11.Write a program that would sort a list of names in alphabetical order Ascending or Descending, choice get from the user?

Sample Input:

Banana

Carrot

Radish

Apple

Jack

Order(A/D) : A Sample Output:

Apple

Banana

Carrot

Jack

Radish

|  |
| --- |
| Scanner input = new Scanner(System.*in*);  String arr[] = {"Banana", "Apple", "Carrot", "Radish", "Jack"}; int len = arr.length;  char order = input.next().charAt(0); if (order == 'A') {  for (int i = 0; i < len; i++) {  for (int j = i + 1; j < arr.length; j++) { if (arr[i].compareTo(arr[j]) > 0) {  String temp = arr[i]; arr[i] = arr[j]; |
| arr[j] = temp;  }  }  }  System.*out*.println(Arrays.*toString*(arr));  }  else if (order == 'D') {  for (int i = 0; i < len; i++) {  for (int j = i + 1; j < arr.length; j++) { if (arr[i].compareTo(arr[j]) < 0) {  String temp = arr[i]; arr[i] = arr[j]; arr[j] = temp;  }  }  }  System.*out*.println(Arrays.*toString*(arr)); } |

1. Write a program for matrix multiplication?

Sample Input:

Mat1 = 1 2

5 3

Mat2 = 2 3

[4Sample Output: 1](#_Toc62570)

[Mat Sum = 10 5](#_Toc62571)

[22 18](#_Toc62572)

|  |
| --- |
| 23 Scanner input=new Scanner(System.*in*); int r=input.nextInt(); int c=input.nextInt(); int mat1[][]=new int[r][c]; int mat2[][]=new int[r][c];    for(int i=0;i<r;i++)  {  for(int j=0;j<c;j++)  {  mat1[i][j]=input.nextInt();  } } for(int i=0;i<r;i++)  {  for(int j=0;j<c;j++)  {  mat2[i][j]=input.nextInt();  } }  int sum[][]=new int[r][c]; for(int i=0;i<r;i++)  { for(int j=0;j<c;j++)  {  sum[i][j]=0; for(int k=0;k<c;k++) |
| {  sum[i][j] = sum[i][j] +(mat1[i][k]\*mat2[k][j]);  }  System.*out*.print(sum[i][j] + "\t");  }  System.*out*.println(); } |

1. Write a program to print the following pattern Sample Input:

Enter the number to be printed: 1

Max Number of time printed: 3

1

11

111

11

1

|  |
| --- |
| Scanner input=new Scanner(System.*in*);  System.*out*.print("Enter the number to be printed: "); int x=input.nextInt();  System.*out*.print("Max Number of time printed: "); int n=input.nextInt(); for(int i=1;i<=n;i++)  {  for(int j=1;j<=i;j++)  {  System.*out*.print(x);  }  System.*out*.println();  } for(int i=n-1;i>=1;i--)  { for(int j=1;j<=i;j++)  {  System.*out*.print(x);  }  System.*out*.println(); } |

1. Write a program to print the special characters separately and print number of Special characters in the line?

|  |
| --- |
| Scanner input=new Scanner(System.*in*);  String s=input.nextLine(); int len=s.length(); char a[]=new char[len]; |
| int sp=0;  for(int i=0;i<len;i++)  {  a[i]=s.charAt(i);  if(a[i]>=65 && a[i]<=90 ||a[i]>=97 &&a[i]<=122  || a[i]>=48 && a[i]<=57)  { } else {  sp++;  System.*out*.print(a[i]);  }  }  System.*out*.println("\n"+sp); |

1. Write a program to print all the composite numbers between a and b?

Sample Input:

* 1. = 12
  2. = 19

Sample Output

14, 15, 16, 18

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int a=input.nextInt(); int b=input.nextInt(); for(int i=a+1;i<=b;i++)  {  int c=0;  for(int j=1;j<=b;j++)  {  if(i%j==0) c++;  } if(c>2)  System.*out*.print(i+" "); } |

1. Write a program to print the Inverted Full Pyramid pattern?

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); for(int i=n;i>=1;i--)  { for(int j=0;j<n-i;j++)  {  System.*out*.print(" ");  }  for(int k=1;k<=i;k++)  {  System.*out*.print(" \*");  }  System.*out*.println(); } |

1. Find the Mean, Median, Mode of the array of numbers? Sample Input;:

Array of elements = {16, 18, 27, 16, 23, 21, 19} Sample Output:

