**Problem Statement 1: Arrays API**

**1. Write a program that takes a String through Command Line argument and display the length of the string. Also display the string into uppercase and check whether it is a palindrome or not.**

public class Arraypalindrome {

public static void isPalindrome(String str) {

String pal = "";

for(int i=str.length()-1; i>=0; i--) {

pal += str.charAt(i);

}

System.out.println("String in uppercase: "+str);

System.out.println("Length of string: "+str.length());

if(pal.equals(str)) {

System.out.println(pal+" is palindrome");

}else {

System.out.println(pal+" is not palindrome");

}

}

public static void main(String[] args) {

for(int i=0; i<args.length; i++) {

isPalindrome(args[i]);

}

}

}

**Output:**

Microsoft Windows [Version 10.0.19045.5247]

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C:\Users\epavan.reddy>cd desktop

C:\Users\epavan.reddy\Desktop>**javac Arraypalindrome.java**

C:\Users\epavan.reddy\Desktop>java Arraypalindrome.java

error: class found on application class path: Arraypalindrome

C:\Users\epavan.reddy\Desktop>**java Arraypalindrome sai**

**String in uppercase: SAI**

**Length of string: 3**

**ias is not palindrome**

C:\Users\epavan.reddy\Desktop>**java Arraypalindrome madam**

**String in uppercase: MADAM**

**Length of string: 5**

**madam is palindrome**

**2. Write a program that accepts two numbers in the range from 1 to 40 from the Command Line. Then compares these numbers against a single dimension array of five integer elements ranging in value from 1 to 40. The program displays the message “Bingo” if the two inputted values are found in the array element. For example:**

input> java prob3 3 29

output> Your first number was 3

Your second number was 29

Its Bingo! // this message if 3 and 29 is found in the array

Not Found! // this message if 3 and 29 is not found in the array

The array was 7 25 5 19 30

package day3assignment;

import java.util.Scanner;

public class Bingo {

int first,second;

int arr[] = { 7,25,5,19,30};

void input() {

Scanner sc = new Scanner(System.in);

System.out.println("enter first number:");

first = sc.nextInt();

System.out.println("enter second number:");

second = sc.nextInt();

}

public void check() {

if ((first >40 ||first <0)&&(second >40 || second <0)){

System.out.println("please enter numbres between 1 to 40");

return ;

}

int count = 0;

for (int i = 0; i < arr.length; i++) {

if (arr[i] == first || arr[i] == second) {

count++;

}

}

if (count == 2) {

System.out.println("Bingo");

} else {

System.out.println("not found");

}

}

public static void main(String[] args) {

Bingo bo = new Bingo();

bo.input();

bo.check();

}

}

**Output:**

Microsoft Windows [Version 10.0.19045.5247]

(c) Microsoft Corporation. All rights reserved.

C:\Users\epavan.reddy>cd desktop

C:\Users\epavan.reddy\Desktop>**javac Bingo.java**

C:\Users\epavan.reddy\Desktop>**java Bingo.java**

**enter first number:**

**45**

**enter second number:**

**55**

**please enter numbers between 1 to 40**

C:\Users\epavan.reddy\Desktop>**java Bingo.java**

**enter first number:**

**25**

**enter second number:**

**7**

**Bingo**

C:\Users\epavan.reddy\Desktop>**java Bingo.java**

**enter first number:**

**1**

**enter second number:**

**2**

**not found**

**3. Write a program that allows you to create an integer array of 18 elements with the following values:**

**int A[] = {3, 2, 4, 5, 6, 4, 5, 7, 3, 2, 3, 4, 7, 1, 2, 0, 0, 0}. Perform the following computations,**

**• Compute the sum of elements from index 0 to 14 and stores it at element 15.**

**• Compute the average of all numbers and stores it at element 16.**

**• Identifies the smallest value from the array and stores it at element 17.**

**package** day3assignment;

**public** **class** Array {

**public** **static** **void** main(String[] args) {

**int** A[]= {3, 2, 4, 5, 6, 4, 5, 7, 3, 2, 3, 4, 7, 1, 2, 0, 0, 0};

**int** sum=0;

**for**(**int** i=0;i<15;i++) {

sum+=A[i];

