Programming – Week2 Lab Book

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Haaris Infotech Workbooks

1. Java Program to Add Two Numbers.

```
class Addition {
         public static void main(String[] args) {
            System.out.println("Enter two numbers");
           int first = 100;
           int second = 200;
           System.out.println(first + " " + second);
           // add two numbers
           int sum = first + second;
           System.out.println("The sum is: " + sum);
         }

}
```

2. Java Program to Print an Integer (Entered by the User)

In this program, you'll learn to print a number entered by the user in Java. The integer is stored in a variable using System.in, and is displayed on the screen using System.out.

```
import java.util.Scanner;
public class PrintANumber {
    public static void main(String[] args) {

        // Creates a reader instance which takes
        // input from standard input - keyboard
        Scanner reader = new Scanner(System.in);
        System.out.print("Enter a number: ");

        // nextInt() reads the next integer from the keyboard
        int number = reader.nextInt();

        // println() prints the following line to the output screen
        System.out.println("You entered: " + number);
    }

}
```

3. Multiply Two Numbers.

```
import java.util.Scanner;

public class Basic2 {
      public static void main(String[] args) {
            Scanner scan=new Scanner(System.in);

            System.out.println("Enter value for i..:");

            int i=scan.nextInt();
```

```
            System.out.println("Enter value for j...:");

            int j=scan.nextInt();

            int mul=i*j;

            System.out.println("The Multiplication of i and j is..:"+mul);
      }
}
```

4. TypeCasting

```
public class CastingExercise {
      //Dont run this program - Just type and understanding how casting works
      public static void main(String[] args) {
      byte b=10;

      int i=b;// will accept - automatic type promotion

      byte c=i;// will not accept - because lower type cannot be put in higher

      byte d=(byte)i;// Type casting makes it possible to store compatible types.

      byte x=10;
      byte y=20;

      byte sum=x*y; // Error is thrown because when two bytes are used in a
arthmetic operation, the result will be integer

      }
}
```

5. Find the ASCII Value

```
public class PrintAsciiValue {
    public static void main(String[] args) {
        char ch = 'H';
        int ascii = ch;
        // You can also cast char to int
        int castAscii = (int) ch;
        System.out.println("The ASCII value of " + ch + " is: " + ascii);
        System.out.println("The ASCII value of " + ch + " is: " + castAscii);
    }

      }
```

6. Computer Quotient and Remainder

```
public class QuotientRemainder {

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

```
            int dividend = 25, divisor = 4;

            int quotient = dividend / divisor;
            int remainder = dividend % divisor;

            System.out.println("Quotient = " + quotient);
            System.out.println("Remainder = " + remainder);
          }

    }
```

```
import java.util.Scanner;
class OddOrEven
{
  public static void main(String args[])
  {
    int num;
    System.out.println("Enter an Integer number:");

    //The input provided by user is stored in num
    Scanner input = new Scanner(System.in);
    num = input.nextInt();

    /* If number is divisible by 2 then it's an even number
     * else odd number*/
    if ( num % 2 == 0 )
        System.out.println("Entered number is even");
     else
        System.out.println("Entered number is odd");
  }

    }
```

7. Given a Character check whether it’s a vower or not.

```
public class Vowel {

    public static void main(String[] args) {

        char ch = 'i';

        if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u' )
            System.out.println(ch + " is vowel");
        else
            System.out.println(ch + " is consonant");

    }

}
```

8. Find the largest among 3 numbers using if-else-if

```
public class LargestNumber {
    public static void main(String[] args) {
```

```
        double n1 = -5.5, n2 = 4.5, n3 = 3.5;

        if( n1 >= n2 && n1 >= n3)
            System.out.println(n1 + " is the largest number.");

        else if (n2 >= n1 && n2 >= n3)
            System.out.println(n2 + " is the largest number.");

        else
            System.out.println(n3 + " is the largest number.");
    }

}
```

9. Swap Two Numbers

```
public class SwapTwoNumbersExercise {

    public static void main(String[] args) {

        float first = 2.50f, second = 4.50f;

        System.out.println("--Before swap--");
        System.out.println("First number = " + first);
        System.out.println("Second number = " + second);

        // Value of first is assigned to temporary
        float temporary = first;

        // Value of second is assigned to first
        first = second;

        // Value of temporary (which contains the initial value of first) is
assigned to second
        second = temporary;

        System.out.println("--After swap--");
        System.out.println("First number = " + first);
        System.out.println("Second number = " + second);
    }

}
```

10. Check whether a given number is ODD or EVEN ?

