## Exercise 04 - Header Files

Create the header file named `Prop.h`, define each problem in it. Afterward, test each function defined.

1. In the namespace *PropertyA*, define a Boolean function named `Property()` that takes an integer array parameter and an integer parameter. Given that the integer parameter represents the size of the array parameter, it returns true if three consecutive elements of the array parameter are the same; otherwise, it returns false.

2. In the namespace *PropertyB*, define a Boolean function named `Property()` that takes an integer array parameter and an integer parameter. Given that the integer parameter represents the size of the array parameter, it returns true if any value is repeated at least three times in the array parameter; otherwise, it returns false.

3. In the namespace *PropertyC*, define a Boolean function named `Property()` that takes an integer array parameter and an integer parameter. Given that the integer parameter represents the size of the array parameter, it returns true if the array parameter is monotonic; otherwise, it returns false.

   **Note**: A collection is monotonic if for all indices $i < j$, either $f(i) \leq f(j)$ or $f(i) \geq f(j)$.

4. In the namespace *PropertyD*, define a Boolean function named `Property()` that takes a fstream reference parameter. If the parameter is an open file, it displays the file's content and returns true; otherwise, it returns false.