}

A[15]=sum;

**int** totalsum=0;

**for**(**int** i=0;i<A.length;i++) {

totalsum+=A[i];

}

**int** average=totalsum/A.length;

A[16]=average;

**int** smallestValue = A[0];

**for** (**int** i = 1; i < A.length; i++) {

**if** (A[i] < smallestValue) {

smallestValue = A[i];

}

}

A[17] = smallestValue;

System.***out***.println("the sum upto a[14]:"+A[15]);

System.***out***.println("the average of array:"+A[16]);

System.***out***.println("The modified array is:");

**for** (**int** i = 0; i < A.length; i++) {

System.***out***.print(A[i] + " ");

}

}

}

**Output:**

the sum upto a[14]:58

the average of array:6

The modified array is:

3 2 4 5 6 4 5 7 3 2 3 4 7 1 2 58 6 0

**4. Jaffer was done with the online shopping, and the next step was to complete the bill payment, for which he must provide his name, credit card number, expiry month/year and CVV code. The system**

**should validate the inputs as mentioned below:**

**• Inputs cannot be empty if so, provide appropriate messages.**

**• Credit Card Number, expiry month/year and CVV code must be numeric.**

**• Credit card should be 16 characters long and include a dash (-) after each four-digit number.**

**• CVV Code should be of length 3.**

**• The month and year in which the card will expire should be displayed as MM/YY. Below are the inputs and expected output to be used and displayed are depicted in the screenshots.**

package day3assignment;

import java.util.Scanner;

public class Creditcard {

String name;

String cardno,cvv,expairydate;

void input() {

Scanner sc = new Scanner(System.*in*);

System.*out*.println("enter name:");

name = sc.next();

System.*out*.println("enter cardno:");

cardno = sc.next();

System.*out*.println("enter cvv no:");

cvv = sc.next();

System.*out*.println("enter expairydate: ");

expairydate = sc.next();

}

public void check() {

if (name.isEmpty()) {

System.*out*.println("Name cannot be empty.");

} else if (!cardno.matches("\\d{4}-\\d{4}-\\d{4}-\\d{4}")) {

System.*out*.println("Invalid card number. It should be in the format 1234-5678-9101-1121.");

} else if (!cvv.matches("\\d{3}")) {

System.*out*.println("Invalid CVV. It must be 3 digits.");

} else if (!expairydate.matches("(0[1-9]|1[0-2])/[0-9]{2}")) {

System.*out*.println("Invalid expiry date. Use MM/YY format.");

} else {

System.*out*.println("details entered are");

System.*out*.println("========================================");

System.*out*.println("Name: " + name);

System.*out*.println("Card number: " + cardno);

System.*out*.println("Expairy date: " + expairydate);

}

}

public static void main(String[] args) {

Creditcard cc = new Creditcard();

cc.input();

cc.check();

}

}

**Output:**

enter name:

sai

enter cardno:

1234-5678-9012-3456

enter cvv no:

324

enter expairydate:

12/30

details entered are

========================================

Name: sai

Card number: 1234-5678-9012-3456

Expairy date: 12/30

**5. Create an interface MedicineInfo to represent a drug manufactured by a pharmaceutical company.Provide an abstract method displayLabel() in this interface to print Name and address of the company.**

**Do following tasks,**

**• Implement MedicineInfo interface with Tablet, Syrup and Ointment classes.**

**• Override the displayLabel() method in each of these classes to print information suitable to the type of**

**medicine. For example, in case of tablets, it could be “store in a cool dry place”, in case of ointments it could be “for external use only” etc.**

**Create a class TestMedicine . Write main function to do the following:**

**• Declare an array of Medicine references of size 10.**

**• Create a medicine object of the type as decided by a randomly generated integer in the range 1 to 3.(Refer Java API Documentation to find out random generation feature.)**

