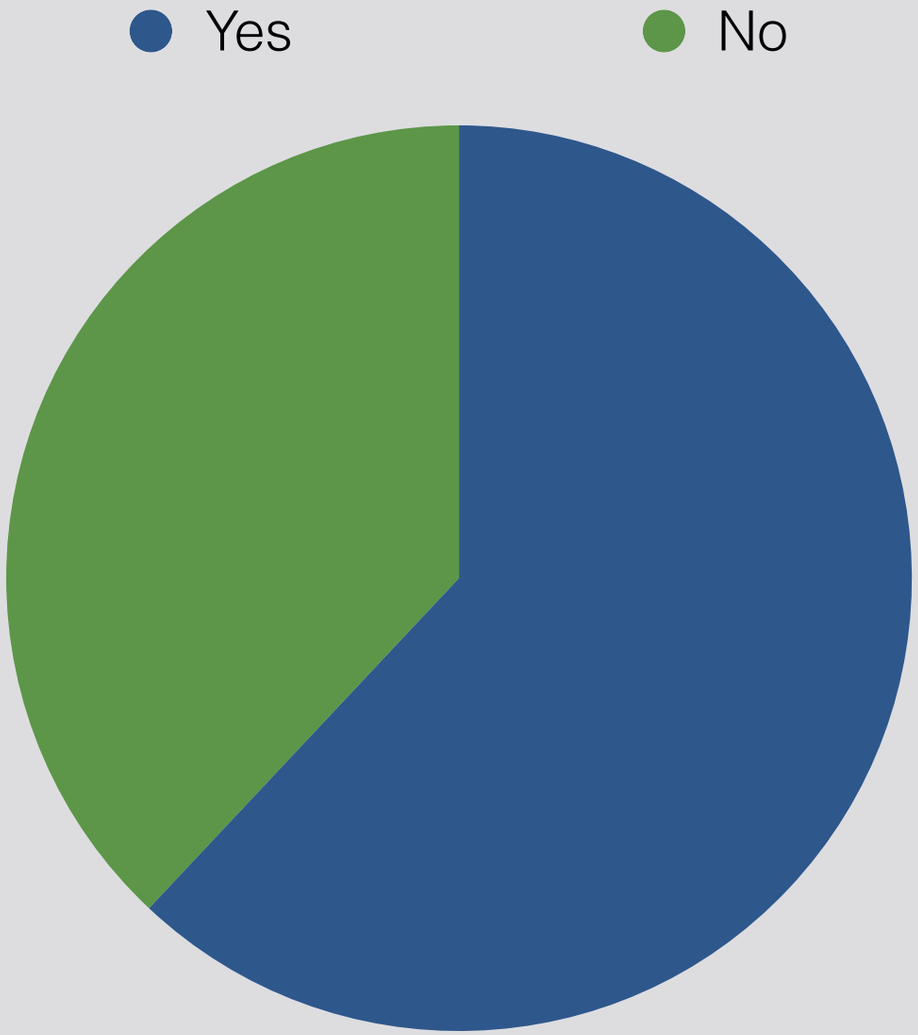
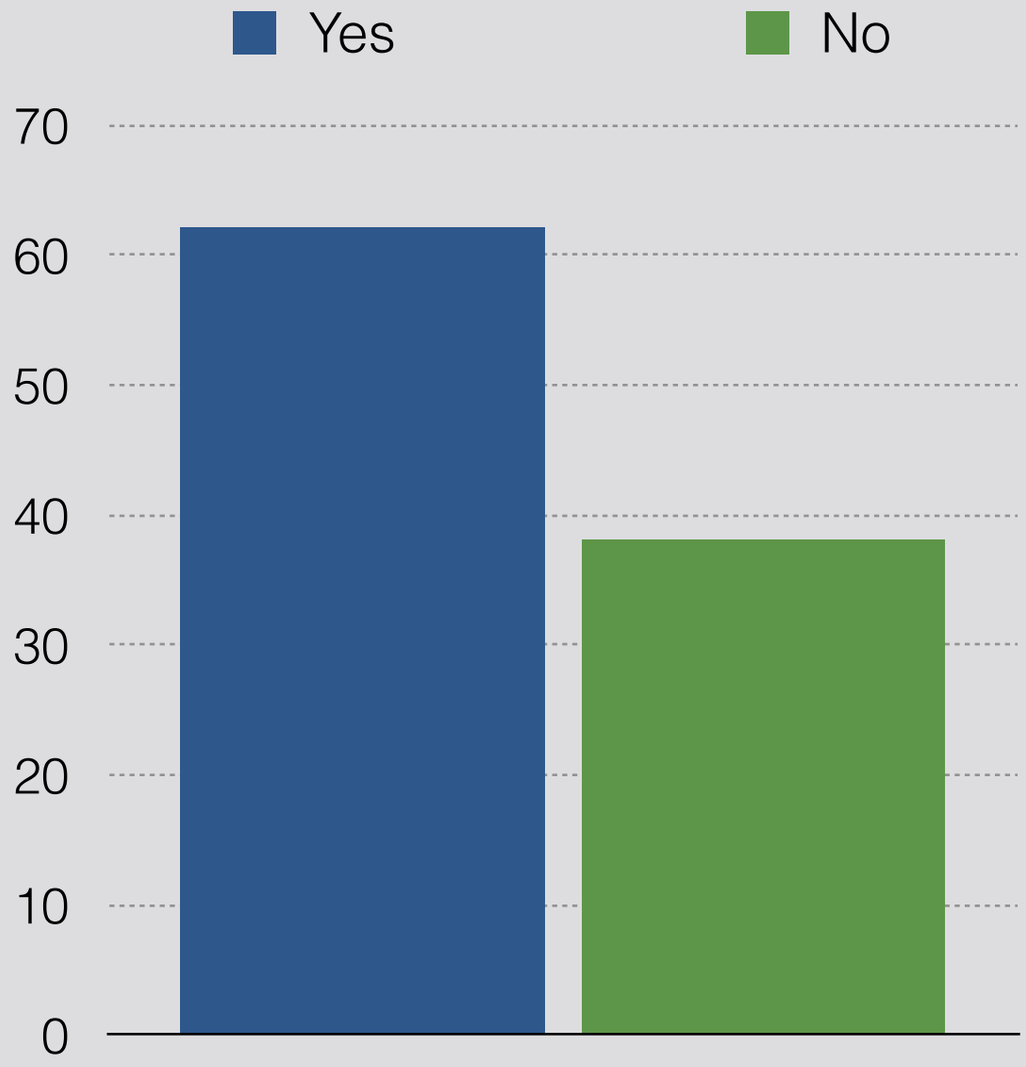
Introduction

