JAVA ASSIGNMENT

ON
PATTERNS

Submitted by

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1) 1
   0 1
   1 0 1
   0 1 0 1
   1 0 1 0 1

Program:

```java
public class Pattern5 {
public static void main(String[] args) {
for (int i = 1; i <= 5; i++)
{
for (int j = 1; j <= i; j++)
{
if ((i + j) % 2 == 0) {
System.out.print(1 + " ");
}
else {
System.out.print(0 + " ");
}
}
System.out.println();
}
}
}
```


Output:
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1

```
2)  *****
    ****
    ***
    **
    *
    **
    ***
    ****
    *****
```

Program:
```java
public class Pattern6 {
public static void main(String[] args)
{
for (int i = 5; i >= 1; i--)
{
for (int j = 1; j <= i; j++)
{
System.out.print("*");
}

System.out.println();
}
for (int i = 2; i <= 5; i++)
{
for (int j = 1; j <= i; j++)
{
System.out.print("*");
}

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

```
3)     1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
```

Program:

```java
public class Pattern7
{
public static void main(String[] args)
{
for (int i = 1; i <= 5; i++)
{
for (int j = 0; j <= 5 - i; j++)
{
System.out.print(" ");
}
int x = 1;
for (int k = 1; k <= i; k++)
{

System.out.print(x + " ");
x = x * (i - k) / k;
}
System.out.println();
}
}
}
```

```
4)         1
         2 1 2
       3 2 1 2 3
     4 3 2 1 2 3 4
   5 4 3 2 1 2 3 4 5
```

Program:

```java
public class Pattern8 {
public static void main(String[] args)
{
for (int i = 1; i <= 5; i++)
{
for (int j = 1; j <= 2 * (5 - i); j++)
{
System.out.print(" ");
}

for (int j = i; j >= 1; j--)
{
System.out.print(j + " ");
}
for (int j = 2; j <= i; j++)
{
System.out.print(j + " ");
}
System.out.println();
}
}
}
```

```
5)     *
      * * *
    * * * * *
   * * * * * * *
  * * * * * * * * *
   * * * * * * *
    * * * * *
     * * *
      *
```

Program:

```java
public class Pattern9 {
public static void main(String[] args)
{
for (int i = 1; i <= 5; i++)
{
for (int j = 1; j <= 5 - i; j++)
{
System.out.print(" ");
}

for (int j = 1; j <= 2 * i - 1; j++)
{
System.out.print("*");
}
System.out.println();
}

for (int i = 5-1; i >= 1; i--)
{
for (int j = 1; j <= 5 - i; j++)
{
```

```java
System.out.print(" ");
}
for (int j = 1; j <= 2 * i - 1; j++) {
System.out.print("*");
}
System.out.println();
}
}
}
```

6)
```
        *
      * *
    * * *
  * * * *
* * * * *
```

Program:

```java
public class Pattern10 {
public static void main(String[] args)
{
for (int i = 0; i < 5; i++)
{
for (int j = 5 - i; j > 1; j--)
{
System.out.print(" ");
}
for (int j = 0; j <= i; j++)
{
System.out.print("* ");
}
System.out.println();
}
}
```

```
}
```

7) 1 2 3 4 5
   2 3 4 5
    3 4 5
     4 5
      5

Program:

```java
public class Pattern11 {
public static void main(String[] args)
{
for (int i = 1; i <= 5; i++)
{
for (int j = 1; j < i; j++)
{
System.out.print(" ");
}
for (int j = i; j <= 5; j++)
{
System.out.print(j + " ");
}


System.out.println();
}
}



}
```

```
8) 1 2 3 4 5
     2 3 4 5
       3 4 5
         4 5
           5
         4 5
       3 4 5
     2 3 4 5
   1 2 3 4 5
```

Program:

```java
public class Pattern12{
public static void main(String[] args){
for (int i = 1; i <= 5; i++)
{
for (int j = 1; j < i; j++)
{
System.out.print(" ");
}

for (int j = i; j <= 5; j++)
{
System.out.print(j + " ");
}
System.out.println();
}
for (int i = 5 - 1; i >= 1; i--)
{
for (int j = 1; j < i; j++) {
System.out.print(" ");
}

for (int j = i; j <= 5; j++) {
```

```java
        System.out.print(j + " ");
    }

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

9)   *
      * *
    *   *
   *   *
* * * * * * * * *

Program:
```java
public class Pattern13 {
public static void main(String[] args) {
for (int i = 1; i <= 5; i++)
{
for (int j = i; j < 5; j++) {
System.out.print(" ");
}
for (int k = 1; k <= (2 * i - 1); k++)
{
if (k == 1 || i == 5 || k == (2 * i - 1))
{
System.out.print("*");
}
else {
System.out.print(" ");
}
}

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

