

## Assignment – 7<sup>th</sup> (Pattern Programming)

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

Ans: - Pattern of A:

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 && j>0 && j<(n-1)/2 || j==0 && i>0
                    || i==(n-1)/2 && j<=(n-1)/2
                    || j==(n-1)/2 && i>0) {
                    System.out.print("* ");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }
}
```

Pattern of B:

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 && j<(n-1)/2 || j==0
                    || i==(n-1) && j<(n-1)/2
                    || i==(n-1)/2 && j<(n-1)/2
                    || j==(n-1)/2 && i>0 && i<(n-1)/2
                    || j==(n-1)/2 && i>(n-1)/2 && i<(n-1))
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }
}
```

Pattern of C:

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 && j>0 && j<(n-1)/2
                || j==0 && i>0 && i<(n-1)
                || i==(n-1) && j>0 && j<(n-1)/2)
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}
```

Pattern of D:

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 && j<(n-1)/2 || j==0
                || i==(n-1) && j<(n-1)/2
                || j==(n-1)/2 && i>0 && i<(n-1))
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}
```

Pattern of E:

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 && j<(n-1)/2 || j==0
                || i==(n-1)/2 && j<(n-1)/2
                || i==(n-1) && j<(n-1)/2)
```

```

        {
            System.out.print("* ");
        }
        else{
            System.out.print("  ");
        }
    }
    System.out.println();
}
}

```

Pattern of F:

```

public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 && j<(n-1)/2 || j==0
                || i==(n-1)/2 && j<(n-1)/2)
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }
}

```

Pattern of G:

```

public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 && j>0 && j<(n-1)/2
                || j==0 && i>0 && i<(n-1)
                || i==(n-1) && j>0 && j<(n-1)/2
                || j==(n-1)/2 && i>=(n-1)/2
                || i==(n-1)/2 && j<(n-1)/2 && j>1)
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }
}

```

Pattern of **H**:

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(j==0 || i==(n-1)/2 && j<(n-1)/2
                || j==(n-1)/2)
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}
```

## OUTPUT OF ALL PATTERNS

```

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

```

...Program finished with exit code 0  
Press ENTER to exit console.

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

**Ans: - Pattern of Triangles:**

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                // first triangle
                if(j==0 || i==(n-1)
                || i==j)
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.print("\n");
            for(int j=0; j<n; j++){
                // second triangle
```

}

## OUTPUT

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

...Program finished with exit code 0  
Press ENTER to exit console.

### 3. Write a Program to print.

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

Ans: - Pattern:

```
public class Main
{
    public static void main(String[] args) {
        int n=14;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(i==0 || j==0 || i==n-1 || j==n-1
                || i+j<=(n-1)/2 || j-i>=(n-1)/2)
                {
                    System.out.print("* ");
                }
                else{
                    System.out.print("  ");
                }
            }
            System.out.println();
        }
    }
}
```

#### OUTPUT

```
* * * * * * * * * * * * * *
* * * * *      * * * * * * *
* * * * *      * * * * * *
* * * *      * * * * * *
* * *      * * * * *
* *      * * * *
*      * * *
*      * *
*      *
*      *
*      *
*      *
*      *
*      *
*      *
* * * * * * * * * * * * *
...Program finished with exit code 0
Press ENTER to exit console.
```

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

Ans: - Pattern of PW SKILLS:

```
public class Main
{
    public static void main(String[] args) {
        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
```

```

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

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

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

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

    for(int j=0; j<n; j++){
        if(i==0 && j<(n-1)/2
        || i==n-1 && j<(n-1)/2 || j==(n-1)/4)
        {
            System.out.print("* ");
        }
        else{
            System.out.print(" ");
        }
    }

    for(int j=0; j<n; j++){
        if(j==0 || i==(n-1) && j<(n-1)/1.5)
        {
            System.out.print("* ");
        }
        else{

```

```

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

for(int j=0; j<n; j++){
    if(j==0 || i==(n-1) && j<(n-1)/1.5)
    {
        System.out.print("* ");
    }
    else{
        System.out.print(" ");
    }
}

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

System.out.println();
}
}
}

```

## OUTPUT

```

* * *      *      *      * * *      * *      *      *      *      * * *
*      *      *      *      *      *      *      *      *      *      *
*      *      *      *      *      *      *      *      *      *      *
* * *      *      *      *      *      *      *      *      *      * *
*      *      *      *      *      *      *      *      *      *      *
*      * *      * *      *      *      *      *      *      *      *      *
*      *      *      *      *      *      *      *      *      *      *
*      *      *      *      *      *      *      *      *      *      *
...Program finished with exit code 0
Press ENTER to exit console.
```

**5. Write a Program to print your Full Name using star pattern programming logic.**

**Ans: - Pattern of My Name (RAHUL KUMAR):**

```
public class Main{
    public static void main(String[] args){

        int n=7;
        for(int i=0; i<n; i++){
            for(int j=0; j<n; j++){
                if(j==0 || i==0 && j<(n-1)/2
                || j==(n-1)/2 && i>0 && i<(n-1)/2
                || i==(n-1)/2 && j<(n-1)/2 || i-j==(n-1)/2)
                {
                    System.out.print("* ");
                }
            }
        }
    }
}
```



```

        else{
            System.out.print(" ");
        }
    }

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

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

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

    for(int j=0; j<n; j++){
        if(j==0 || i==(n-1) && j<(n-1)/1.5){
            System.out.print("* ");
        }
        else{
            System.out.print(" ");
        }
    }

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

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

```

