מטלה מטריצות-דוד אלקובי

1)

public static void main(String[] args) {  
  
int arr [][]=new int[6][4];  
  
 }  
}

2)

public static void main(String[] args) {  
 int k=1;  
  
 int arr[][] = new int[4][3];  
 for (int i = 0; i < arr.length; i++) {  
 for (int j = 0; j < arr[i].length; j++) {  
 arr[i][j] =k++;  
 }  
 k=1;  
 }

3)

public static void main(String[] args) {  
 int k=1;  
  
 int arr[][] = new int[4][3];  
 for (int i = 0; i < arr.length; i++) {  
 for (int j = 0; j < arr[i].length; j++) {  
 arr[i][j] =k;  
 }  
 ++k;  
 }

4)

public static int sumFunc (int arr[][]) {  
 int sum = 0;  
 for (int i = 0; i < arr.length; i++) {  
 for (int j = 0; j < arr[i].length; j++) {  
 if (i == 0 || i == arr.length - 1)  
 sum += arr[i][j];  
 else{  
 sum += arr[i][0] + arr[i][arr[i].length - 1];  
 break;}  
 }  
 }

5)

public static void main(String[] args) {  
 int sum = 0;  
   
  
  
 int arr1[][] = {{1, 2, 3, 4, 15},  
 {0, 5, 4, 7, 4},  
 {0, 0, 0, 0, 0}};  
   
 for (int i = 0; i < arr1[0].length; i++) {  
 for (int j = 0; j <= arr1.length-1; j++) {  
 if (j < arr1.length - 1)  
 sum += arr1[j][i];  
 else  
 arr1[j][i] = sum;  
 }  
 sum = 0;  
 }

6)

public static void main(String[] args) {  
 int sum = 0;  
  
  
  
 int arr[][] = {{0, 2, 3, 4, 15},  
 {0, 5, 4, 7, 4},  
 {0, 14, 2, 8, 8}};  
  
 for (int i = 0; i <arr.length ; i++) {  
 for (int j = arr[i].length-1; j >=0 ; j--) {  
 if (j>0)  
 sum+=arr[i][j];  
 else  
 arr[i][j]=sum;  
 }  
 sum=0;  
 }  
 *printArray*(arr);  
 }  
}

7)

public static int [] func(int arr[][],int j){  
 if (j<0||j>arr[0].length-1)  
 return null;  
 int k=0;  
 int arrNew[]=new int[arr.length];  
 for (int i = 0; i < arrNew.length ; i++) {  
 arrNew[i]=arr[k][j];  
 k++;  
 }  
 return arrNew;

8)

public static void func(int arr[][]){  
int k=1;  
 for (int i = (arr.length)/2; i < arr.length ; i++) {  
  
 for (int j = 0; j <arr[i].length ; j++) {  
 arr[i][j]=arr[i-k][j];  
 }  
 k+=2;

9)

public static void func(int arr[][]){  
int k=0;  
 for (int i = (arr.length)/2; i < arr.length ; i++) {  
  
 for (int j = 0; j <arr[i].length ; j++) {  
 arr[i][j]=arr[0+k][j];  
 }  
 k+=1;

10)

public static int func(int arr[][]) {  
 int sum = 0, j = 0,i=0;  
 while (j<arr[i].length&&i< arr.length) {  
 sum += arr[i++][j++];  
 if (i== arr.length)  
 break;  
 }  
 return sum;  
 }

11)

public static int[][] func(int arr[][]) {  
 int k=0,l=0;  
 int arrNew[][]=new int[arr[0].length][arr.length];  
  
 for (int i = 0; i < arrNew.length; i++) {  
 for (int j = 0; j <arrNew[i].length ; j++) {  
 arrNew[i][j]=arr[k++][l];  
 }  
 l++;  
 k=0;  
 }  
  
return arrNew;

12)

public static int func(int arr[][]) {  
 int sum=0;  
 for (int i = 0; i < arr.length; i++) {  
 for (int j = 1+i; j <arr[i].length ; j++) {  
 sum+=arr[i][j];  
 }  
  
 }  
  
 return sum;

13)

public static int func(int arr[][]) {  
 int j, sum=0;  
 for (int i = 1; i < arr.length; i++) {  
 for ( j = 0; j <i ; j++) {  
 sum+=arr[i][j];  
 }  
  
 }  
  
 return sum;

14)

public static void func(int arr[][]) {  
 int maxColumn=0, max=0,cnt=0;  
 for (int i = 0; i <arr[0].length ; i++) {  
 for (int j = 0; j < arr.length-1 ; j++) {  
 if (arr[j][i]==arr[j+1][i]+1||arr[j][i]==arr[j+1][i]-1)  
 cnt++;  
 if (cnt>max){  
 max=cnt;  
 maxColumn=i;  
 }  
 }  
 System.*out*.println("number of following nums in column num "+i+":"+cnt);  
 cnt=0;  
 }  
 System.*out*.println("max number of following nums in column num: "+maxColumn);  
  
 }  
 }

14)ב

public static void func2(int arr[][]){  
 Random rnd=new Random();  
 for (int i = 0; i < arr.length ; i++) {  
 for (int j = 0; j <arr[i].length ; j++) {  
 arr[i][j]=rnd.nextInt(21);  
 }  
 }  
 *printArray*(arr);  
 *func*(arr);  
 }  
  
}

15)

for (int i = 0; i <arr[0].length ; i++) {  
 for (int j = 1+i; j < arr.length; j++) {  
 arr[j][i]=temp;  
 }  
 temp++;  
 }  
*printArray*(arr);  
 }

16)

public static void func(int N, int M) {  
int temp=M;  
 int arr[][] = new int[N][N];  
  
  
 for (int i = 0; i <arr[0].length ; i++) {  
 for (int j = 0+i; j < arr.length; j++) {  
 arr[j][i]=temp;  
 }  
 temp++;  
 }  
*printArray*(arr);  
 }  
  
}

17)

public static int func(int arr[][]) {  
 int sum = 0;  
  
 for (int i = 0; i < arr.length; i++) {  
 sum+=arr[i][arr[0].length-1-i];  
 }  
 return sum;  
  
 }  
  
}

18)

public static int func(int arr[][]) {  
 int sum = 0;  
  
 for (int i = 1; i < arr.length; i++) {  
 for (int j = arr[0].length-1; j>=arr[0].length-i ; j--) {  
 sum+=arr[i][j];  
 }  
  
 }  
 return sum;

19)

public static int func(int arr[][]) {  
 int k=1, sum = 0;  
  
 for (int i = 0; i < arr.length-1; i++) {  
 for (int j = 0; j<arr[0].length-k ; j++) {  
 sum+=arr[i][j];  
 }  
 k++;  
  
 }  
 return sum;  
  
 }  
  
}

20)

public static int [][] func(int N, int M) {  
 int temp=M;  
 int arr[][]=new int[N][N];  
  
 for (int i = 0; i < arr.length ; i++) {  
 for (int j = i; j < arr[0].length; j++) {  
 arr[i][j]=M--;  
 }  
 M=temp;  
 }  
 for (int i = 1; i < arr.length ; i++) {  
 for (int j = 0; j <i ; j++) {  
 arr[i][j]=M-i;  
 M++;  
 }  
 M=temp;  
   
 }  
 return arr;  
   
 }  
  
}