**Day - 1 - Solution**

**Ankit Rupapara**

**Lab Exercise No:** 1

**Exercise Objective(s):** *Simple java program*

**Exercise:** *Write a program with a class name “Welcome” and display a message as follows: “Welcome to the world of Java”*

**Solution Code :**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

**public** **class** Solution1 {

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

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

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

}

}

*--------------------------------------------------------------------------------------------------------------------*

**Lab Exercise No:** 2

**Exercise Objective(s):** *Compilation and execution from command line, Concept of object and class*

**Exercise:** *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 Code :**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

**public** **class** Solution2 {

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

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

System.***out***.println("User input Message is " + args[0]); //args[0] is the first program argument given by user.

}

}

**Lab Exercise No:** 3

**Exercise Objective(s):** *Comments in java programs and java documentation*

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

**Solution Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

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

// This is my First Single Line Comment

/\* This is

Multi-line Comment\*/

/\* This is

// This is Nested Comment

Multi-line Comment\*/

}

}

**JAVA**

**Basic elements of Java**

**Lab Exercise No:** 4

**Exercise Objective(s):** *Primitive data types and their range, Variables, Constants and literals,*

*Conventions*

**Exercise:** *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 Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

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

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

**int** varInt = 5; //Integer Variable

**float** varFloat = 13.13f; //Float Variable

**double** varDouble = 2.13d; //Double Variable

**long** varLong = 13000000000L; //Long Variable

System.***out***.println("Integer variable is " + varInt);

System.***out***.println("Float variable is " + varFloat);

System.***out***.println("Double variable is " + varDouble);

System.***out***.println("Long variable is " + varLong);

}

}

**Lab Exercise No:** 5

**Exercise Objective(s):** *Simple operators*

**Exercise:** *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 Code:**

**package** pack.ankit.com;//package name

//ClassName should be same as FileName

**public** **class** Solution5 {

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

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

System.***out***.println("Original numbers are "+ args[0] + " " + args[1]);

//use of Integer.*toString and* Integer.*parseInt will let us convert from Integer to String or vice versa*

args[0] = Integer.*toString*(Integer.*parseInt*(args[0]) + Integer.*parseInt*(args[1]));

args[1] = Integer.*toString*(Integer.*parseInt*(args[0]) - Integer.*parseInt*(args[1]));

args[0] = Integer.*toString*(Integer.*parseInt*(args[0]) - Integer.*parseInt*(args[1]));

System.***out***.println("Swapped numbers are "+ args[0] + " " + args[1]);

}

}

**Lab Exercise No:** 6

**Exercise Objective(s):** *Conditional statements*

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

*through command line).*

**Solution Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

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

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

**int** year = Integer.*parseInt*(args[0]); // String to Integer Conversion

**boolean** leapYear = **false**;

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

{

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

{

// year is divisible by 400, hence the year is a leap year

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

leapYear = **true**;

**else**

leapYear = **false**;

}

**else**

leapYear = **true**;

}

**else**

leapYear = **false**;

**if**(leapYear)

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

**else**

System.***out***.println("Entered year "+ year + " isn't a leap year.");

}

}

**Lab Exercise No:** 7

**Exercise Objective(s):** *Conditional statements*

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

**Solution Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

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

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

//String to Integer conversion using Integer.parseInt

**int** num1 = Integer.*parseInt*(args[0]);

**int** num2 = Integer.*parseInt*(args[1]);

**int** num3 = Integer.*parseInt*(args[2]);

**if**(num1 > num2 && num1 > num3)

{

System.***out***.println("Largest number among all is: "+num1);

}

**else** **if**(num2 > num3)

{

System.***out***.println("Largest number among all is: "+num2);

}

**else**

{

System.***out***.println("Largest number among all is: "+num3);

}

}

}

**Lab Exercise No:** 8

**Exercise Objective(s):** *Loops*

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

**Solution Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

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

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

**int** length = args[0].length() ;

**boolean** palindrome = **true**;

**int** i = 0;

// We are taking the input as a string even if it is a number and that'll give us a easy solution.

