<u>**Assignments For Java Students (Beginners)**</u>

➢ **Make calculators using Switch statement and use different methods for different arithmetic tasks very neat and clean code including comments of each new logic**.

➢ **Make software for any departmental store in CMD/Terminal.**
Steps:

   ➢ Store more than 50 price and name of household item in memory(make Variable):
   Eg: Double vegetables_oil=50;

   String[] vegetable_oil_types={"Soyabean","Mustard","Vatmas"}

   ➢ Make a method(function) to calculate the price
   ➢ Program should calculate total price of shopping list

➢ **Write a function that takes an array of integers as an argument and returns a value based on the sums of the even and odd numbers in the array. Let X = the sum of the odd numbers in the array and let Y = the sum of the even numbers. The function should return X - Y**

The signature of the function is:
int f(int[ ] a)
      Examples

if input array is	return
{1}	1
{1, 2}	-1
{1, 2, 3}	2
{1, 2, 3, 4}	-2
{3, 3, 4, 4}	-2
{3, 2, 3, 4}	0
{4, 1, 2, 3}	-2
{1, 1}	2
{}	0

➢ Write a function that accepts an array of non-negative integers and returns the second largest integer in the array. Return -1 if there is no second largest.
The signature of the function is

int f(int[ ] a)

Examples:

if the input array is	return
{1, 2, 3, 4}	3
{{4, 1, 2, 3}}	3
{1, 1, 2, 2}	1
{1, 1}	-1
{1}	-1
{}	-1

Sample Answer:

```
public static void main()
  {
    a2(new int[] {1});
    a2(new int[] {1, 2});
    a2(new int[] {1, 2, 3});
    a2(new int[] {1, 2, 3, 4});
    a2(new int[] {3, 3, 4, 4});
    a2(new int[] {3, 2, 3, 4});
    a2(new int[] {4, 1, 2, 3});
    a2(new int[] {1, 1});
    a2(new int[] {});
  }


  static int a2(int[] a)
  {
    int sumEven = 0;
    int sumOdd = 0;

    for (int i=0; i<a.length; i++)
    {
      if (a[i]%2 == 0)
        sumEven += a[i];
      else
        sumOdd += a[i]; return sumOdd - sumEven;
  }
```

➢ **Write a function that accepts a character array, a zero-based start position and a length. It should return a character array containing *length* characters starting with the *start* character of the input array. The function should do error checking on the start position and the length and return null if the either value is not legal**.

The function signature is:
char[ ] f(char[ ] a, int start, int len)

Examples

if input parameters are	return
{'a', 'b', 'c'}, 0, 4	null
{'a', 'b', 'c'}, 0, 3	{'a', 'b', 'c'}
{'a', 'b', 'c'}, 0, 2	{'a', 'b'}
{'a', 'b', 'c'}, 0, 1	{'a'}
{'a', 'b', 'c'}, 1, 3	null
{'a', 'b', 'c'}, 1, 2	{'b', 'c'}
{'a', 'b', 'c'}, 1, 1	{'b'}
{'a', 'b', 'c'}, 2, 2	null
{'a', 'b', 'c'}, 2, 1	{'c'}
{'a', 'b', 'c'}, 3, 1	null
{'a', 'b', 'c'}, 1, 0	{}
{'a', 'b', 'c'}, -1, 2	null
{'a', 'b', 'c'}, -1, -2	null
{}, 0, 1	null