**Exercise 1:** *Write a program with a class name “Welcome” and display a message as follows: “Welcome*

*to the world of Java”*

**Solution 1:**

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: Printing a statement

\*/

**public** **class** Welcome {

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

// **TODO** Auto-generated method stub

//Printing a statement

System.***out***.println("Welcome to the world of Java");

}

}

**Exercise 2 :** *Write a program that takes a console input (Input given by the user while executing the*

*program in command line) and prints the same.*

**Solution 2:**

**package com.hsbc.pack.hw;**

/\* Author: Diviyansha Agarwal

\* Purpose: Take a console input and print.

\*/

**public** **class** Cmdline {

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

// **TODO** Auto-generated method stub

System.***out***.println("Name is: "+args[0]);

}

}

**Exercise 3:** *Write a program with all the type of comments and execute it. User nested comments also.*

**Solution 3:**

//This is a documentation comment

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: Different Types of Comments.

\* This is a multiline comment

\*/

**public** **class** Solution3 {

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

// **TODO** Auto-generated method stub

//Adding two numbers(Single Line Comment)

**int** sum=5+4;

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

}

}

**Exercise 4:** *Write a program which declares variables of int, float, double data types and a constant of*

*long data type and displays all with an appropriate message. Follow the naming conventions*

*for all the variables and literals.*

**Solution 4:**

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: Printing different types of data types with correct naming convention.

\*/

**public** **class** Solution4 {

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

// **TODO** Auto-generated method stub

**int** num1=1;

**double** num2=51.75d;

**float** num3=1.05f;

**final** **long** NUM4=1500\_100\_200\_311l;

System.***out***.println("The datatype is integer: "+num1);

System.***out***.println("The datatype is double: "+num2);

System.***out***.println("The datatype is float: "+num3);

System.***out***.println("The datatype is long: "+NUM4);

}

}

**Exercise 5:** *Write a program to get two numbers as input through command line and swap the values of*

*two numbers without using a temporary variable and display the same.*

**Solution 5:**

**package com.hsbc.pack.hw;**

/\* Author: Diviyansha Agarwal

\* Purpose:Swapping two numbers using temporary variables using command line argument.

\*/

**public class Solution5 {**

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

**// TODO Auto-generated method stub**

**int a=Integer.parseInt(args[0]);**

**int b=Integer.parseInt(args[1]);**

**System.out.println("Numbers before swapping: ");**

**System.out.println("a: "+a+" b: "+b);**

**a=a+b;**

**b=a-b;**

**a=a-b;**

**System.out.println("Numbers after swapping: ");**

**System.out.println("a: "+a+" b: "+b);**

**}**

**}**

**Exercise 6:** *Write a program to determine whether the given year is leap year or not(Get the input*

*through command line).*

**Solution 6:**

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: To check whether a leap year or not.

\*/

//Class Definition

**public** **class** Solution6 {

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

// **TODO** Auto-generated method stub

**int** year=Integer.*parseInt*(args[0]);

**boolean** leap=**false**;

**if**(year%4==0)

{

**if**(year%100==0)

{

**if**(year%400==0)

{

leap=**true**;

}

**else**

leap=**false**;

}

**else**

leap=**true**;

}

**else**

leap=**false**;

**if**(leap)

{

System.***out***.println(year+" is a leap year.");

}

**else**

System.***out***.println(year+" is not a leap year.");

}

}

//End

**Exercise 7:** *Write a program to determine the largest of three numbers.*

**Solution 7:**

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: Largest of three numbers

\*/

//Class Definition

**public** **class** Solution7 {

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

// **TODO** Auto-generated method stub

**int** a=3,b=4,c=8;

**if**((a>=b)&&(a>=c))

{

System.***out***.println("a is largest of all.");

}

**else** **if**((b>a)&&(b>=c))

{

System.***out***.println("b is largest of all.");

}

**else**

System.***out***.println("c is largest of all.");

}

}

//End

**Exercise 8:** *Write a program to determine whether a number is a palindrome or not.*

**Solution 8:**

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: Palindrome Number

\*/

//Class Definition

**public** **class** Solution8 {

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

// **TODO** Auto-generated method stub

**int** num=Integer.*parseInt*(args[0]);

**int** revNum=0,copy=0,remainder=0;

copy=num;

**while**(copy!=0)

{

remainder=copy%10;

revNum=revNum\*10+remainder;

copy=copy/10;

}

**if**(num==revNum) {

System.***out***.println(num+" is a Palindrome Number.");

}

**else**

System.***out***.println(num+" is not a Palindrome Number.");

}

}

//End

**Exercise 9:** *Write a program to display the Fibonacci series starting from 0 till 200.*

**Solution 9:**

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: Fibonacci series from 0 till 200

\*/

//Class Definition

**public** **class** Solution9 {

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

// **TODO** Auto-generated method stub

**int** a=0,b=1,sum=0;

**for**(**int** i=1;i<=200;i++)

{

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

sum=a+b;

a=b;

b=sum;

**if**(sum>=200) {

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

**break**;

}

}

}

}

//End

**Exercise 10:** *Write a program to declare a set of 5 words and reverse each word and arrange the resulting*

*words in alphabetical order and display the same.*

**Solution 10:**

**package** com.hsbc.pack.hw;

/\* Author: Diviyansha Agarwal

\* Purpose: to declare a set of 5 words and reverse each word and arrange the resulting

\* words in alphabetical order and display the same.

