

## Exercise 9 (Binary search tree using STL, 1p)

Implement a phone book application using STL binary tree (e.g. map container). It should be possible to add, remove and list phone book entries. Entries are stored to the binary tree so that it is efficient to search, add and remove entries from the container.

Hint: You can use `getline()` function to read a line from the input, and then create a function `split()`<sup>1</sup> to split the line to separate words<sup>2</sup>. Then it is quite easy to check what was the command and (possible) parameters for the command.

Here is an example of the program output:

Phonebook application

```
add Victor Kulikov 123456
add Madonna 10
list
Content of the phone book:
Madonna: 10
Victor Kulikov: 123456
add Isaskar Keturi 900900
add Heidi Klum 100
erase Madonna
Unrecognized command ERASE
delete Madonnaz
Name Madonnaz does not found
delete Madonna
list
Content of the phone book:
Heidi Klum: 100
Isaskar Keturi: 900900
Victor Kulikov: 123456
exit
```

---

<sup>1</sup> Use `find()` function to find the delimiter and then `substr()` to grab the string between delimiters and push it to the result vector.

<sup>2</sup> Another option is to first convert a given string to `stringstream` and then converting that to `istream_iterator<string>` which can be given to `copy()` algorithm which copies it to the vector using `back_inserter`. This works because `istreambuf_iterator` uses whitespace to separate strings (`istreambuf_iterator` does not do this).