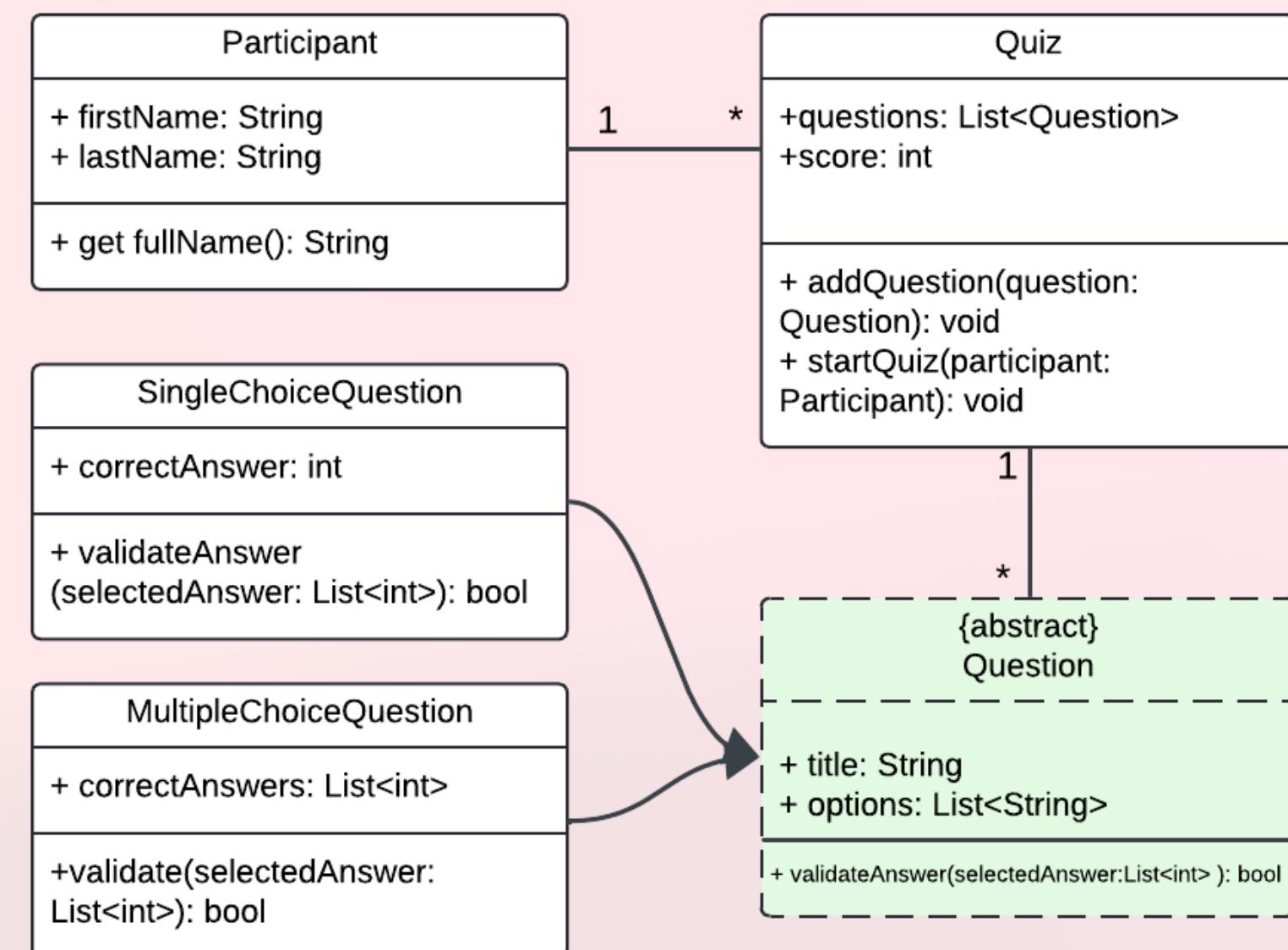


Class Diagram



Code features

```
● ● ●  
1 class SingleChoiceQuestion extends Question{  
2     int correctAnswer;  
3     SingleChoiceQuestion(super.title, super.options, this.correctAnswer);  
4  
5     @override  
6     bool validateAnswer(List<int> selectedAnswer) {  
7         return selectedAnswer.length == 1 && selectedAnswer[0] == correctAnswer;  
8     }  
9 }
```

```
10  
11    class MultipleChoiceQuestion extends Question{  
12        List<int> correctAnswers;  
13        MultipleChoiceQuestion(super.title, super.options, this.correctAnswers);  
14  
15        @override  
16        bool validateAnswer(List<int> selectedAnswer) {  
17            return const ListEquality().equals(selectedAnswer, correctAnswers);  
18            //using ListEquality class to do comparison of answers  
19        }  
20    }
```