**• Check the polymorphic behavior of the displayLabel() method.**

**package** day3assignment;

**import** java.util.Random;

**interface** MedicineInfo{

**void** displayLable();

}

**class** Tablet **implements** MedicineInfo{

@Override

**public** **void** displayLable(){

System.***out***.println("Name:Cipla");

System.***out***.println("Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039");

System.***out***.println("Tablet:Store in cold and dry place");

}

}

**class** Syrup **implements** MedicineInfo{

@Override

**public** **void** displayLable(){

System.***out***.println("Name:Cipla");

System.***out***.println("Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039");

System.***out***.println("Syrup:Shake well before use");

}

}

**class** Ointment **implements** MedicineInfo{

@Override

**public** **void** displayLable(){

System.***out***.println("Name:Cipla");

System.***out***.println("Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039");

System.***out***.println("Ointments:For external use only");

}

}

//import java.util.Random;

**public** **class** TestMedicine {

**public** **static** **void** main(String[] args) {

MedicineInfo[] medicines = **new** MedicineInfo[10];

Random rand = **new** Random();

**for** (**int** i = 0; i < medicines.length; i++) {

**int** choice = rand.nextInt(3) + 1;

**switch** (choice) {

**case** 1:

medicines[i] = **new** Tablet();

**break**;

**case** 2:

medicines[i] = **new** Syrup();

**break**;

**case** 3:

medicines[i] = **new** Ointment();

**break**;

}

}

**for** (**int** i = 0; i < medicines.length; i++) {

System.***out***.print("Medicine " + (i + 1) + ": ");

medicines[i].displayLable();

}

}

}

**Output:**

Medicine 1: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Syrup:Shake well before use

Medicine 2: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Tablet:Store in cold and dry place

Medicine 3: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Tablet:Store in cold and dry place

Medicine 4: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Tablet:Store in cold and dry place

Medicine 5: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Tablet:Store in cold and dry place

Medicine 6: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Ointments:For external use only

Medicine 7: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Syrup:Shake well before use

Medicine 8: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Syrup:Shake well before use

Medicine 9: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Ointments:For external use only

Medicine 10: Name:Cipla

Address:No. 117/1 & 118/1, Anjanadri Building,Nayandanahalli, Mysore Road, Bengaluru, Karnataka 560039

Tablet:Store in cold and dry place

**6. Sort the given array in descending order, i.e., arrange the elements from largest to smallest.**

package day3assignment;

import java.util.Scanner;

public class Descarray {

public static void main(String[] args) {

Scanner sc = new Scanner(System.*in*);

System.*out*.println("enter the length of array:");

int n =sc.nextInt();

Integer[] array = new Integer[n];

System.*out*.println("enter elements of array:");

for(int i=0;i<n;i++) {

array[i]=sc.nextInt();

}

for (int i = 0; i < n - 1; i++) {

for (int j = 0; j < n - 1 - i; j++) {

if (array[j] < array[j + 1]) {

int temp = array[j];

array[j] = array[j + 1];

array[j + 1] = temp;

}

}

}

System.*out*.println("Sorted array in descending order:");

for (int i = 0; i < n; i++) {

System.*out*.print(array[i] + " ");

}

}

}

**Output:**

enter the length of array:

7

enter elements of array:

2

6

23

98

24

35

78

Sorted array in descending order: [98, 78, 35, 24, 23, 6, 2]

**7. Given a sorted array arr[] of size N, the task is to remove the duplicate elements from the array.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Removeduplicatesinarray {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("enter array length:");

**int** n = sc.nextInt();

System.***out***.println("enter array values:");

**int** arr[] = **new** **int**[n];

**for**(**int** i=0;i<n;i++) {

arr[i]=sc.nextInt();

}

**int** j=1;

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

**if**(arr[i]!=arr[i-1]) {

arr[j]=arr[i];

j++;

}

}

System.***out***.println("The modified array is:");

**for** (**int** i = 0; i <j; i++) {

System.***out***.print(arr[i] + " ");

}

}

}

**Output:**

enter array length:

9

enter array values:

1 2 2 3 4 4 4 5 5

The modified array is:

