Custom Exception Class Exercises

Custom Exception Class

- When we write our own exception class, why is it better to derive from a subclass of std::exception hierarchy than to write a completely new class?

- Why do we not derive directly from std::exception?

Custom Exception Class Requirements

- When we write our own exception class, which member functions should we consider implementing?

invalid_student_grade Members

- In the invalid_student_grade class, why did we not provide any data members?

- Why did we not implement a copy constructor or destructor for the class?

invalid_student_grade Example

- Implement a suitable invalid_student_grade exception class
- Write a program which reads a number from standard input and stores it in a StudentGrade object
- If an invalid grade is entered, an invalid_student_grade exception is thrown
- Your program should handle any exceptions which are thrown during this process
- Test your program, entering both valid and invalid grades
- (The source code for the StudentGrade classes is provided on the next page)

StudentGrade Class Definition

```cpp
class StudentGrade {
    int grade;
  public:
    StudentGrade(int grade) : grade(grade) {
        if (grade < 0)
            throw invalid_student_grade("Invalid grade");
        if (grade > 100)
            throw invalid_student_grade();
    }
};
```