```
        }
      }
    }


10)  *********
       *       *
        *     *
         *   *
          * *
           *
```

Program:

```java
public class Pattern14 {
public static void main(String[] args) {
for (int i = 5; i >= 1; i--)
{
for (int j = i; j < 5; j++) {
System.out.print(" ");
}
for (int k = 1; k <= (2 * i - 1); k++)
{
if (k == 1 || i == 5 || k == (2 * i - 1))
{
System.out.print("*");
}
else {
System.out.print(" ");
}
}

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

```
11)  *
    *  *
   *     *
  *        *
 *           *
  *          *
   *        *
    *     *
     *  *
      *
```

Program:

```java
public class Pattern15 {
public static void main(String[] args) {
for (int i = 1; i <= 5; i++)
{
for (int j = 1; j <= 5 - i; j++) {
System.out.print(" ");
}
for (int j = 1; j <= 2 * i - 1; j++) {
if (j == 1 || j == 2*i-1)
System.out.print("*");
else
System.out.print(" ");
}
System.out.println();
}
for (int i = 5-1; i >= 1; i--)
{
for (int j = 1; j <= 5 - i; j++) {
System.out.print(" ");
}
for (int j = 1; j <= 2 * i - 1; j++) {
```

```java
        if (j == 1 || j == 2*i-1)
        System.out.print("*");
        else
        System.out.print(" ");
        }
        System.out.println();
        }
        }
        }
```

12)
```
* * * * *
  *       *
   *     *
    * *
     *
    * *
   *     *
  *       *
* * * * *
```

<u>Program:</u>

```java
public class Pattern16 {
public static void main(String[] args) {

for (int i = 1; i <= 5; i++)
{
for (int j = 1; j < i; j++)
{
System.out.print(" ");
}
for (int j = i; j <= 5; j++)
{
```

```java
if(j==i||j==5||i==1)
{
System.out.print("* ");
}
else
{
System.out.print("  ");
}
System.out.println();
}
for (int i = 5 - 1; i >= 1; i--)
{
for (int j = 1; j < i; j++)
{
System.out.print(" ");
}
for (int j = i; j <= 5; j++)
{
if(j==i||j==5||i==1)

System.out.print("* ");

Else

System.out.print("  ");
}

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

```
13) A
   A B
   A B C
   A B C D
   A B C D E
   A B C D E F
   A B C D E
   A B C D
   A B C
   A B
   A
```

Program:

```java
public class Pattern3 {
public static void main(String[] args) {

for (int i = 0; i <= 5; i++)
{
int alphabet = 65;
for (int j = 0; j <= i; j++)
{
System.out.print((char)(alphabet + j) + " ");
}
System.out.println();
}
for (int i = 5; i >= 0; i--)
{
int alphabet = 65;
for (int j = 0; j <= i - 1; j++)
{
System.out.print((char)(alphabet + j) + " ");
```

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

14) A B C D E F
     A B C D E
     A B C D
     A B C
     A B
     A

Program:

```
public class Pattern4 {
public static void main(String[] args) {
for (int i = 5; i >= 0; i--)
{
int alphabet = 65;
for (int j = 0; j <= i; j++)
{
System.out.print((char) (alphabet + j) +
" ");
}
System.out.println();
}
}

}
```

```
15) A B C D E F
    A B C D E
    A B C D
    A B C
    A B
    A
    A
    A B
    A B C
    A B C D
    A B C D E
    A B C D E F
```

Program:

```java
public class Pattern5 {
public static void main(String[] args) {
for (int i = 5; i >= 0; i--)
{
int alphabet = 65;
for (int j = 0; j <= i; j++)
{
System.out.print((char) (alphabet + j) +
" ");
}
System.out.println();
}
for (int i = 0; i <= 5; i++)
{
int alphabet = 65;
for (int j = 0; j <= i; j++)
{
System.out.print((char) (alphabet + j) +
" ");
```

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

16) F E D C B A
     F E D C B
     F E D C
     F E D
     F E
     F

Program:

