

The abort() function

The abort() function is a system-call that aborts the execution of your program. Use it to handle non-expected behavior like out-of bounds exceptions :

```
1  #include <iostream>
2
3  int main(int argc, char **argv) {
4      int x;
5      cout << "Enter a non-null value : ";
6      cin >> x;
7      if(x == 0) {
8          cerr << "Null value!\n";
9          abort();
10     }
11     cout << 1/x << '\n';
12 }
```

The execution is the following :

```
1  Enter a non-null value : 0
2  Null value!
3  Aborted
```

1 Object-Oriented programming

1.1 Intro

The “object approach”, which is the fundamental idea in the conception of C++ programs, consists in building the programs as an interaction between objects :

1. For all part of the program that use a given object, it is defined by the **member functions** you can use on it ;
2. you can take an existing object and add data inside and methods to manipulate it, this is call inheritance.

The gains of such an approach are :

1. Modularity : each object has a clear semantic (**Employer** or **DrawingDevice**), a clear set of methods (**getSalary()** , **getAge()**, or **drawLine()** , **drawCircle()** ;
2. Less bugs : the data are accessed through the methods and you can use them only the way to object's creator wants you to ;
3. Re-use : you can extend an existing object, or you can build a new one which could be use in place of the first one, as long as it has all the methods required (for example the **Employer** could be either the CEO or a worker, both of them having the required methods but different data associated to them. **DrawingDevice** could either be a window, a printer, or anything else).

1.2 Vocabulary

- A **class** is the definition of a data structure and the associated operations that can be done on it ;
- an **object** (equivalent to a variable) is an **instanciation** of the class, i.e. an existing set of data build upon the model described by the class ;
- a **data field** is one of the variable internal to the object containing a piece of data ;
- a **member function** is a special function associated to a class.