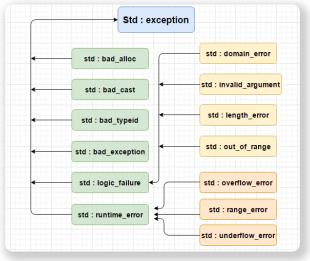
What Should You Throw?

Unlike Java, in C++, it is legal to throw any kind of object, not just members of an exception class hierarchy. So, in C++, all of these are legal:

```
if (len < 3) throw "Too short"s; // throw a string
if (a > b) throw 42;     // throw an integer error code
if (b < c) throw 3.5;    // throw a double
```

The question is, though, what **should** `stoi()` throw when an error occurs? The library documentation says that the function throws an `invalid_argument` exception.



The header file, `<stdexcept>` defines this and several other classes that let us specify what specific error triggered the exception, similar to the `Exception` class hierarchy from the Java Class Libraries. (Click the image to enlarge it.)

The `invalid_argument` exception is ideal because

- its constructor takes a `string` argument, useful for error messages.
- it has a member function `what()` that returns what the error was

Include `<stdexcept>`, and rewrite the `throw` statement like this:

```
throw invalid_argument(str + " not an int.");
```