

Problem Set 03 - Header Files & Namespaces

Create the header file named `Prop.h`, define each function in their respective namespace, and then, include the header file and test its functions in the accompanying `cpp` file.

Functions:

1. In the namespace *PropertyA*, write a bool function named `Property()` that takes an int array parameter and an int parameter. Given that the int parameter represents the size of the array parameter, the function returns true if three consecutive elements of the array parameter are the same; otherwise, it returns false.
2. In the namespace *PropertyB*, write a bool function named `Property()` that takes an int array parameter and an int parameter. Given that the int parameter represents the size of the array parameter, the function returns true if any value is repeated at least three times in the array parameter; otherwise, it returns false.
3. In the namespace *PropertyC*, write a bool function named `Property()` that takes an int array parameter and an int parameter. Given that the int parameter represents the size of the array parameter, the function returns true if the array parameter is monotonic; otherwise, it returns false. A collection is monotonic if for all indices $i < j$, then is either $f(i) \leq f(j)$ or $f(i) \geq f(j)$.