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ASSIGNMENT - 3

1] Pattern

```
import java.util.Scanner;  
public class pattern {  
    Scanner input = new Scanner(System.in);  
    char c = input.next().charAt(0);  
    int n = input.nextInt();  
    for (int i = 1; i <= n; i++) {  
        for (int j = 1; j <= i; j++) {  
            System.out.print(c);  
        }  
        System.out.println();  
    }  
}
```

2] Leap Year or Not

```
import java.util.Scanner;  
public class AK {  
    public static void main(String[] args) {  
        Scanner input = new Scanner(System.in)
```

```
System.out.println("Year is " + year);
String d = year.substring(2);
int num = Integer.parseInt(d);
if (num % 400 == 0 || num % 4 == 0 && num % 100 != 0) {
    System.out.println("Year is leap year");
} else {
    System.out.println("Year is not leap year");
}

3]
import java.util.Scanner;
public class Avg {
    Scanner input = new Scanner(System.in);
    int n = input.nextInt();
    int factors = 0;
    for (int i = 1; i <= n; i++) {
        if (n % i == 0) {
            factors++;
        }
    }
    System.out.println("Number of factors is " + factors);
}
```

4] Perfect Number:

```
import java.util.Scanner;  
public class perfect {  
    public static void main(String[] args) {  
        Scanner input = new Scanner(System.in);  
        int n = input.nextInt();  
        int factors = 0; // Initialize factors to 0  
        for (int i = 1; i < n / 2 + 1; i++) {  
            if (n % i == 0) {  
                factors += i; // Add factor to total  
            }  
        }  
        if (n == factors) {  
            System.out.println("perfect");  
        }  
    }  
}
```

5] Vowels:

```
import java.util.Scanner;  
public class asf {  
    Scanner input = new Scanner(System.in);  
    String name = input.nextInt();  
    int len = name.length();  
    char arr[] = new char [len];
```

```

int vowel = 0;
for (int i=0; i<len; i++) {
    ac[i] = name.charAt(i);
    if (ac[i] >= 'a' & ac[i] <= 'z' || ac[i] >= 'A' & ac[i] <= 'Z') {
        if (ac[i] == 'A' || ac[i] == 'E' || ac[i] == 'I' || ac[i] == 'O'
            || ac[i] == 'U') vowel++;
    }
}
System.out.println(vowel);

```

6] Square pattern :

```

import java.util.Scanner;
public class avs {
    Scanner input = new Scanner(System.in);
    int n = 5;
    char C = input.next().charAt(0);
    for (int i=0; i<n; i++) {

```

```
for (int j = 1; j <= n; j++) {  
    if (i == 1 || j == 1 || i == n || j == n)  
        System.out.println(c + " ");  
    else  
        System.out.print(" ");  
    System.out.println();  
}
```

7] Fibonacci Series:

```
import java.util.Scanner;  
public class any  
    Scanner input = new Scanner(System.in);  
    int n = input.nextInt();  
    int a1 = 0, a2 = 1;  
    for (int i = 0; i < n; i++) {  
        System.out.println(a1 + " ");  
        int a3 = a1 + a2;  
        a1 = a2;  
        a2 = a3;  
    }
```

8] Number pattern:

```
import java.util.Scanner;
public class pattern {
    Scanner input = new Scanner(System.in);
    int n = input.nextInt();
    for (int i = 1; i <= n; i++) {
        for (int j = 1; j <= i; j++) {
            System.out.println(j);
        }
        System.out.println();
    }
}
```

(asterisks - *)

9] Decimal number:

```
import java.util.Scanner;
public class Decimal {
    Scanner input = new Scanner (System.in);
    float n = input.nextInt();
    System.out.println ("Square" + (n*n));
    System.out.println ("Cube :" + (n*n*n));
}
```

10] perfect number:

```
import java.util.Scanner;  
public class pattern {  
  
    Scanner input = new Scanner (System.in);  
    int n = input.nextInt();  
    int factor = 0;  
    for (int i=1; i<n; i++) {  
        if (n % i == 0)  
            factors = factors + i;  
    }  
    if (n == factors)  
        System.out.println (" ");  
}
```