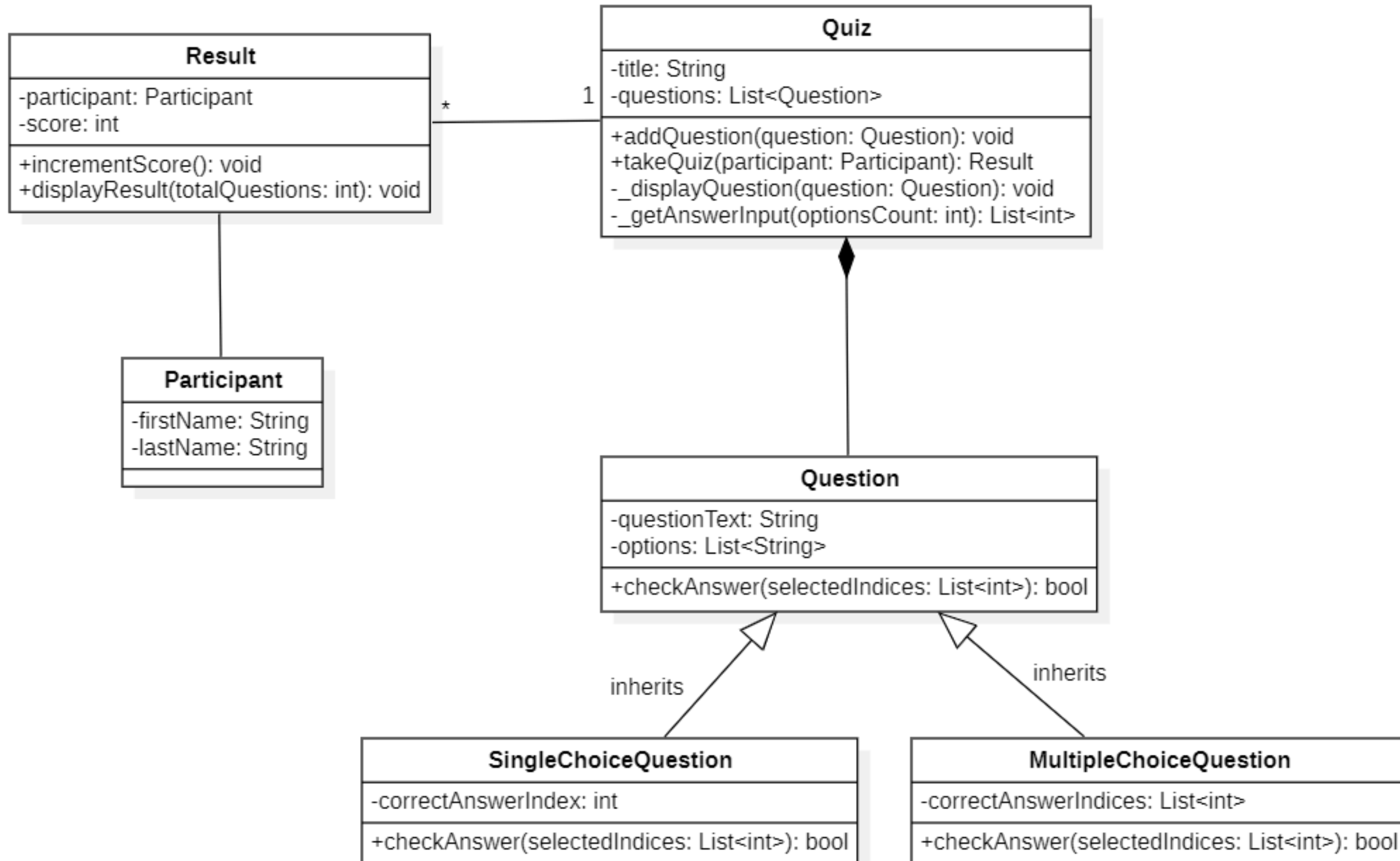
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Key Functionalities

- Create a quiz
- Add questions
- Take the quiz
- Track results
- Display results

Class Diagram



Code

```
class SingleChoiceQuestion extends Question {
    final int correctAnswerIndex;

    SingleChoiceQuestion(
        String questionText, List<String> options, this.correctAnswerIndex)
        : super(questionText: questionText, options: options);

    @override
    bool checkAnswer(List<int> selectedIndices) {
        return selectedIndices.length == 1 &&
            selectedIndices.first == correctAnswerIndex;
    }
}

class MultipleChoiceQuestion extends Question {
    final List<int> correctAnswerIndices;

    MultipleChoiceQuestion(
        String questionText, List<String> options, this.correctAnswerIndices)
        : super(questionText: questionText, options: options);

    @override
    bool checkAnswer(List<int> selectedIndices) {
        var Set<dynamic> selectedSet = Set<dynamic>.from(elements: selectedIndices);
        var Set<dynamic> correctSet = Set<dynamic>.from(elements: correctAnswerIndices);

        bool isCorrect = selectedSet.length == correctSet.length &&
            selectedSet.containsAll(other: correctSet);
        return isCorrect;
    }
}
```

```
class Result {
    final Participant participant;
    int score = 0;

    Result(this.participant);

    void incrementScore() {
        score++;
    }

    void displayResult(int totalQuestions) {
        print(
            object: '${participant.firstName} ${participant.lastName}, your score is $score/$totalQuestions\n');
    }
}
```

Output

```
----- Main Menu -----
1. Take a Quiz
2. View results
3. Exit
Enter your choice:
1
Enter your first name:
Livita
Enter your last name:
Touch

Starting Quiz: IT Quiz

Which of the following is a programming language?
1. Python
2. HTTP
3. FTP
4. HTML
Enter your answer(s): (For multiple answers, separate with commas)
1
Correct!

Which of the following are types of cybersecurity threats? (Select all that apply)
1. Virus
2. Worm
3. Firewall
4. Trojan
Enter your answer(s): (For multiple answers, separate with commas)
1, 2, 4
Correct!

Livita Touch, your score is 2/2
```

```
----- Main Menu -----
1. Take a Quiz
2. View results
3. Exit
Enter your choice:
1
Enter your first name:
Vita
Enter your last name:
ncfwef

Starting Quiz: IT Quiz

Which of the following is a programming language?
1. Python
2. HTTP
3. FTP
4. HTML
Enter your answer(s): (For multiple answers, separate with commas)
7
Incorrect.

Which of the following are types of cybersecurity threats? (Select all that apply)
1. Virus
2. Worm
3. Firewall
4. Trojan
Enter your answer(s): (For multiple answers, separate with commas)
2
Incorrect.

Vita ncfwef, your score is 0/2
```

Output

```
----- Main Menu -----
1. Take a Quiz
2. View results
3. Exit
Enter your choice:
2

--- Quiz Results ---
Livita Touch, your score is 2/2

Vita ncfwef, your score is 0/2

----- Main Menu -----
1. Take a Quiz
2. View results
3. Exit
Enter your choice:
3
Exit Successfully...
```