**while**(i != length/2) {

**if**(args[0].charAt(length-i-1) != args[0].charAt(i))

{

palindrome = **false**;

**break**;

}

i++;

}

**if**(palindrome)

System.***out***.println("Entered Number " + args[0] + " is a palindrome");

**else**

System.***out***.println("Entered Number " + args[0] + " isn't a palindrome");

}

}

**Lab Exercise No:** 9

**Exercise Objective(s):** *Loops*

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

**Solution Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

**static** **int** *num1*=0;

**static** **int** *num2*=1;

**static** **int** *num3*;

**static** **int** *count* = 2;

**static** **void** printFibonacci(**int** count){

//if last number was greater 200 then It won't print but we have to break the recursion. So this if statement will do that for us.

**if**(*num2*<200){

*num3* = *num1* + *num2*;

*num1* = *num2*;

*num2* = *num3*;

**if**(*num3*<=200)

System.***out***.print(" "+*num3*);

*printFibonacci*(++count);

}

}

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

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

System.***out***.print(*num1*+" "+*num2*);//printing 0 and 1

*printFibonacci*(*count*);//n-2 because 2 numbers are already printed

}

}

**Lab Exercise No:** 10

**Exercise Objective(s):** *Constants and literals, Loops*

**Exercise:** *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 Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

**import** java.util.Arrays;

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

//to reverse the string we can use StringBuilder which will create a string and then we can reverse it.

**public** **static** String reverseString(String str){

StringBuilder strbld=**new** StringBuilder(str);

strbld.reverse();

**return** strbld.toString();

}

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

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

String[] words = {"apple", "call", "dat", "db", "all"};

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

{

words[i] = *reverseString*(words[i]);

}

Arrays.*sort*(words); //sort all updated words using Arrays.sort() for which we have to import java.util.Arrays

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

{

System.***out***.println(words[i]);

}

}

}

**Lab Exercise No:** 11

**Exercise Objective(s):** *Constants and literals, Loops*

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

*algorithm.*

**Solution Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

**public** **class** Solution11 {

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

**int** array[] = {15, 10, 7, 3, 99};

**int** length = array.length;

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

**int** min = i;

//this loop will go from i to end of loop

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

**if** (array[j] < array[min]){

min = j;

}

}

**int** temp = array[min];

array[min] = array[i];

array[i] = temp;

}

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

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

}

}

}

**Lab Exercise No:** 12

**Exercise Objective(s):** *Conditional statements, Loops*

**Exercise:** *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 Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

//Function which will return product price using Switch case

**static** **double** priceGetter(**int** productNumber)

{

**double** price = 0 ;

**switch**(productNumber) {

**case** 1 : {

price = 22.50;

**break**;

}

**case** 2 : {

price = 44.50;

**break**;

}

**case** 3: {

price = 9.98;

**break**;

}

}

**return** price;

}

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

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

**double** totalPrice = 0;

**int** i = 0;

//Every time 2 argument from all arguments will be taken and totalPrice will be updated

**while**(i < args.length)

{

totalPrice += *priceGetter*(Integer.*parseInt*(args[i])) \* Integer.*parseInt*(args[i+1]);

i += 2;

}

System.***out***.println("Total Retail Value of all sold products is " + totalPrice);

}

}

**Lab Exercise No:** 13

**Exercise Objective(s):** *Simple operators, Conditional statements, Loops*

**Exercise:** *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 Code:**

**package** pack.ankit.com; //package name

//ClassName should be same as FileName

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

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

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

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

// since totalEggs is integer all the division will result in integer that'll give us direct answers from each category and remaining eggs can be derived using modulus

System.***out***.println("Gross Eggs : " + totalEggs/144);

totalEggs = totalEggs % 144;

System.***out***.println("Gross Eggs : " + totalEggs/12);

totalEggs = totalEggs % 12;

System.***out***.println("Gross Eggs : " + totalEggs);

}

}