Mean = 20

Median = 19

Mode = 16

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int a[]={16,18,27,16,23,21,19}; int len=a.length; int sum=0;  for(int i=0;i<len;i++)  {  sum=sum+a[i];  }  int mean=sum/len;  System.*out*.println("mean: "+mean); for(int i=0;i<len;i++)  {  for(int j=i+1;j<len;j++)  {  if(a[i]>a[j])  {  int temp=a[i]; a[i]=a[j]; a[j]=temp;  }  } }  for(int i=0;i<len;i++)  {  if(len%2==0)  {  int mid=len/2;  System.*out*.print("median: "+a[mid-1]); break;  } else {  int mid=(len+1)/2;  System.*out*.print(mid);  System.*out*.println("median: "+a[mid-1]); break;  } } for(int i=0;i<len;i++)  { for(int j=i+1;j<len;j++)  {  if(a[i]==a[j])  {  System.*out*.println("mode: "+a[i]); break;  } |

} }

1. Find the factorial of n? Sample Input: N = 4 Sample Output:

4 Factorial = 24 Test cases:

* 1. N = 0
  2. N = -5
  3. N = 1
  4. N = Q
  5. N = 3A

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int fact=1;  for(int i=1;i<=n;i++)  {  fact=fact\*i;  }  System.*out*.print(fact); } |

1. Write a program to print the following pattern Sample Input:

Enter the Character to be printed: %

Max Number of time printed: 3

%

% %

% % %

|  |
| --- |
| Scanner input=new Scanner(System.*in*); char c=input.next().charAt(0); int n=input.nextInt(); for(int i=1;i<=n;i++)  {  for(int j=1;j<=i;j++)  {  System.*out*.print(c);  }  System.*out*.println(); } |

1. Find the year of the given date is leap year or not Sample Input: Enter Date: 04/11/1947 Sample Output:

Given year is Non Leap Year

|  |
| --- |
| import java.util.Scanner; public class ak  {  public static void main(String[] args)  {  Scanner input=new Scanner(System.*in*);  System.*out*.print("Enter year: ");  String year=input.next();  String a[]=year.split("/"); String d=a[2];  int num=Integer.*parseInt*(d);  if((num%4==0 && num%100!=0)|| num%400==0) System.*out*.println("It is a leap year"); else  System.*out*.println("Not a leap year");  }  } |

Test cases:

* 1. 04/11/19.47
  2. 11/15/1936
  3. 31/45/1996
  4. 64/09/1947
  5. 00/00/2000

1. Find the number of factors for the given number Sample Input: Given number: 100 Sample Output:

Number of factors = 9

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int factors=0; for(int i=1;i<=n;i++)  {  if(n%i==0)  factors=factors+1;  }  System.*out*.print("Number of factors = "+factors);  1. Scanner input=new Scanner(System.*in*); int n=input.nextInt(); |
| int factors=0; for(int i=1;i<=n;i++)  {  if(n%i==0) factors++;  }  System.*out*.print(factors); |

1. Write a program to print the given number is Perfect number or not?

Sample Input: Given Number: 6 Sample Output:

It’s a Perfect Number

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int factors=0; for(int i=1;i<n;i++)  {  if(n%i==0)  factors=factors+i;  }  if(n==factors)  System.*out*.print("It's a perfect number"); |

1. Write a program to print the number of vowels in the given statement?

Sample Input:

Saveetha School of Engineering Sample Output:

Number o vowels = 12

|  |
| --- |
| Scanner input=new Scanner(System.*in*);  String name=input.nextLine(); int len=name.length(); char a[]=new char[len]; int vow=0;  for(int i=0;i<len;i++)  {  a[i]=name.charAt(i);  if(a[i]=='a'||a[i]=='e'||a[i]=='i'||a[i]=='o'||a[i]=='u' ||a[i]=='A'||a[i]=='E'||a[i]=='I'||a[i]=='O'||a[i]=='U') vow=vow+1;  }  System.*out*.println(vow); |

Write a program to print hollow square symbol pattern?

Get the symbol from user.

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=5;  char c=input.next().charAt(0); for(int i=1;i<=n;i++)  {  for(int j=1;j<=n;j++)  {  if(i==1||j==1||i==n||j==n) System.*out*.print(c+" "); else  System.*out*.print(" ");  }  System.*out*.println(); } |

1. Write a program to print consonants and vowels separately in the given word

Sample Input:

Given Word: Engineering Sample Output:

Consonants: n g n r n g

Vowels: e i e ei

|  |
| --- |
| Scanner input=new Scanner(System.*in*);  String name=input.nextLine(); int len=name.length(); char a[]=new char[len]; char vow[]=new char[len]; char con[]=new char[len]; int v=0,c=0;  for(int i=0;i<len;i++)  {  a[i]=name.charAt(i);  if(a[i]=='a'||a[i]=='e'||a[i]=='i'||a[i]=='o'||a[i]=='u' ||a[i]=='A'||a[i]=='E'||a[i]=='I'||a[i]=='O'||a[i]=='U') { vow[v] = a[i]; v++; } else {  con[c] = a[i]; c++;  }  }  System.*out*.print("Consonants: "); for(int i=0;i<v;i++)  {  System.*out*.print(vow[i]);  }  System.*out*.print("\nvowels: "); for(int j=0;j<c;j++)  {  System.*out*.print(con[j]); } |

