Practical 9: Boolean Expressions and Selection

Task 1

The undergraduate classification system at Keele University (and indeed most other universities) is as follows:

Fail: 0 to 39
Third class: 40 to 49
Second class, division 2 (or 2.2): 50 to 59
Second class, division 1 (or 2.1): 60 to 69
First class: 70 to 100

In all ranges above the limits of the ranges are included in the class. For example 49 is a third class mark, 50 is classed as a 2.2, 39 is a fail etc.

Write a Java program that takes a computed final course mark from the user and reports back the classification corresponding to that mark.

Test that your program works properly for all mark ranges and all borderline cases.

Task 2

Make your program "watertight" against any possible exceptions or invalid input. If any of these happen during run-time you should display an appropriate message to the user and allow the program to terminate under your control.

Task 3

Change your program so that if the user enters invalid input they are informed of the problem (as in Task 2 above) but instead of the program terminating, they are asked again for valid input.

Here is what an example output could look like for this final task:

```
Enter course mark (0-100): qwerty
Bad input data type.
Enter course mark (0-100): -12
Input out of [0, 100] range!
Enter course mark (0-100): 110
Input out of [0, 100] range!
Enter course mark (0-100): 67
Class is 2.1
```