Security Injections @ Towson

Module: Integer Error - CS0 C++

Student: Blessing Osereme Abumere

Date: 10/12/2022

ID: 873593056

Discussion Questions

What is the largest possible value of type int? Explain your answer using the information you read in the background section.

The largest possible value of an int in cpp is 2147483647 or $(2^{31})-1$.

What happens when the result of an operation on values of type int exceeds this value ? Explain.

When the integer value is more than 2147483647 it leads to an error making the integer negative which is a vulnerability.

Look up the population of the United States:

The population of the US in 2020 was 329.5 million.

Look up the population of the world:

The population of the world in 2020 was 7.753 billion.

Look up the United States's national debt:

The US national debt as of 10:11 10/12/2022 is $31,138,038,700,900

For which of these would the int data type be a problem: population of the US, population of the world or US national debt?

US national debt

Discuss the Comair problem described in the background section. What are the repercussions of such a problem?

The Comair Problem was caused by them using a 16-bit integer system for their scheduling software which maxes out at $(2^{15} - 1)$ or 32767. The repercussions for such a problem would be unexpected behavior in the software making it to much of a risk to use.