1. Write a program to print the Fibonacci series.

Sample Input:

Enter the n value: 6 Sample Output:

0 1 1 2 3 5

Test Condition: Implement negative Fibonacci series

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int a1=0,a2=1; for(int i=0;i<n;i++)  {  System.*out*.print(a1+" "); int a3=a1+a2; a1=a2; a2=a3;  } |

Write a program to print the below pattern

1

* + 1. 2
    2. 3 3
    3. 4 4 4

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); for(int i=1;i<=n;i++)  {  for(int j=1;j<=i;j++)  {  System.*out*.print(i);  }  System.*out*.println(); } |

1. Write a program to find the square, cube of the given decimal number Sample Input: Given Number: 0.6 Sample Output:

Square Number: 0.36

Cube Number:0.216

Scanner input=new Scanner(System.*in*); float n=input.nextFloat();

System.*out*.print("square: "+(n\*n));

System.*out*.print("cube: "+(n\*n\*n));

1. Program to find the frequency of each element in the array.

Sample Input & Output:

{1, 2, 8, 3, 2, 2, 2, 5, 1}

Element | Frequency

-------------------------- 1 | 2

2 | 4

8 | 1

3 | 1

5 | 1

|  |
| --- |
| import java.util.Arrays; import java.util.Scanner; public class ak {  public static void main(String[] args)  {  Scanner input=new Scanner(System.*in*); int a[]=new int[] {1,2,8,3,2,2,2,5,1}; int t[]=new int[a.length]; int visited=-1;  for(int i=0;i<a.length;i++)  {  int count=1;  for(int j=i+1;j<a.length;j++)  {  if(a[i]==a[j])  {  count++; t[j]=visited;  } }  if(t[i]!=visited) t[i]=count;  }  for(int i=0;i<a.length;i++)  {  if(t[i]!=visited)  System.*out*.println(a[i]+" "+t[i]);  }  }  } |

1. Write a program to print the given number is Perfect number or not?

Sample Input: Given Number: 6 Sample Output:

It’s a Perfect Number

Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int factors=0;

for(int i=1;i<n;i++)

{ if(n%i==0)

factors=factors+i;

}

if(n==factors)

System.*out*.print("It's a perfect number");

**31.** Find the factorial of n?

Sample Input:

N = 6

Sample Output:

6 Factorial = 720

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int fact=1;  for(int i=1;i<=n;i++)  {  fact=fact\*i;  }  System.*out*.print(n+" factorial = "+fact); |

1. Write a program to print the below pattern

1

4 9

16 25 36

49 64 81 100

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int k=1;  for(int i=1;i<=n;i++)  { for(int j=1;j<=i;j++)  {  System.*out*.print(k\*k+" "); k++;  }  System.*out*.println(); } |

1. Write a program to find the number of composite numbers in an array of elements Sample Input;:

Array of elements = {16, 18, 27, 16, 23, 21, 19} Sample Output:

Number of Composite Numbers = 5

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int arr[]={16,18,27,16,23,21,19}; int len=arr.length; int count=0;  for(int i=0;i<len;i++)  {  int c=0;  for(int j=1;j<100;j++)  {  if(arr[i]%j==0)  { c++;  } } if(c>2) count++;  }  System.*out*.println(count); |

Test cases:

1. Find the nth odd number after n odd number Sample Input:

N : 4

Sample Output:

4th Odd number after 4 odd numbers = 15

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int arr[]=new int[100]; int j=1;  for(int i=1;i<100;i++)  {  if(i%2!=0) { arr[j] = i; j++;  }  }  System.*out*.print(arr[n\*2]); |

1. Write a program that finds whether a given character is present in a string or not. In case it is present it prints the index at which it is present. Do not use built-in find functions to search the character.