1 2 3 4 5

**8. Given two arrays and our task is to find their common elements.**

import java.util.\*;

public class SameElements{

public static void main (String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("enter 1st array elements:");

String input1=sc.nextLine();

String [] arr1=input1.split(",");

System.out.println("enter 2nd array elements:");

String input2=sc.nextLine();

String [] arr2=input2.split(",");

System.out.println("Common elements: ");

findCommonElements(arr1, arr2);

}

public static void findCommonElements(String[] arr1, String[] arr2) {

for (int i = 0; i < arr1.length; i++) {

for (int j = 0; j < arr2.length; j++) {

if (arr1[i].trim().equalsIgnoreCase(arr2[j].trim())) {

System.out.println(arr1[i]);

break;

}

}

}

}

}

**Input:**

enter 1st array elements:

apple,for,article,and,grapes

enter 2nd array elements:

grape,apple,article

**output:**

Common elements:

apple

article

**Input:**

enter 1st array elements:

a,b,c,d,e,f

enter 2nd array elements:

b,d,e,h,g,c

**output:**

Common elements:

b

c

d

e

**9. Given a 2D array of order N X M and a column number K ( 1<=K<=m). Our task is to sort the 2D array according to values in Column K.**

**package** day3assignment;

**import** java.util.Arrays;

**import** java.util.Comparator;

**import** java.util.Scanner;

**public** **class** Sort2DArrayByColumn {

**public** **static** **void** main(String[] args) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.print("Enter the number of rows (N): ");

**int** N = scanner.nextInt();

System.***out***.print("Enter the number of columns (M): ");

**int** M = scanner.nextInt();

**int**[][] array = **new** **int**[N][M];

System.***out***.println("Enter the elements of the 2D array:");

**for** (**int** i = 0; i < N; i++) {

**for** (**int** j = 0; j < M; j++) {

array[i][j] = scanner.nextInt();

}

}

System.***out***.print("Enter the column number (K) to sort by (1 <= K <= M): ");

**int** K = scanner.nextInt();

*sortByColumn*(array, K);

System.***out***.println("Sorted 2D array based on column " + K + ":");

**for** (**int** i = 0; i < N; i++) {

**for** (**int** j = 0; j < M; j++) {

System.***out***.print(array[i][j] + " ");

}

System.***out***.println();

}

}

**public** **static** **void** sortByColumn(**int**[][] array, **int** K) {

**int** columnIndex = K - 1;

Arrays.*sort*(array, **new** Comparator<**int**[]>() {

@Override

**public** **int** compare(**int**[] row1, **int**[] row2) {

**return** Integer.*compare*(row1[columnIndex], row2[columnIndex]);

}

});

}

}

**Output:**

Enter the number of rows (N): 4

Enter the number of columns (M): 4

Enter the elements of the 2D array:

39 27 11 42

10 93 91 90

54 78 56 89

24 64 20 65

Enter the column number (K) to sort by (1 <= K <= M): 3

Sorted 2D array based on column 3:

39 27 11 42

24 64 20 65

54 78 56 89

10 93 91 90

**10. Write the Java Program to Find Transpose of Matrix given matrix.**

**package** day3assignment;

**import** java.util.\*;

**public** **class** Transpose {

**public** **static** **void** main(String args[]) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("Enter the no.of rows and colums: ");

**int** rows = sc.nextInt();

**int** columns = sc.nextInt();

**int** arr[][] = **new** **int**[rows][columns];

System.***out***.print("Enter "+rows+"x"+columns+" matrix: ");

**for**(**int** i=0; i<rows; i++) {

**for**(**int** j=0; j<columns; j++) {

arr[i][j] = sc.nextInt();

}

}

System.***out***.println("Transposed matrix is: ");

**for**(**int** i=0; i<columns; i++) {

**for**(**int** j=0; j<rows; j++) {

System.***out***.print(arr[j][i]+" ");

}

System.***out***.println();

}

}

}

**Output:**

Enter the no.of rows and colums:

3 3

Enter 3x3 matrix:

