**You said:**

Source.cpp

File

Analyze this file and make these changes "• Implement better error handling to catch and log exceptions. • Add logging for better debugging and tracing of errors. • Enhance comments and documentation for clarity and ease of maintenance. "

**ChatGPT said:**

I'll update the file to:

1. **Improve error handling** by properly detecting and handling overflows/underflows.
2. **Add logging** for better debugging and tracing.
3. **Enhance comments and documentation** for clarity.

Here's the updated version:

Numeric Overflows

**Changes made:**

* **Error Handling:** Used std::overflow\_error and std::underflow\_error exceptions to handle numeric overflows and underflows properly.
* **Logging:** Added error messages to std::cerr to log exceptions.
* **Enhanced Documentation:** Improved function comments for clarity and maintainability.

Let me know if you need further refinements! 🚀

**You said:**

Use that file and answer these questions "Briefly describe the artifact. What is it? When was it created? Justify the inclusion of the artifact in your ePortfolio. Why did you select this item? What specific components of the artifact showcase your skills and abilities in software development? How was the artifact improved? Did you meet the course outcomes you planned to meet with this enhancement in Module One? Do you have any updates to your outcome-coverage plans? Reflect on the process of enhancing and modifying the artifact. What did you learn as you were creating it and improving it? What challenges did you face?"

**ChatGPT said:**

Here’s a draft for your ePortfolio reflection on the artifact:

Artifact Reflection

Answer in chat instead

Let me know if you need any refinements or additional details! 🚀

Top of Form

Reason

Bottom of Form

ChatGPT can make mistakes. Check important info.

?

**Artifact Reflection**



**Artifact Description:** The artifact is a C++ program designed to test and handle numeric overflows and underflows. It includes functions to perform arithmetic operations while preventing errors caused by exceeding the limits of data types. This program was originally created as part of a course on software development and numeric computations.

**Justification for Inclusion:** This artifact was selected for inclusion in my ePortfolio because it demonstrates my ability to write efficient and safe code while implementing error handling and logging mechanisms. The program showcases my proficiency in C++ template programming, error handling with exceptions, and debugging techniques.

**Showcased Skills and Improvements:** Key components of the artifact that highlight my skills include:

* **Robust Error Handling:** Implementing std::overflow\_error and std::underflow\_error to catch and handle numeric overflows and underflows.
* **Logging for Debugging:** Using std::cerr for improved error tracing and debugging.
* **Enhanced Documentation:** Improved function descriptions and inline comments for better readability and maintainability.
* **Code Optimization:** Ensuring that arithmetic operations check for safe execution before proceeding, preventing unexpected behavior.

**Meeting Course Outcomes:** With these enhancements, I successfully met the course outcomes planned in Module One. The artifact reflects my ability to write maintainable, error-resistant code and apply best practices in software development. These updates reinforce my knowledge of defensive programming techniques and exception handling.

**Reflection on the Enhancement Process:** Enhancing this artifact allowed me to refine my approach to handling errors in numerical computations. I learned the importance of proactively preventing overflows and underflows and the value of logging in debugging. One challenge I faced was ensuring that my exception handling did not introduce unintended behavior, requiring careful testing and validation. This experience has strengthened my problem-solving skills and my ability to write more reliable software.

Overall, this artifact represents my growth as a developer and my ability to improve existing codebases to meet industry standards.

Write something...**Error! Filename not specified.**

Ask ChatGPT

ChatGPT says: Let me know if you need any refinements or additional details! 🚀