We are designing a program that counts responses received from telephone survey conducted by an online television show.

Each time a response is received, several graphics are updated and displayed in various parts of the screen.


Yes
No


Yes
No
70
60
50
40
30
20
10
0

What to Do

Identify areas for improvement in the design and redesign it using one or more design patterns.

From this point on, the Question class should not need modification to accommodate future changes.

Subsequent Modifications

The previous code will now be used to ask questions in different TV programs. Below are the requirements for how each program should display questions.

Add each modification in the main method with the necessary configuration, indicating its number and what you have changed.

Program 1

When a vote is received, a **status bar** should also be displayed. It shows a text line indicating the vote count for each option.

Number of YES votes = <x>. Number of NO votes = <y>

Program 2

The bar chart **should not be displayed**, but the pie chart and status line should still be shown.

Program 3

Instead of displaying the pie chart with every vote, it should only be drawn **starting from the third vote** (and from then on with each vote).

The status line should continue to be displayed with each vote.

Program 4

The bar chart should be displayed again, but **only every third vote** (i.e., on the first, fourth, seventh votes, etc.). The other charts should continue to be displayed as specified in the previous point.

Program 5

The status bar should start being displayed from the fourth vote and only with every second vote after that (i.e., on the fourth, sixth, eighth votes, etc.). The other charts and widgets should continue as specified in the previous point.

Note

Each requirement builds upon the previous one, so **anything not explicitly mentioned remains the same as in previous requirements.**