Quiz Project

Team 7:

- Touch Livita
- Van Hoklin

Class Diagram


```
┌─────────────────────┐           ┌──────────────────────────────────┐        ┌────────────────────────────────┐
│       Player        │  1      * │               Quiz               │  1   * │           Question             │
├─────────────────────┤──────────│──────────────────────────────────│────────│────────────────────────────────│
│ -firstName: String  │          │ -title: String                   │        │ -questionText: String          │
│ -lastName: String   │          │ -questions: List<Question>       │        │ -options: List<String>         │
│                     │          ├──────────────────────────────────┤        │ -correctAnswer: List<String>   │
├─────────────────────┤          │ +addQuestion(question: Question): void │  ├────────────────────────────────┤
│                     │          │ +startQuiz(player: Player): void │        │                                │
└─────────────────────┘          └──────────────────────────────────┘        └────────────────────────────────┘
```
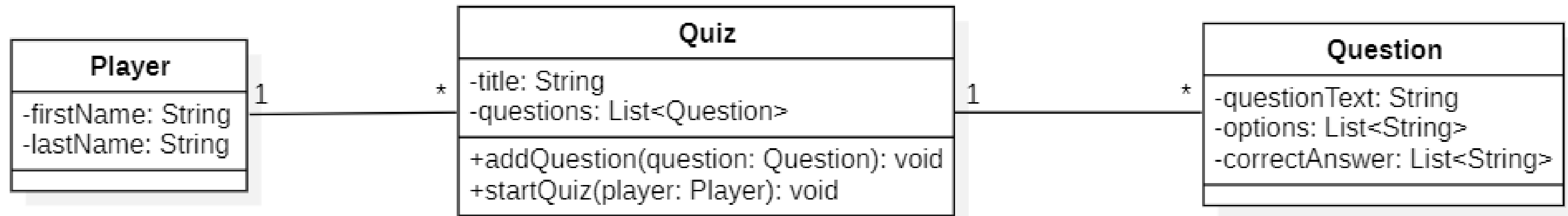
Code

```dart
void addQuestion(Question question) {
  questions.add(question);
}

void startQuiz(Player player) {
  print('\nWelcome ${player.firstName} ${player.lastName}!');
  print('Starting Quiz: $title');
  int score = 0;

  // Loop through each question in the quiz
  for (var question in questions) {
    // Display question and options
    print(question.questionText);
    for (int i = 0; i < question.options.length; i++) {
      print('${i + 1}. ${question.options[i]}');
    }

    String? answer = stdin.readLineSync();
    if (answer != null && answer.isNotEmpty) {
      try {
        // Split the input answer
        List<int> answerIndices =
            answer.split(',').map((a) => int.parse(a.trim()) - 1).toList();
        List<String> selectedAnswers = [];

        // Get selected answers
        for (int index in answerIndices) {
          if (index >= 0 && index < question.options.length) {
            selectedAnswers.add(question.options[index]);
          }
        }
```

3

```
56            // Check for correct answers
57            if (selectedAnswers.isEmpty) {
58              print('No valid options selected. Please try again.\n');
59            } else if (selectedAnswers
60                    .toSet()
61                    .containsAll(question.correctAnswers.toSet()) &&
62                selectedAnswers.length == question.correctAnswers.length) {
63              score++;
64              print('Correct!\n');
65            } else {
66              print(
67                  'Wrong! The correct answers were: ${question.correctAnswers.join(', ')}\n');
68            }
69          } catch (e) {
70            print(
71                'Invalid input. Please enter a number corresponding to the options.\n');
72          }
73        } else {
74          print('You must enter at least one answer.\n');
75        }
76      }
77    print(
78        'Quiz finished! ${player.firstName} ${player.lastName}, your score: $score/${questions.length}');
79  }
```

Output

```
Enter your first name:
Livita
Enter your last name:
Touch

Welcome Livita Touch!
Starting Quiz: IT Knowledge
Which of the following is a programming language?
1. Python
2. HTTP
3. FTP
4. HTML
1
Correct!

Which of the following are types of cybersecurity threats? (Pick all that apply. e.g., "1,2,3")
1. Virus
2. Worm
3. Firewall
4. Trojan
1,2,4
Correct!

Which of the following are concepts of OOP? (Pick all that apply. e.g., "1,2,3")
1. HTML
2. Inheritance
3. Encapsulation
4. Polymorphism
1
Wrong! The correct answers were: Inheritance, Encapsulation, Polymorphism

What is the primary purpose of a firewall in network security?
1. To encrypt data
2. To block unauthorized access
3. To scan for viruses
4. To detect phishing attacks
jsfnf
Invalid input. Please enter a number corresponding to the options.

Quiz finished! Livita Touch, your score is 2/4
```

```
Which of the following is a programming language?
1. Python
2. HTTP
3. FTP
4. HTML
7
No valid options selected. Please try again.

Which of the following are types of cybersecurity threats? (Pick all that apply. e.g., "1,2,3")
1. Virus
2. Worm
3. Firewall
4. Trojan

You must enter at least one answer.
```