# 10. Exercises on Rule of Three, Inheritance and Polymorphism

Write C++ code for solving the tasks on the following pages.

Code should compile under the C++03 or the C++11 standard.

Submit your solutions here: <https://judge.softuni.bg/Contests/1290/10-Exercises-on-Rule-of-Three-Inheritance-and-Polymorphism> (select “Compete” when prompted)

Any code files that are part of the task are provided under the folder **Skeleton**.

Please follow the exact instructions on uploading the solutions for each task.

NOTE: the Judge system treats each .cpp file as a compilation unit, compiles each such file and links them together to create the final executable, which is checked against the tests.

# Task 3 – Extractor

You are given code that reads a line from the console and extracts certain items from it. The provided code uses an Extractor class that selects the items to extract. There are 3 types of extractors:

* digits – extracts each digit from the string as a separate item
* numbers – extracts sequences of digits
* quotes – extracts sequences of symbols between two quote (") marks

Your task is to implement the necessary Extractor classes and initialization logic.

You should submit only the file(s) you created. The Judge system has the other files and will compile them, along with your file(s), in the same directory.

### Restrictions

All quotes will be “closed”, i.e. there will always be an even number of " symbols in the input.

There will be no “negative numbers” to extract.

### Examples

|  |  |
| --- | --- |
| Example Input | Expected Output |
| hello 123 "bye" 4 bye  digits | 1  2  3  4 |
| hello 123 "bye" 4 bye  numbers | 123  4 |
| hello 123 "bye" 4 bye  quotes | bye |