

PATTERN PROGRAMMING

Assignment Questions:

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

```
Ans:- int n=11;
      for(int i=1; i<=n; i++) {
          for (int j=1; j<=n; j++) {
              if(i+j==(n+1)/2+1 || j-i==(n-1)/2 ||
i==(n+1)/3 && j>=(n+1)/4 && j<=(n-2)) {
                  System.out.print("*");
              }else {
                  System.out.print(" ");
              }

              }System.out.print(" ");
          for (int j=1; j<=n; j++) {
              if(j==1 && i<=(n-1)/2 || i==1 && j>=1 &&
j<=(n+1)/3 || i==(n+1)/6 && j==(n-1)/2 || i==(n+1)/4 &&
j>=(n+1)/4 && j<=(n+1)/3 || i==(n+1)/3 && j==(n-1)/2 ||
i==(n-1)/2 && j>=1 && j<=(n+1)/3) {
                  System.out.print("*");
              }else {
                  System.out.print(" ");
              }
          }System.out.print("");
          for (int j=1; j<=n; j++) {
              if (i==1 && j>=(n-1)/2 && j<=(n+1)/2+1 ||
i==(n+1)/6 && j==(n+1)/4 || j==(n+1)/6 && i>=(n+1)/4 &&
i<=(n+1)/3 || i==(n-1)/2 && j==(n+1)/4 || i==(n+1)/2 &&
j>=(n-1)/2 && j<=(n+1)/2+1) {
                  System.out.print("*");
              }else {
                  System.out.print(" ");
              }
          }System.out.print(" ");
          for (int j=1; j<=n; j++) {
              if(j==1 && i<=(n+1)/2 || i==1 && j>=1 &&
j<=(n+1)/4 || i==(n-1)/5 && j==(n+1)/3 || j==(n-1)/2 &&
i>=(n+1)/4 && i<=(n+1)/3 || i==(n-1)/2 && j==(n+1)/3 ||
i==(n+1)/2 && j>=1 && j<=(n+1)/4 ) {
```

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```
        System.out.print("*");
    }else {
        System.out.print(" ");
    }
} System.out.print(" ");
for (int j=1; j<=n; j++) {
    if(i<=(n-1)/2 && j==1 || i==1 && j<=(n-
1)/2 || i==(n-1)/2 && j<=(n-1)/2 || i==(n+1)/4 && j<=(n-
1)/2) {
        System.out.print("*");
    }else {
        System.out.print(" ");
    }
} System.out.print(" ");
for(int j=1; j<=n; j++) {
    if(i<=(n-1)/2 && j==1 || i==1 && j<=(n-
1)/2 || i==(n+1)/4 && j<=(n-1)/2) {
        System.out.print("*");
    }else {
        System.out.print(" ");
    }
}System.out.print(" ");
for (int j=1; j<=n; j++) {
    if(i==(n-1)/5 && j==(n-1)/2 || i==1 &&
j>=(n-1)/5 && j<=(n+1)/3 || j==1 && i>=(n-1)/5 && i<=(n-1)/2
|| i==(n+1)/2 && j>=(n-1)/5 && j<=(n+1)/4 || j==(n+1)/3 &&
i>=(n+1)/3 && i<=(n-1)/2 || j==(n+1)/2 && i>=(n+1)/3 &&
i<=(n+1)/2 || i==(n+1)/3&&j==(n-1)/2) {
        System.out.print("*");
    }else {
        System.out.print(" ");
    }
}System.out.print(" ");
for(int j=1; j<=n; j++) {
    if(j==1 && i<=(n+1)/2 || j==(n+1)/2 &&
i<=(n+1)/2 || i==(n+1)/4 && j<=(n+1)/2) {
        System.out.print("*");
    }else {
        System.out.print(" ");
    }
}
```

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

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

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

Q.3) WAP to print

