

## Assignments For Java Students (Beginners)

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

### Examples Questions:

- **WAP** to check a odd number.
- **wap to check a even number.**
- Wap to check a divosor number.
- Wap to check a prime number.
- Write a program to print following patterns in Cmd/Terminal

```
*           * * * * *           * * * * *
* *         * * * * *           * * * *
* * *       * * * * *           * * *
* * * *     * * * * *           * *
* * * * *   * * * * *           *
```

```
1           1           2
2 2         2 3         3 5
3 3 3       4 5 6       7 11 13
4 4 4 4     7 8 9 10    17 19 23 29
5 5 5 5 5   11 12 13 14
```

```
1           5 4 3 2 1 2 3 4 5   1 1 1 1 1
2 1 2       4 3 2 1 2 3 4       1 1 1 1 1
3 2 1 2 3   3 2 1 2 3         1 1 1 0 1
4 3 2 1 2 3 4 2 1 2         1 1 1 1 1
5 4 3 2 1 2 3 4 5
```

- **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