**Advanced Programming Assignment   
  
Hackerrank Questions**

**Hackerrank username: Innervate316 https://www.hackerrank.com/Innervate316**

**Points per Domain:**

* **C++**

**Points: 265**

* **Algorithm (C++ Solutions)**

**Points: 146**

**Total of 411**

The aim of this assignment was to obtain at least 400 points through Hackerrank questions. Hackerrank is a website which allows users to write code in their preferred language to solve problems and compete against other programmers.

As I am not as strong with C++, I decided to do most of the questions entailed in Hackerrank in C++. I also did Algorithm questions in C++, as the logic behind each question and such would generally require logical thinking and execution through C++ code.

**C++ Domain**

The C++ domain entailed consists of subdomains which, other than the introduction domain, also entail Strings, Classes, STL and Inheritance.

Introduction consists of the general ‘dummy’ tests, including testing basic data types, conditional statements, input and output, functions and the likes. Strings subdomain highlights the data type string and its usage and Classes subdomain highlights the foundation of object orientated programming, which is one of the most important domains, which also details template usage and such. The STL subdomain focuses on STL containers, classes and its relevant functions whilst inheritance focuses on linkage more.

This general domain allowed me to not only practice general C++ techniques, but it also provided me with general focus on areas I was initially unfamiliar with. It also allowed me to see potentially different methods of integrating code through interesting tricks and methods from my peers and also online.

**Algorithms**

The general algorithms domain focused on logical thinking, and included subdomains from simple warm ups to more complex ‘bit manipulation’. I personally did more in the Warmup and Implementation subdomains. This domain allowed users to write their solutions not only limited to C++, but also a wide arrange of other languages provided you selected the language editor during the solution writeup.

The warm up section focused primarily on simple maths problems, such as adding array sums and utilizing matrices manipulation. The implementation subdomain handled more complex math and numbers theory, which required a deeper understanding and research for each question.

I found the algorithms domain pretty complex for me personally, as I am not that strong in terms of maths theories and stuff, however, I was still able to follow through and do most of the questions, from trial and error to generally applying logical thinking to solve most of the questions.

I found that the general community on Hackerrank was also very helpful and friendly in terms of providing hints where necessary, and generally replied very fast to any potential questions I had in the discussion thread. All in all, as much as I would’ve liked to create a game for this assignment, I felt the hackerrank questions improved my C++ programming skills as well as logic thinking.