

Loops & Pattern Program

Day 9 Assignment

1. Write a Program(WAP) to print Alphabets A, B, C, D, E, F, G, H, using pattern programming logic
2. Write a program to print triangle using star pattern programming logic
3. WAP to print

```

*****
*       *
*       *
*       *
*****
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*****

```

4. Write a program to print PW SKILLS using pattern programming logic.
5. Write a program to print your Full Name using pattern programming logic

1. Write a Program(WAP) to print Alphabets A, B, C, D, E, F, G, H, using pattern programming logic

```

public class Main
{
    public static void main(String[] args)
    {
        int n=10;
        for(int i=0; i<n; i++)
        {
            for(int j=0; j<n; j++)
            {
                if(expression)
                System.out.print("*");
                else
                System.out.print(" ");
            }
            System.out.println("");
        }
    }
}
For A

```

```

*****
*       *
*       *
*       *
*****
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*       *

```

expression: $i==0 \parallel j==0 \parallel j==n-1 \parallel i==(n-1)/2$

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

expression: $i==0 \ \&\& \ j>0 \ \&\& \ j<n-1 \parallel i==(n-1)/2 \parallel j==0 \ \&\& \ i>0 \parallel j==n-1 \ \&\& \ i>0$

For B

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

expression: $j==0 \parallel i==0 \ \&\& \ j<n-1 \parallel i==n-1 \ \&\& \ j<n-1 \parallel i==(n-1)/2 \ \&\& \ j<n-1 \parallel j==n-1 \ \&\& \ i<(n-1)/2 \ \&\& \ i>0 \parallel j==n-1 \ \&\& \ i>(n-1)/2 \ \&\& \ i<n-1$

For C

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

expression: $i==0 \ \&\& \ j>0 \parallel j==0 \ \&\& \ i>0 \ \&\& \ i<n-1 \parallel i==n-1 \ \&\& \ j>0$

For D

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

expression: $j==0 \parallel i==0 \ \&\& \ j<n-1 \parallel i==n-1 \ \&\& \ j<n-1 \parallel j==n-1 \ \&\& \ i>0 \ \&\& \ i<n-1$

For E

expression: $i==0 \parallel j==0 \parallel i==n-1 \parallel i==(n-1)/2$

For F

expression: $i==0 \parallel j==0 \parallel i==(n-1)/2$

For G

expression:

For H

expression: $j==0 \parallel j==n-1 \parallel i==(n-1)/2$

2. Write a program to print triangle using star pattern programming logic

```

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

```

public class Main
{
    public static void main(String[] args)
    {
        int n=5;
        for(int i=1; i<n; i++)
        {
            for(int space=n; space>=i; space--)
                System.out.print(" ");
            for(int star=1; star<=2*i-1 ; star++)
                System.out.print("*");
            System.out.println("");
        }
    }
}

```

3. WAP to print

```

*****
*   *   *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
*****

```

```

public class Main{
    public static void main(String[] args) {
        int n=15;

        for (int i=0; i<n; i++)
        {
            for (int j=0; j<n; j++)
            {
                if (expression)
                {
                    System.out.print("*");
                }
                else
                    System.out.print(" ");
            }
            System.out.println(" ");
        }
    }
}

```

```

    }
  }
}

```

expression:

$i+j \leq (n-1)/2 \parallel j-i \geq (n-1)/2 \parallel i==0 \parallel i==n-1 \parallel j==0 \parallel j==n-1$

or,

$i == 0 \ \&\& \ j \leq (n - 1) / 2 \parallel j == 0 \ \&\& \ i \leq (n - 1) / 2 \parallel i + j \leq (n - 1) / 2 \parallel i == 0 \parallel j == 0 \parallel i == n - 1 \parallel j == n - 1 \parallel i == 0 \ \&\& \ j \geq (n - 1) / 2 \parallel j \geq (n - 1) \ \&\& \ i \leq (n - 1) / 2 \parallel j - i \geq (n - 1) / 2$

4. Write a program to print PW SKILLS using pattern programming logic.

Ans:

```
public class Main
```

```

{
    public static void main(String[] args)
    {
        int n=11;
        for(int i=0; i<n; i++)
        {
            for(int j=0; j<n; j++)
            {
                if(j==0 || i==0 || j==n-1 && i<(n-1)/2 || i==(n-1)/2 )
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
            System.out.println("");
        }

        System.out.println("");
        for(int i=0; i<n; i++)
        {
            for(int j=0; j<n; j++)
            {
                if(j==0 || j==n-1 || i==j && j>(n-1)/2 || i==n-j && j<=(n-1)/2)
                    System.out.print("*");
                else
                    System.out.print(" ");
            }
            System.out.println("");
        }

        System.out.println("");
        System.out.println("");
        System.out.println("");
        System.out.println("");
        for(int i=0; i<n; i++)

```

```
{
    for(int j=0; j<n; j++)
    {
        if(i==0 && j>0 || j==0 && i<(n-1)/2 || i==(n-1)/2 || j==n-1 && i>(n-1)/2 || i==n-1)
            System.out.print("*");
        else
            System.out.print(" ");
    }
    System.out.println("");
}

System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(j==0 || i==j && j>(n-1)/2 || i==(n-1)/2 && j<=(n-1)/2 || i==n-j && j>(n-1)/2)
            System.out.print("*");
        else
            System.out.print(" ");
    }
    System.out.println("");
}

System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(i==0 || i==n-1 || j==(n-1)/2)
            System.out.print("*");
        else
            System.out.print(" ");
    }
    System.out.println("");
}