\*/

//Class Definition

**public** **class** Solution10 {

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

// **TODO** Auto-generated method stub

String arr[]= {"apple","mango","banana","grapes","cherry"};

String[] arr1=**new** String[5];

**int** k=0;

String temp;

//Reversing the words.

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

StringBuilder sb=**new** StringBuilder(arr[i]);

sb.reverse();

arr1[k]=sb.toString();

k++;

}

//sorting the words

**for** (**int** i = 0; i < 5; i++)

{

**for** (**int** j = i + 1; j < 5; j++) {

**if** (arr1[i].compareTo(arr1[j])>0)

{

temp = arr1[i];

arr1[i] = arr1[j];

arr1[j] = temp;

}

}

}

//Printing the words.

System.***out***.print("Strings in Sorted Order:");

**for** (**int** i = 0; i <5; i++)

{

System.***out***.print(arr1[i] + ", ");

}

}

}

//End

**Exercise 11:** *Write a program to arrange an array of elements in ascending order using selection sort*

*algorithm.*

**Solution 11:**

**package** com.hsbc.pack.hw;

**import** java.util.Scanner;

/\* Author: Diviyansha Agarwal

\* Purpose: to declare a set of 5 words and reverse each word and arrange the resulting

\* words in alphabetical order and display the same.

\*/

//Class Definition

**public** **class** Solution11

{

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

{

**int** size, i, j, temp;

**int** arr[] = **new** **int**[75];

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

System.***out***.print("Enter Array Size : ");

size = sc.nextInt();

System.***out***.print("Enter Array Elements : ");

**for**(i=0; i<size; i++)

{

arr[i] = sc.nextInt();

}

**for**(i=0; i<size; i++)

{

**for**(j=i+1; j<size; j++)

{

**if**(arr[i] > arr[j])

{

temp = arr[i];

arr[i] = arr[j];

arr[j] = temp;

}

}

}

System.***out***.print("Now the Array after Sorting is :\n");

**for**(i=0; i<size; i++)

{

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

}

}

}

//End

**Exercise 12:** *A shopkeeper sells three products whose retail prices are as follows:*

*Product 1 - 22.50*

*Product 2 - 44.50*

*Product 3 - 9.98*

*Write an application that reads a series of pairs of numbers as follows:*

*a) Product number*

*b) Quantity sold*

*The application should use a switch statement to determine the retail price for each product. It*

*should calculate and display the total retail value of all products sold.*

**Solution 12:**

**package** com.hsbc.pack.hw;

**import** java.util.Scanner;

/\* Author: Diviyansha Agarwal

\* Purpose: display the total retail value of all products sold.

\*/

**public** **class** Solution12 {

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

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

**double** product\_Cost=0.0;

**double** totalRetailValue=0.0;

**int** flag=0;

System.***out***.println("Enter the product number");

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

System.***out***.println("Enter the product quantity");

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

**switch**(productNumber) {

**case** 1:

product\_Cost=22.50;

totalRetailValue=product\_Cost\*productQuantity;

**break**;

**case** 2:

product\_Cost=44.50;

totalRetailValue=product\_Cost\*productQuantity;

**break**;

**case** 3:

product\_Cost=9.98;

totalRetailValue=product\_Cost\*productQuantity;

**break**;

**default**:

flag=1;

System.***out***.println("Invalid Value");

}

**if**(flag==0)

{

System.***out***.println("The total retail value of product "+productNumber+" with quantity "+productQuantity+" is: "+totalRetailValue);

}

}

}

//End

**Exercise 13:** *Consider user has N eggs. Then display the no of eggs in gross (144 eggs make one gross) and no of eggs in dozen (12 eggs make one dozen) and the no of eggs that is left out remaining.*

*The total no of eggs can be got as input through command line. The program should display*

*how many gross, how many dozen, and how many left over eggs the user has.*

**Solution 13:**

**package** com.hsbc.pack.hw;

**import** java.util.Scanner;

/\* Author: Diviyansha Agarwal

\* Purpose: The program should display how many gross, how many dozen, and how many left over eggs the user has.

\*/

//Class Definition

**public** **class** Solution13 {

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

// **TODO** Auto-generated method stub

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

System.***out***.println("Enter the number of eggs.");

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

**int** rem=0,gross=0,remDozen=0,dozen=0;

rem=num%144;

gross=(num-rem)/144;

remDozen=rem%12;

dozen=(rem-remDozen)/12;

System.***out***.println("Your number of eggs is "+gross+" gross, "+dozen+" dozen, and "+remDozen);

}

}

//End