```
Ans:- int n = 14;  
  
for (int i = 1; i <= n; i++) {  
    for (int j = 1; j <= n; j++) {  
        if (i == n || j == n || i == 1 || j == 1 || i + j <= n / 2 + 1 ||  
j - i >= n  
            / 2 - 1) {  
            System.out.print("*");  
        } else {  
            System.out.print(" ");  
        }  
    }  
    System.out.println();  
}
```

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

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```
Ans:- int n = 9;

    for (int i = 1; i <= n; i++) {
        for (int j = 1; j <= n; j++) {
            if (j == 1 && i <= n || i == 1 && j < (n - 1) || j == n && i > 1
&& i < (n + 1) / 2
                || i == (n + 1) / 2 && j < (n - 1)) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        }
        System.out.print(" ");
        for (int j = 1; j <= n; j++)
            if (j == 1 && i <= n || i + j == n + 1 && i >= (n + 1) / 2 || j -
i == 0 && i >= (n + 1) / 2
                || j == n && i <= n) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        System.out.print(" ");
        for (int j = 1; j <= n; j++)
            if (i == 2 && j == n - 1 && i > 1 || i == 1 && j > (n + 1) / 4 &&
j < (n - 1)
                || j == (n + 1) / 4 && i > 1 && i < (n + 1) / 2
                || i == (n + 1) / 2 && j > (n + 1) / 4 && j < (n - 1)
                || j == n - 1 && i > (n + 1) / 2 && i < n || i == n && j
< n - 1 && j > (n - 1) / 3
                || j == (n - 1) / 3 && i < n && i > (n - 2)) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        System.out.print("");
        for (int j = 1; j <= n; j++)
            if (j == 3 && i <= n || i + j == n && i <= (n + 1) / 2 || i - j
== 1 && i >= (n + 1) / 2) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        System.out.print("");
        for (int j = 1; j <= n; j++)
```

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

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

Ans- My name is BABAN

```
int n = 11;
for (int i = 1; i <= n; i++) {
    for (int j = 1; j <= n; j++) {
        if (j == 1 && i <= (n - 1) / 2 || i == 1 && j >= 1 && j <= (n +
1) / 3
            || i == (n + 1) / 6 && j == (n - 1) / 2
            || i == (n + 1) / 4 && j >= (n + 1) / 4 && j <= (n + 1) /
3
            || i == (n + 1) / 3 && j == (n - 1) / 2 || i == (n - 1) /
2 && j >= 1 && j <= (n + 1) / 3) {
            System.out.print("*");
        } else {
            System.out.print(" ");
        }
    }
    System.out.print("");
}
```

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```
        for (int j = 1; j <= n; j++) {
            if (i + j == (n + 1) / 2 + 1 || j - i == (n - 1) / 2
                || i == (n + 1) / 3 && j >= (n + 1) / 4 && j <= (n - 2))
{
                System.out.print("*");
            } else {
                System.out.print(" ");
            }

        }
        System.out.print("");
        for (int j = 1; j <= n; j++) {
            if (j == 1 && i <= (n - 1) / 2 || i == 1 && j >= 1 && j <= (n +
1) / 3
                    || i == (n + 1) / 6 && j == (n - 1) / 2
                    || i == (n + 1) / 4 && j >= (n + 1) / 4 && j <= (n + 1) /
3
                    || i == (n + 1) / 3 && j == (n - 1) / 2 || i == (n - 1) /
2 && j >= 1 && j <= (n + 1) / 3) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        }
        System.out.print("");
        for (int j = 1; j <= n; j++) {
            if (i + j == (n + 1) / 2 + 1 || j - i == (n - 1) / 2
                || i == (n + 1) / 3 && j >= (n + 1) / 4 && j <= (n - 2))
{
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        }
        System.out.print("");
        for (int j = 1; j <= n; j++) {
            if (j == 1 && i <= (n + 1) / 2 || j == (n + 1) / 2 && i <= (n +
1) / 2 || i == j && i <= (n + 1) / 2) {
                System.out.print("*");
            } else {
                System.out.print(" ");
            }
        }
        System.out.println();
    }
}
```

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