Class SingleChoiceQuestion
Class MultipleChoiceQuestion

Code features Class Quiz

```
● ● ●

1 class Quiz {
2     List<Question> questions = [];
3     void addQuestion(Question question) {
4         questions.add(question);
5     }
6
7     void startQuiz(Participant participant) {
8         int score = 0;
9
10        // to loop all questions in list
11        for (var question in questions) {
12            print('\n${question.title}');
13            // loop all options of the question
14            for (int i = 0; i < question.options.length; i++) {
15                print(' ${i + 1}. ${question.options[i]}');
16            }
17
18            // Local variable to store selected answers for each question
19            List<int> selectedAnswers = [];
20        }
21    }
22}
```

Code features Class Quiz

```
20
21     while (true) {
22         try {
23             // If the question is of type SingleChoiceQuestion
24             if (question is SingleChoiceQuestion) {
25                 print('Enter the number of your answer: ');
26                 int answer = int.parse(stdin.readLineSync()!) - 1; // ! to ensure answer isn't empty // -1 to adjust to how we count (start from 0, not 1)
27                 selectedAnswers = [answer];
28             }
29             // If the question is of type MultipleChoiceQuestion
30             else if (question is MultipleChoiceQuestion) {
31                 print('Enter the numbers of all correct answers, separated by space: ');
32                 selectedAnswers = stdin.readLineSync()!
33                     .split(' ')
34                     // need to convert to int; to easily compare answers
35                     .map((str) => int.parse(str) - 1) // map is to transform lists
36                     // parse; transform str to int, without modifying the original list
37                     .toList();
38                 // then create a list of string answers
39             }
40             break;
41         } catch (e) {
42             print('Invalid input. Please enter numbers corresponding to the options.\n');
43         }
44     }
45 }
```

OUTPUT

```
In the function signature Score(a, [b], {required f});, which of the following represents a positional argument? [ Choose one ]
1. a
2. b
3. f
Enter the number of your answer:
a
Invalid input. Please enter numbers corresponding to the options.

Enter the number of your answer:
1
Correct!
```

Code features Class Quiz

```
45
46     // Validate answer and provide feedback
47     if (question.validateAnswer(selectedAnswers)) {
48         score++;
49         print('Correct!\n');
50     } else {
51         if (question is SingleChoiceQuestion) {
52             print('Wrong! The correct answer was: ${question.options[question.correctAnswer]}\n');
53         } else if (question is MultipleChoiceQuestion) {
54             print('Wrong! The correct answers were: ${question.correctAnswers.map((i) => question.options[i]).join(', ')}\n');
55         }
56     }
57 }
58
59     print('\n${participant.toString()}, your final score is $score / ${questions.length}.');
60 }
61 }
```

OUTPUT

```
In the function signature Score(a, [b], {required f});, which of the following represents an optional positional argument? [ Choose one ]
1. a
2. b
3. f
Enter the number of your answer:
1
Wrong! The correct answer was: b
```

Demo

----- Dart Quiz -----

Enter your first name:

Soupor

Enter your last name:

Sovan

In the function signature Score(a, [b], {required f});, which of the following represents a positional argument? [Choose one]

- 1. a
- 2. b
- 3. f

Enter the number of your answer:

a

Invalid input. Please enter numbers corresponding to the options.

Enter the number of your answer:

1

Correct!

In the function signature Score(a, [b], {required f});, which of the following represents an optional positional argument? [Choose one]

- 1. a
- 2. b
- 3. f

Enter the number of your answer:

3

Wrong! The correct answer was: b

In the function signature Score(a, [b=1], {required f=0});, which of the following have default values? [Choose two]

- 1. a
- 2. b
- 3. f

Enter the numbers of all correct answers, separated by space:

2 3

Correct!

Soupor Sovan, your final score is 2 / 3.