Sample Input:

Enter the string: I am a programmer

Enter the character to be searched: p Sample Output:

P is found in string at index: 8

Note: Check for non available Character in the given statement as Hidden Test case.

|  |
| --- |
| Scanner input=new Scanner(System.*in*); String str=input.nextLine(); char c=input.next().charAt(0); char arr[]=new char[str.length()]; int len=str.length(); int x=0;  for(int i=0;i<len;i++)  {  arr[i]=str.charAt(i); if(arr[i]==c)  {  System.*out*.println(c+" is found in string at index: "+(i+1)); x=1;  } } if(x==0)  System.*out*.print("character not found"); |

1. Write a program to print the below pattern

1

* 1. 2
  2. 3 3
  3. 4 4 4

3 3 3

2 2

1

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); for(int i=1;i<=n;i++)  { for(int j=1;j<=i;j++)  {  System.*out*.print(i);  }  System.*out*.println();  } for(int i=n-1;i>=1;i--)  {  for(int j=1;j<=i;j++) |

{

System.*out*.print(i);

}

System.*out*.println();

}

1. Program to find whether the given number is Armstrong number or not Sample Input: Enter number : 153 Sample Output:

Given number is Armstrong number

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int num1=n; int arm=0; while(num1!=0)  { int rem=num1%10; arm=arm+(rem\*rem\*rem); num1=num1/10;  }  if(n==arm)  System.*out*.print("Armstrong number"); else  System.*out*.print("Not Armstrong"); |

1. Write a program to arrange the letters of the word alphabetically in reverse order

Sample Input:

Enter the word : MOSQUE Sample Output:

Alphabetical Order: U S Q O M E

|  |
| --- |
| import java.util.Scanner; import java.util.Arrays; public class ak  {  public static void main(String args[])  {  Scanner input=new Scanner(System.*in*);  String name=input.nextLine(); int len=name.length(); char arr[]=new char[len]; String Alpha;  for(int i=0;i<len;i++)  {  arr[i]=name.charAt(i);  }  Arrays.*sort*(arr);  for(int i=len-1;i>=0;i--)  {  System.*out*.print(arr[i]+" "); |

}

} }

1. Write a program that accepts a string from user and displays the same string after removing vowels from it.

Sample Input & Output:

Enter a string: we can play the game

The string without vowels is: w cn ply thgm

|  |  |
| --- | --- |
| Scanner input=new Scanner(System.*in*);  String name=input.nextLine();   |  | | --- | | [aeiouAEIOU] |   String n1=name.replaceAll(" ","");  System.*out*.println(n1); |

1. Write a program to print hollow SquareDollar pattern?

|  |
| --- |
| public static void main(String args[])  {  Scanner input=new Scanner(System.*in*); int n=input.nextInt(); 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) System.*out*.print("$ "); else  System.*out*.print(" ");  }  System.*out*.println(); } |

1. Write a program to find the sum of digits of N digit number (sum should be single digit) Sample Input:

Enter N value : 3

Enter 3 digit number: 143 Sample Output:

Sum of 3 digit number: 8

Scanner input=new Scanner(System.*in*); int n=input.nextInt(); int sum=0; while(n!=0)

|  |
| --- |
| { int rem=n%10; sum=sum+rem; n=n/10;  }  System.*out*.println(sum); |

1. Write a program to find the square root of a perfect square number(print both the positive and negative values) Sample Input: Enter the number : 6561 Sample Output:

Square Root: 81, -81

|  |
| --- |
| import java.util.Scanner; import java.lang.Math; public class ak  {  public static void main(String args[])  {  Scanner input=new Scanner(System.*in*); double n=input.nextInt(); double sqrt=Math.*pow*(n,0.5); double sq=Math.*sqrt*(n);  System.*out*.println(sqrt+","+"-"+sqrt);    }  } |

1. Write a program for matrix multiplication?

Sample Input:

Mat1 = 1 2

* 1. 3

Mat2 = 2 3

4 1

Sample Output:

# Mat Sum = 10 5

### 22 18

Scanner input=new Scanner(System.*in*); int r=input.nextInt(); int c=input.nextInt(); int mat1[][]=new int[r][c];

|  |
| --- |
| int mat2[][]=new int[r][c];    for(int i=0;i<r;i++)  {  for(int j=0;j<c;j++)  {  mat1[i][j]=input.nextInt();  } }  for(int i=0;i<r;i++)  {  for(int j=0;j<c;j++)  {  mat2[i][j]=input.nextInt();  } } int sum[][]=new int[r][c]; for(int i=0;i<r;i++)  {  for(int j=0;j<c;j++)  {  sum[i][j]=0;  for(int k=0;k<c;k++)  {  sum[i][j] = sum[i][j] +(mat1[i][k]\*mat2[k][j]);  }  System.*out*.print(sum[i][j] + "\t");  }  System.*out*.println(); } |

**44.** Write a program to print inverted pyramid pattern.

|  |
| --- |
| Scanner input=new Scanner(System.*in*); int n=input.nextInt(); for(int i=n;i>=1;i--)  {  for(int j=0;j<n-i;j++)  {  System.*out*.print(" ");  }  for(int k=1;k<=i;k++)  {  System.*out*.print(" \*");  }  System.*out*.println(); } |