

# Pattern programming

## Assignment Questions

### Assignment Questions

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

Ans :

- Program for printing A :

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

Output :

```

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

```

- Program for pattern B

```

public class PatternB {
    public static void main(String[] args) {
        for (int i = 0; i < 11; i++) {
            for (int j = 0; j < 11; j++) {
                if (j == 0 || i == 0 && j <= 3 || i == 5 && j <= 3 || i == 10 &&
j <= 3 || j - i == 3 && j <= 5 || i + j == 8 && j <= 5 && j >= 3 || i - j == 2 &&
j >= 3 && j <= 5 || i + j == 13 && j <= 5) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}

```

Output :

```

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

```

- Program for pattern C :

```
public class PatternC {
    public static void main(String[] args) {
        for (int i = 0; i < 11; i++) {
            for (int j = 0; j < 11; j++) {
                if (i + j == 4 || i == 0 && j >= 4 && j <= 8 || j == 0 && i >= 4
&& i <= 6 || i - j == 6 || i == 10 && j >= 4 && j <= 8) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}
```

Output :

```

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

- Program for pattern D :

```
public class PatternD {
    public static void main(String[] args) {
        for (int i = 0; i < 11; i++) {
            for (int j = 0; j < 11; j++) {
                if (j == 0 || i == 0 && j <= 3 || j - i == 3 && j <= 5 || j == 5
&& i >= 2 && i <= 8 || i + j == 13 && j <= 5 || i == 10 && j <= 3) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
        }
    }
}
```

```

        System.out.println();
    }
}
}

```

Output :

```

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

```

- Program for pattern E :

```

public class PatternE {
    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) / 2 || 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();
        }
    }
}

```

Output :

```

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

```

- Program for pattern F :

```

public class PatternF {
    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) / 2 || i == (n - 1) / 2 && j
<= (n-1) / 2) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}

```

Output :

```

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

```

- Program for printing G :

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

Output :

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

- Program for pattern H :

```
public class PatternH {
    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 || j == (n - 1) / 2 || i == (n - 1) / 2 && j <=
```

```
(n-1)/2) {  
  
        System.out.print("*");  
    } else {  
  
        System.out.print(" ");  
    }  
  
    }  
  
    System.out.println();  
  
    }  
  
}
```

## Output :

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

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

**Ans :**

Output :

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

### 3. WAP to print

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

Ans :

```
public class AssignmentPattern {
    public static void main(String[] args) {
        for (int i = 0; i < 14; i++) {
            for (int j = 0; j < 14; j++) {
                if (i + j <= 6 || j - i >= 6 || j == 0 && i >= 6 || j == 13 && i
>= 7 || i == 13) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.println();
        }
    }
}
```



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

Ans :

```
public class PwSkills {
    public static void main(String[] args) {
        for (int i = 0; i < 11; i++) {
            for (int j = 0; j < 11; j++) {
                if (j == 0 || i == 0 && j <= 3 || j - i == 3 && j <= 5 || j == 5
&& i >= 2 && i <= 3 || i + j == 8 && j <= 5 && j >= 3 || i == 5 && j <= 3) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.print("");
            for (int j = 0; j < 11; j++) {
                if (j == 0 || j == 10 || i + j == 10 && j <= 5 || i==j && j>= 5){
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.print("          ");
            for (int j = 0; j < 11; j++) {
                if (j - i == 3 && j <= 5 || i + j == 2 || j == 0 && i >= 2 && i
<= 5 || i == 5 && j <= 5 || j == 5 && i >= 5 && i <= 8 || i + j == 13 && j <= 5
|| i - j == 8) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.print("");
            for (int j = 0; j < 11; j++) {
                if (j == 0 || i + j == 6 || i - j == 4) {
                    System.out.print("*");
                } else {
                    System.out.print(" ");
                }
            }
            System.out.print("");
            for (int j = 0; j < 11; j++) {
                if (i == 0 || j == 5 || i == 10) {
                    System.out.print("*");
                }
            }
        }
    }
}
```

```

        } else {
            System.out.print(" ");
        }
    }
    System.out.print("    ");
    for (int j = 0; j < 11; j++) {
        if (j == 0 || i == 10) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("    ");
    for (int j = 0; j < 11; j++) {
        if (j == 0 || i == 10) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("  ");
    for (int j = 0; j < 11; j++) {
        if (j - i == 3 && j <= 5 || i + j == 2 || j == 0 && i >= 2 && i
<= 5 || i == 5 && j <= 5 || j == 5 && i >= 5 && i <= 8 || i + j == 13 && j <= 5
|| i - j == 8) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.println();
}
}
}

```

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

Ans :

```

public class Varshab {
    public static void main(String[] args) {
        for (int i = 0; i < 11; i++) {
            for (int j = 0; j < 11; j++) {

```

```

        if (j == 0 && i <= 5 || i - j == 5 || i + j == 15 || j==10 && i
<= 5) {

            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("  ");
    for (int j = 0; j < 11; j++) {
        if (i + j == 5 || j - i == 5 || i == 5 || j == 0 && i >= 5 || j
== 10 && i >= 5) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("  ");
    for (int j = 0; j < 11; j++) {
        if (j == 0 || i == 0 && j <= 3 || j - i == 3 && j <= 5 || i + j
== 8 && j <= 5 && j >= 3 || i - j == 5) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("  ");
    for (int j = 0; j < 11; j++) {
        if (j - i == 3 && j <= 5 || i + j == 2 || j == 0 && i >= 2 && i
<= 5 || i == 5 && j <= 5 || j == 5 && i >= 5 && i <= 8 || i + j==13 && j<=5 ||
i-j == 8) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("  ");
    for (int j = 0; j < 11; j++) {
        if (j == 0 || j == 10 || i == 5) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("  ");

```

```

        for (int j = 0; j < 11; j++) {
            if (i + j == 5 || j - i == 5 || i == 5 || j == 0 && i >= 5
                || j == 10 && i >= 5) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        }
        System.out.print(" ");
        for (int j = 0; j < 11; j++) {
            if (j == 0 || i == 0 && j <= 3 || i == 5 && j <= 3 || i == 10 &&
j <= 3 || j - i == 3 && j <= 5 || i + j == 8 && j <= 5 && j >= 3 || i - j == 2 &&
j >= 3 && j <= 5 || i + j == 13 && j <= 5) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        }
        System.out.println();
    }
}

```