```
public class Pattern6 {
public static void main(String[] args) {

int alphabet = 65;
for (int i = 0; i <= 5; i++)
{
for (int j = 5; j >= i; j--)
{
System.out.print((char) (alphabet + j) +
" ");
}
System.out.println();
}
}


}
```

```
17)  F
     F E
     F E D
     F E D C
     F E D C B
     F E D C B A
```

Program:

```java
public class Pattern7 {
public static void main(String[] args) {
for (int i = 5; i >= 0; i--)
{
int alphabet = 65;
for (int j = 5; j >= i; j--)
{
System.out.print((char) (alphabet + j) +
" ");
}
System.out.println();
}
}
}
```

```
18)  F E D C B A
     E D C B A
     D C B A
     C B A
     B A
     A
     A
     B A
     C B A
     D C B A
```

```
    E D C B A
    F E D C B A
```

Program:

```java
public class Pattern8 {
public static void main(String[] args) {
for (int i = 5; i >= 0; i--)
{
int alphabet = 65;
for (int j = i; j >= 0; j--)
{
System.out.print((char) (alphabet + j) +
" ");
}
System.out.println();
}

for (int i = 0; i <= 5; i++)
{
int alphabet = 65;
for (int j = i; j >= 0; j--)
{
System.out.print((char) (alphabet + j) +
" ");
}
System.out.println();
}

}
```

```
19)     A
      A B
    A B C
   A B C D
 A B C D E
A B C D E F
```

Program:

```java
public class Pattern9 {
public static void main(String[] args) {
for (int i = 0; i <= 5; i++)
{
int alphabet = 65;
for (int j = 5; j > i; j--)
{
System.out.print(" ");
}
for (int k = 0; k <= i; k++)
{
System.out.print((char) (alphabet + k) +
" ");
}
System.out.println();
}
}

}
```

```
20) A
    B C
    D E F
    G H I J
    K L M N O
    P Q R S T U
```

Program:

```java
public class Pattern10 {
public static void main(String[] args) {
int alphabet=65;
for (int i = 0; i <= 5; i++)
{
for (int j = 0; j <= i; j++)
{
System.out.print((char) alphabet + " ");
alphabet++;
}
System.out.println();
}
}
```

```
21) A
    B A
    C B A
    D C B A
    E D C B A
    F E D C B A
```

Program:

```java
public class Pattern11 {
public static void main(String[] args) {
for (int i = 0; i <= 5; i++)
{
int alphabet = 65;
for (int j = i; j >= 0; j--)
{
System.out.print((char) (alphabet + j) +
" ");
}
System.out.println();
}
}
```

22) A
    B G
    C H M
    D I N S
    E J O T Y
    F K P U Z _

Program:

```java
public class Pattern12 {
public static void main(String[] args) {

for (int i = 0; i <= 5; i++)
{
```

```java
int alphabet = 65;
int temp = i;
for (int j = i; j >= 0; j--)
{
System.out.print((char) (alphabet + temp)
+ " ");
temp = temp + 5;
}
System.out.println();
}
}
}
```

23) A
    A B A
    A B C B A
    A B C D C B A
    A B C D E D C B A
    A B C D E F E D C B A

<u>Program:</u>

```java
public class Pattern13 {
public static void main(String[] args) {

for (int i = 0; i <= 5; i++)
{
int alphabet = 65;
for (int j = 0; j <= i; j++)
{
System.out.print((char) (alphabet + j) +
" ");
}
```

```java
        for (int k = i - 1; k >= 0; k--)
        {
System.out.print((char) (alphabet + k) +
" ");
        }
System.out.println();
        }
        }
        }
```

24) A B C D E F
      A B C D E
       A B C D
        A B C
         A B
          A

Program:

```java
public class Pattern14 {
public static void main(String[] args) {
for (int i = 0; i <= 5; i++)
{
int alphabet = 65;
for (int j = 0; j <= i; j++)
{
System.out.print(" ");
}
for (int k = 0; k <= 5 - i; k++)
{
System.out.print((char) (alphabet + k) +
" ");
}
```

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

25) A
   A A
  A B A
 A C C A
A D F D A
A E J J E A

Program:
```java
public class Pattern15 {
public static void main(String[] args) {
for (int i = 1; i <= 6; i++)
{
int alphabet = 65;
for (int j = 6; j > i; j--)
{
System.out.print(" ");
}
int temp = 1;
for (int k = 1; k <= i; k++)
{
System.out.print((char)(alphabet  -   1   +
temp) + " ");
temp = temp * (i - k) / (k);
}
System.out.println();
}
}
}
```