System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(j==0 || i==n-1)
            System.out.print("*");
        else
            System.out.print(" ");
    }
}
```

```

        System.out.println("");
    }

    System.out.println("");
    for(int i=0; i<n; i++)
    {
        for(int j=0; j<n; j++)
        {
            if(j==0 || i==n-1)
                System.out.print("*");
            else
                System.out.print(" ");
        }
        System.out.println("");
    }

    System.out.println("");
    for(int i=0; i<n; i++)
    {
        for(int j=0; j<n; j++)
        {
            if(i==0 && j>0 || j==0 && i<(n-1)/2 || i==(n-1)/2 || j==n-1 && i>(n-1)/2 || i==n-1)
                System.out.print("*");
            else
                System.out.print(" ");
        }
        System.out.println("");
    }
}

```

5. Write a program to print your Full Name (i.e SURAJ PRATAP SINGH) using pattern programming logic

Ans:

```

public class Main
{
    public static void main(String[] args)
    {
        int n=11;
        System.out.println("");
        for(int i=0; i<n; i++)
        {
            for(int j=0; j<n; j++)
            {
                if(i==0 && j>0 || j==0 && i<(n-1)/2 || i==(n-1)/2 || j==n-1 && i>(n-1)/2 || i==n-1)
                    System.out.print("*");
                else

```

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

System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(j==0 || j==n-1 || i==n-1)
            System.out.print("");
        else
            System.out.print(" ");
    }
    System.out.println("");
}

System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(j==0 || i==0 || j==n-1 && i<(n-1)/2 || i==(n-1)/2 && j<n-1 || i==j && j>(n-1)/2)
            System.out.print("");
        else
            System.out.print(" ");
    }
    System.out.println("");
}

System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(i==0 && j>0 && j<n-1 || i==(n-1)/2 || j==0 && i>0 || j==n-1 && i>0)
            System.out.print("");
        else
            System.out.print(" ");
    }
    System.out.println("");
}

System.out.println("");
for(int i=0; i<n; i++)
{
```

```
for(int j=0; j<n; j++)
{
if(i==0 || j==(n-1)/2 || i==n-1 && j<(n-1)/2 || j==0 && i>(n-1)/2)
System.out.print("*");
else
System.out.print(" ");
}
System.out.println("");
}
```

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

```
System.out.println("");
for(int i=0; i<n; i++)
{
for(int j=0; j<n; j++)
{
if(j==0 || i==0 || j==n-1 && i<(n-1)/2 || i==(n-1)/2)
System.out.print("*");
else
System.out.print(" ");
}
System.out.println("");
}
```

```
System.out.println("");
for(int i=0; i<n; i++)
{
for(int j=0; j<n; j++)
{
if(j==0 || i==0 || j==n-1 && i<(n-1)/2 || i==(n-1)/2 && j<n-1 || i==j && j>(n-1)/2)
System.out.print("*");
else
System.out.print(" ");
}
System.out.println("");
}
```

```
System.out.println("");
for(int i=0; i<n; i++)
{
for(int j=0; j<n; j++)
{
```



```
        if(i==0 && j>0 && j<n-1 || i==(n-1)/2 || j==0 && i>0 || j==n-1 && i>0)
            System.out.print("*");
        else
            System.out.print(" ");
        }
        System.out.println("");
    }

    System.out.println("");
    for(int i=0; i<n; i++)
    {
        for(int j=0; j<n; j++)
        {
            if(i==0 || j==(n-1)/2)
                System.out.print("*");
            else
                System.out.print(" ");
        }
        System.out.println("");
    }

    System.out.println("");
    for(int i=0; i<n; i++)
    {
        for(int j=0; j<n; j++)
        {
            if(i==0 && j>0 && j<n-1 || i==(n-1)/2 || j==0 && i>0 || j==n-1 && i>0)
                System.out.print("*");
            else
                System.out.print(" ");
        }
        System.out.println("");
    }

    System.out.println("");
    for(int i=0; i<n; i++)
    {
        for(int j=0; j<n; j++)
        {
            if(j==0 || i==0 || j==n-1 && i<(n-1)/2 || i==(n-1)/2)
                System.out.print("*");
            else
                System.out.print(" ");
        }
        System.out.println("");
    }
}
```

```
System.out.println("");
System.out.println("");
System.out.println("");
System.out.println("");
System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(i==0 && j>0 || j==0 && i<(n-1)/2 || i==(n-1)/2 || j==n-1 && i>(n-1)/2 || i==n-1)
            System.out.print("*");
        else
            System.out.print(" ");
    }
    System.out.println("");
}
```

```
System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(i==0 || i==n-1 || j==(n-1)/2)
            System.out.print("*");
        else
            System.out.print(" ");
    }
    System.out.println("");
}
```

```
System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(j==0 || j==n-1 || i==j)
            System.out.print("*");
        else
            System.out.print(" ");
    }
    System.out.println("");
}
```

```
System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
```

```
{
    if(j==0 || i==n-1 && j<(n-1)/2 || j==(n-1)/2 && i>(n-1)/2 || i==(n-1)/2 && j>(n-1)/2 ||
j==n-1 && i>(n-1)/2)
        System.out.print("*");
    else
        System.out.print(" ");
    }
    System.out.println("");
}

System.out.println("");
for(int i=0; i<n; i++)
{
    for(int j=0; j<n; j++)
    {
        if(j==0 || j==n-1 || i==(n-1)/2)
            System.out.print("*");
        else
            System.out.print(" ");
        }
        System.out.println("");
    }
}
```