2. **Exceptions**

```cpp
#include <iostream>
using namespace std;

int main() {
    try {
        throw 20;
    } catch (int e) {
        cerr << "Caught!" << endl;
        return 0;
    }
}
```

C++ std lib provides an exception base class.

```cpp
#include <exception>

class my_exception : public exception {
    virtual const char* what() const throw() {
        return "my exception";
    }

    // Override what method with appropriate description.
}
```

- `passing a pointer by reference`:
  
  ```cpp
  void foo(int * & x) {

  void bar() {
    int & y;
    foo(y);
  }
  ```

- Do this when you want to modify the pointer, not the thing that it is pointing to.

- Similar to passing a pointer to a pointer, but one less level of indirection for pass by reference semantics.

**C++ Topics**

- Valgrind - memory leak checker
- Doxygen - documentation
- gdb orlldb - debugger
- File name and class name don't match, use grep.
- Passing pointers by reference
- Exceptions