Problem Set 6

1. Write a function template `mySwap()` that swaps two variables of any data type (int, double, char, string).
2. Write a function template `displayArray()` that prints the elements of an array of any.
3. Write a function template `add()` that takes different type parameters and returns the sum. Use `double` as the default template type if no type is specified.
4. Write a class template `Box<T>` that can hold a single value of any type. Provide `setValue()` and `getValue()` methods.
5. Create a class template `Calculator<T1, T2>` that stores two values (possibly different types) and provides functions for addition and multiplication.
6. Create a namespace `School` that stores:
   - an integer variable `totalStudents`
   - a function `showStudents()` to print it.
   - Access both inside `main()`
7. Create two namespaces `Physics` and `Chemistry`, each with a variable `labName`.
8. Write a namespace `Greeting` with a function `sayHello()`. Use `using directives` inside and outside `main()`.
9. Create a namespace `University` which contains another namespace `Department`. Inside `Department`, define a class `Student` with a method `display()`. Access it from `main()`.
10. Declare a class `Person` normally. Define its member function `showInfo()` inside a namespace `HR`.