~Assignment - 1 192211360 Date :- 30/12/23

Easy programs (1-15)

1. Reverse a word

```
public class Reversestring for Loop example{
    public static void main (string[] args){
        String input = "Temple";
        String reversed = " ";
        for(int i=input.length()-1; i>=0; i--){
         reversed += input.charAt(i);
        }
        system.out.println("Original string:"+input);
        system.out.println("Reversed string:"+reversed);
    }
}
```

2. Username is valid or not

```
import java.util.scanner;
public class user_Authentication
{
  public static void main (string args[])
    {
      string username, password;
      scanner s = new scanner (system.in);
      system.out.print("Enter username:");
      username = s.nextline();
      system.out.print("Enter password:");
      password = s.nextline();
      if(username.equals("user") && password.equals
                ("user"))
      {
        system.out.println("Authenication successful");
```

```
        }
        else
        {
        system.out.println("Authentication failed");
        }

    }
}
```

3. Reverse a Number

```
import java.util.scanner;
public class ReverseNumber {
    public static void main (string[] args) {
        Scanner s = new scanner (system.in);
        System.out.print ("Enter a number:");
        int number = scanner.nextInt();
        int reversedNumber = reverseNumber(number);
        System.out.println ("Reversed number:" +
                    reversedNumber);
        }
        public static int reverseNumber (int num) {
            int reversedNum = 0;
            while (num != 0) {
                int digit = num % 10;
                reversedNum = reversedNum * 10 + digit;
                num = num / 10;
            }
            return reversedNum;
        }
}
```

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4. Eligible for vote or Not

```
import java.util.scanner;
public class VoteEligibility {
    public static void main(string[] args) {
    Scanner scanner = new scanner (system.in);
    System.out.print ("Enter your age:");
    int age = scanner.nextInt();
    check vote Eligibility (age);
    }
    public static voiol checkvoteEligibility (int age) {
        int votingAge = 18;
        if (age >= voting Age) {
        system.out.println (" you are eligible to vote!");
        } else {
        int yearsLeft = votingAge-age;
        system.out.println (" Sorry, you are not
        eligible to vote. you will be eligible in"+YearsLeft+
                "years.");
        }
    }
}
```

5. LCM & GCD of a Number

```
import java.util.scanner;
public class GCD-LCM
{
    static int gcd (int x, int y)
    {
     int r=0,a,b;
     a = (x>y) ? x:y;
     b = (x<y) ? x:y;
```

```
r=b;
while (a % b != 0)
{
    r = a % b;
    a = b;
    b = r;
}
    return r;
}
static int lcm(int x, int y)
{
  int a;
  a = (x > y) ? x : y;
  while (true)
  {
    if (a % x == 0 && a % y == 0)
      return a;
    ++a;
  }
}

  public static void main (String args[])
  {
    Scanner input = new Scanner (System.in);
    System.out.println("Enter the two numbers:");
    int x = input.nextInt();
    int y = input.nextInt();
    System.out.println("GCD :" + gcd(x,y));
    System.out.println("LCM :" + LCM(x,y));
    input.close();
  }
}
```

6. Right Triangle star pattern

```
import java.util.scanner;
public class Right Triangle pattern {
    public static void main (string [] args) {
    scanner sc = new scanner (system.in);
    system.out.print ("Enter the no.of rows:");
    int rows =scanner.nextInt ();
    for (int i=1 ; i<=rows ; i++) {
    system.out.print ("*");
    }
    system.out.println ();
    }
}
```

7. Print pattern

```
import java.util.scanner;
public class pascalTriangle {
    public static void main (string [] args) {
    scanner sc = new scanner (system.in);
    system.out.print ("Enter the no.of rows for
      pascal triangle :");
    int rows = scanner.nextInt ();
    for (int i=0; i<rows ;i++) {
    int number = 1;
    for (int j = 0; j<rows-i; j++) {
    system.out.print (" ");
    }
    for (int j=0 ; j<=i ; j++) {
    system.out.print (number +");
    number = number * (i-j)/(j+1);
    }
```

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1

```
System.out.println();
    }
  }
}
```

9. Sum of Evenfibonacci number

9)
```
public class Evenfibonaccisum {
    public static void main(String[] args) {
    int n=100;
    long evensum = findEven-fibonaccisum(n);
    System.out.println("Sum of even Fibonacci
     numbers upto "+n+": "+evensum);
    }

    public static long sum(int n) {
        long a=0, b=1, c=0, evensum=0;
        while(c<=n){
          c=a+b;
          if(c%2==0 && c<=n){
            evensum+=c;
          }
          a=b;
          b=c;
        }
        return evensum;
    }
}
```

10. Skipping k number from M to N

```
public class skipNumbers {
    public static void main(String[] args) {
        int m=10;
        int n=30;
        int k=3;
        printNumberskipping(m,n,k);
    }
public static void printNumbersskipping(int start,
        int end, int skip) {
    for(int i=start; i<=end; i+=skip+1) {
    System.out.print(i+" ");
    }
}
}
```

11. Matrix addition

```
public class MatrixAddition {
    public static void main(String[] args) {
    int[][] matrix1 = {{1,2,3},{4,5,6},{7,8,9}};
    int[][] matrix2={{9,8,7},{6,5,4},{3,2,1}};
    int[][] result = addMatrices(matrix1, matrix2);
    system.out.println("Matrix 1:");
    display Matrix(Matrix 1);
    System.out.println("In Matrix 2");
    display Matrix(Matrix2);
    system.out.println("In sum of Matrices:");
    display Matrix(result);
}
```

13. Rectangle Symbol pattern

```
import java.util.scanner;
public class Rectangle symbol pattern
{
    public static void main (string [] args) {
    Scanner sc=new scanner(system.in);
    System.out.print(", Enter the symbol:")
    String symbol= scanner.nextline();
    System.out.print ("Rows:");
    int rows=scanner.nextInt();
    System.out.print ("columns:");
    int columns=scanner.nextInt();
    print Rectangle pattern(symbol,row,columns);
     scanner.close();
    }
}
```

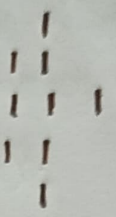
14. Matrix Multiplication

```
public class MatrixMul {
    public static void main(String args[]){
        int a[][]={{1,1,1},{2,2,2},{3,3,3}};
        int b[][]={{1,1,1},{2,2,2},{3,3,3}};
        int c[][]=new int[3][3];

        for(int i=0;i<3;i++){
        for(int j=0;j<3;j++){
        c[i][j]=0;
        for(int k=0;k<3;k++)
        {
        c[i][j]+=a[i][k]*b[k][j];
        }
        System.out.print(c[i][j]+" ");
```

```
}
system.out.println();
}
}
}
```

15. print pattern



```
import java.util.scanner;
public class patternprint {
    public static void main (string[] args){
     scanner sc= new scanner(system.in);
     system.out.print("Enter number:");
     int num=scanner.nextInt();
      system.out.print("Max Number of times:");
     int maxTimes=scanner.nextInt();
      printpattern(num,maxTimes);
      scanner.close();
     }
      public static voidprintpattern(int num, int maxTimes) {
       for(int i=1;i<=maxTimes*2-1;i++) {
           int current = (i<=maxTimes)? i :maxTimes * 2-i;
             for(int j=1;i<=current;i++) {
             System.out.print(num);
           }
           System.out.println();
         }
      }
}
```