V505 – Exceptions

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What is the difference between std::runtime_error and std::logic_error? You may have to look this up in the documentation.

A `std::runtime_error` is presumably detectable only during the execution of the program, and the error may be outside the scope of the program.

A `std::logic_error` indicates faulty logic, presumably on the part of the developer. A `logic_error` is typically something that a developer can fix.

Come up with two useful messages you would use to describe a runtime error and a logic error

```
try {
    foo(x);
} catch (const std::runtime_error &e) {
    cout << "Received a runtime_error: " << e.what() << endl;
}
```

```
try {
    bar(x);
} catch (const std::logic_error &e) {
    cout << "Received a logic_error: " << e.what() << endl;
}
```

Do pointers get deleted when an exception is thrown?

No. This is why we often prefer to use a `vector` object or similar, as these C++ tools may handle the destruction of a pointer in these scenarios.

How do you avoid getting a std::bad_alloc while using new?

```
int* iptr = new(std::nothrow) int[1000000000ul];

if (iptr == nullptr) {
    cout << "Allocation returned nullptr" << endl;
}
```