1 2 3

4 5 6

7 8 9

Transposed matrix is:

1 4 7

2 5 8

3 6 9

**11. Given a matrix of size Row x Col Print the boundary elements of the matrix. Boundary elements are those elements which are not surrounded by elements on all four directions, i.e. elements in the first row, first column, last row and last column.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** BoundaryElementsMatrix {

**public** **static** **void** main(String[] args) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.print("Enter number of rows: ");

**int** rows = scanner.nextInt();

System.***out***.print("Enter number of columns: ");

**int** cols = scanner.nextInt();

**int**[][] matrix = **new** **int**[rows][cols];

System.***out***.println("Enter the elements of the matrix:");

**for** (**int** i = 0; i < rows; i++) {

**for** (**int** j = 0; j < cols; j++) {

matrix[i][j] = scanner.nextInt();

}

}

System.***out***.println("Boundary elements in matrix format:");

*printBoundaryElements*(matrix, rows, cols);

scanner.close();

}

**public** **static** **void** printBoundaryElements(**int**[][] matrix, **int** rows, **int** cols) {

**for** (**int** i = 0; i < rows; i++) {

**for** (**int** j = 0; j < cols; j++) {

**if** (i == 0 || i == rows - 1 || j == 0 || j == cols - 1) {

System.***out***.print(matrix[i][j] + " ");

} **else** {

System.***out***.print(" ");

}

}

System.***out***.println();

}

}

}

**Output:**

Enter number of rows: 3

Enter number of columns: 3

Enter the elements of the matrix:

1 2 3

4 5 6

7 8 9

Boundary elements in matrix format:

1 2 3

4 6

7 8 9

**12. For a given 2D square matrix of size N\*N, the task is to find the sum of elements in the Principal and Secondary diagonals.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Diagonalmatrix {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("Enter the no.of rows and colums: ");

**int** n = sc.nextInt();

**int** m = sc.nextInt();

**int** sumPD = 0;

**int** sumSD = 0;

**int** arr[][] = **new** **int**[n][m];

System.***out***.println("Enter "+n+"x"+m+" matrix: ");

**for**(**int** i=0; i<n; i++){

**for**(**int** j=0; j<m; j++){

arr[i][j] = sc.nextInt();

}

}

**for**(**int** i=0; i<n; i++){

**for**(**int** j=0; j<m; j++){

**if**(i==j){

sumPD = sumPD + arr[i][j];

}

**if**(i+j == (n-1)){

sumSD = sumSD + arr[i][j];

}

}

}

System.***out***.println("Sum of principal diagonal matrix: "+sumPD);

System.***out***.println("Sum of secondary diagonal matrix: "+sumSD);

}

}

**Output:**

Enter the no.of rows and colums:

4 4

Enter 4x4 matrix:

6 7 3 4

8 9 2 1

1 2 9 6

6 5 7 2

Sum of principal diagonal matrix: 26

Sum of secondary diagonal matrix: 14

**Output:**

Enter the no.of rows and colums:

3 3

Enter 3x3 matrix:

2 2 2

1 1 1

3 3 3

Sum of principal diagonal matrix: 6

Sum of secondary diagonal matrix: 6

**Problem Statement 2: String Classes**

**13. Write a program that takes String as input and count the last ‘n’ vowels of a given String. If the number is greater than the vowels found, then print ‘Mismatch in Vowel Count**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Vowelscount {

**int** n;

String str;

**void** input() {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("enter a string:");

str=sc.nextLine();

System.***out***.println("enter no.of vowels:");

n=sc.nextInt();

String str1="";

**int** count=0;

**for**(**int** i=str.length()-1;i>=0;i--) {

**char** ch=str.charAt(i);

**if**(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'||ch=='A'||ch=='E'||ch=='I'||ch=='O'||ch=='U') {

str1=str1+ch;

count++;

}

**if**(count==n) {

**break**;

}

}

**if**(count!=n) {

System.***out***.println("mismatched vowels");

}**else** {

System.***out***.println("the vowels in given string:"+str1);

