

WIA1002 Data Structure

Tutorial 2: Introduction to Data Structure

1. Create a generic method that accepts two parameters. The method will display the sum of the parameters if the parameters are integer and double. The method will compare whether the parameters are equal if the parameters are String. (Assume that both parameters are from the same type). Example, output.

```
The parameters value are : Hello and World
The string is not equal
The parameters value are : 12.4 and 64.3
The sum of the double is 76.7
The parameters value are : 20 and 35
The sum of the integer is 55
The parameters value are : Welcome and Welcome
The string is equal
```

2. Create a generic class SpecialEncoding. The class will display the command based on the type of input. Example of Tester Class.

Integer	0	1	2	3	4	5
Character	C	D	I	P	R	V
Command	Copy	Delete	Insert	Print	Rename	Paste

```
public static void main(String[] args) {
    Integer[] num = {3,2,5, 0, 1};
    Character[] letter = {'P', 'I', 'V', 'C', 'D'};
    SpecialEncoding<Integer> a = new SpecialEncoding<>(num);
    SpecialEncoding<Character> b = new SpecialEncoding<>(letter);
    System.out.println(a.toString());
    System.out.println(b.toString());
}
```

```
The Code is 3 2 5 0 1
The Command is Print Insert Paste Copy Delete
The Code is P I V C D
The Command is Print Insert Paste Copy Delete
```

3. Create a generic static method called maximum which consists of three parameters that used to get the maximum of the three values. The generic type extends the Comparable interface. Example output:

```
The maximum value of 42 15 58 is 58
The maximum value of 12.45 41.28 19.82 is 41.28
```

4. Create an ADT Dice which contains the specifications below:
 - A method that rolls the dice for a number of times.
 - A toString method that returns the value of each dice rolled and the total value.

Implement the ADT Dice using ArrayDice and LinkedListDice. Example output:

```
Array Implementation: Roll 5 time(s)
5 1 3 2 5
Total is 16
Array Implementation: Roll 4 time(s)
2 2 3 2
Total is 9
Linked List Implementation: Roll 3 time(s)
5 1 1
Total is 7
Linked List Implementation: Roll 4 time(s)
2 5 2 1
Total is 10
```