}

}

**public** **static** **void** main(String[] args) {

Vowelscount vc =**new** Vowelscount();

vc.input();

}

}

**Output:**

enter a string:

sai

enter no.of vowels:

2

the vowels in given string:ia

**14. Write a Java Program to reverse a string.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Reversestring {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("enter a string:");

String reverse="";

String str=sc.nextLine();

**for**(**int** i=str.length()-1;i>=0;i--) {

reverse +=str.charAt(i);

}

System.***out***.println("the reversed string is:"+reverse);

}

}

**Output:**

enter a string:

sai

the reversed string is:ias

**15. Write the Java Program to Sort a String.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Sortedstring {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("enter a string:");

String str = sc.nextLine();

**char**[] charArray=str.toCharArray();

**for**(**int** i=0;i<charArray.length;i++) {

**for**(**int** j=0;j<charArray.length-i-1;j++) {

**if**(charArray[j]>charArray[j+1]) {

**char** temp=charArray[j];

charArray[j]=charArray[j+1];

charArray[j+1]=temp;

}

}

}

System.***out***.println("the sorted string:"+**new** String(charArray));

}

}

**Output:**

enter a string:

javaprogram

the sorted string:aaagjmoprrv

**16. Given string str, the task is to write a Java program to swap the pairs of characters of a string. If the string contains an odd number of characters, then the last character remains as it is.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Sweapstring {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("enter a string:");

String str = sc.nextLine();

**char**[] charArray=str.toCharArray();

**for**(**int** i=0;i<charArray.length-1;i+=2) {

**char** temp=charArray[i];

charArray[i]=charArray[i+1];

charArray[i+1]=temp;

}

System.***out***.println("the sweaped string:"+**new** String(charArray));

}

}

**Output:**

enter a string:

java

the sweaped string:ajav

enter a string:

Testing

the sweaped string:eTtsnig

**17. Given string str, the task is to write Java Program check whether the given string is a pangram or not. A string is a pangram string if it contains all the character of the alphabets ignoring the case of the alphabets.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Panogram {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("Enter a string:");

String str = sc.nextLine().toLowerCase();

String alphabet = "abcdefghijklmnopqrstuvwxyz";

**for** (**int** i = 0; i < alphabet.length(); i++) {

**if** (str.indexOf(alphabet.charAt(i)) == -1) {

System.***out***.println("No");

**return**;

}

}

System.***out***.println("Yes");

}

}

**Output:**

Enter a string:

Welcome

No

Enter a string:

The quick brown fox jumps over the lazy dog

Yes

**18. Write the java program to extract the first letter of each word in it.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Firstletter {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("enter a string:");

String str = sc.nextLine();

String result="";

**int** i =0;

**int** length=str.length();

**while**(i<length) {

**while**(i<length && str.charAt(i)==' ') {

i++;

}

**if**(i<length) {

result +=str.charAt(i);

}

**while**(i<length && str.charAt(i)!=' ') {

i++;

}

}

System.***out***.println(result);

}

}

**Output:**

enter a string:

Practice Java Program

PJP

enter a string:

United Kingdom

UK

**19. Given a String, the task is to insert another string in between the given String at a particular specified index in Java.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Insertstring {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

String ogstr = "Computer Program";

String strtoinsert = " Science";

**int** index = 8;

**if**(index<0||index>ogstr.length()) {

System.***out***.println("index is invalid");

}**else** {

String result=ogstr.substring(0,index)+strtoinsert+ogstr.substring(index);

System.***out***.println("the final string:"+result);

}

}

}

**Output:**

the final string:Computer Science Program

**20. Write a Java program to print Even length words in a String.**

**package** day3assignment;

**import** java.util.Scanner;

**public** **class** Evenstring {

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

System.***out***.println("enter a string");

String str = sc.nextLine();

String[] str1=str.split(" ");

**for**(String word : str1) {

**if**(word.length()%2==0) {

System.***out***.println(word);

}

}

}

}

**Output:**

enter a string

This is a java language

This

is

java

language

**output:**

enter a string

i am Tester

am

Tester