```
import java.util.Scanner;

public class EvenOdd {

    public static void main(String[] args) {

        Scanner reader = new Scanner(System.in);

        System.out.print("Enter a number: ");
        int num = reader.nextInt();

        if(num % 2 == 0)
            System.out.println(num + " is even");
        else
            System.out.println(num + " is odd");
    }

}
```

11. Java nested for loop

```
public class NestedForLoop{
public static void main(String[] args) {
	for(int i=1;i<=3;i++){
			for(int j=1;j<=3;j++){
					System.out.println(i+" "+j);
				}
		}
	}
}
```

12. Pyramid Examples

```
public class PyramidExample {
public static void main(String[] args) {
for(int i=1;i<=5;i++){
	for(int j=1;j<=i;j++){
		System.out.print("* ");
		}
	  System.out.println();//new line
	}
	}
}

public class PyramidExampleReverse {
public static void main(String[] args) {
		int term=6;
		for(int i=1;i<=term;i++)
			{
				for(int j=term;j>=i;j--)
				{
					System.out.print("* ");
				}
				System.out.println();//new line
			}
		}
}

Floyd Triangle

import java.util.Scanner;
	class FloydsTriangle
	{
		public static void main(String args[])
	    {
		   int rows, number = 1, counter, j;
		   //To get the user's input
		   Scanner input = new Scanner(System.in);
		   System.out.println("Enter the number of rows for floyd's
triangle:");
		   //Copying user input into an integer variable named rows
		   rows = input.nextInt();
		   System.out.println("Floyd's triangle");
```

```
            System.out.println("****************");
            for ( counter = 1 ; counter <= rows ; counter++ )
            {
                for ( j = 1 ; j <= counter ; j++ )
                {
                     System.out.print(number+" ");
                     //Incrementing the number value
                     number++;
                }
                //For new line
                System.out.println();
            }
        }
    }
```

13. While Loop Demonstration

```
import java.util.Scanner;

public class WhileLoopDemo {
       public static void main(String[] args) {
         int number, sum = 0;
         Scanner sc = new Scanner(System.in);

         System.out.println("n Please Enter any integer Value below 10: ");
         number = sc.nextInt();

         while (number <= 10)  {
             sum = sum + number;
             number++;
         }
         System.out.format(" Sum of the Numbers From the While  Loop is: %d ",
sum);
     }
}
```

14. Do..While Loop

```
public class DoWhileLoo {
        public static void main(String args[]) {
             int x = 1;

             do {
                System.out.print("value of x : " + x );
                x++;
                System.out.print("\n");
             }while( x < 11 );
          }
}
```

15. Switch Case

```
public class SwitchCase {
       public static void main(String args[]){
              int tech = 2;

              switch(tech){
              case 1:
              {
                     System.out.println("java");
                     break;
                }
              case 2:{
                     System.out.println("ES6");
                     break;
              }
              default:{
                     System.out.println("Not Listed..");
              }
              }
              }
```

```
}
```

16. Nested Switch Case

```
public class NestedSwitchCase {
	public static void main(String args[]){
		int tech = 2;
		int course = 2;

		switch(tech){
		case 1:
			System.out.println("python");
			break;
		case 2:
			switch(course){
			case 1:
				System.out.println("J2EE");
				break;
			case 2:
				System.out.println("advance java");
			}
		  }
		}
}
```

17. Area of a Rectangle

```
import java.util.Scanner;
class FindAreaOfRectangle
{
	 public static void main (String[] args)
	   {
		Scanner scanner = new Scanner(System.in);
		System.out.println("Enter the length of Rectangle:");
		double length = scanner.nextDouble();
		System.out.println("Enter the width of Rectangle:");
		double width = scanner.nextDouble();
		//Area = length*width;
		double area = length*width;
		System.out.println("Area of Rectangle is:"+area);
	   }
}
```

18. Area of a Square

```
import java.util.Scanner;
class FindAreaOfSquare
{
	public static void main (String[] args)
	   {
		System.out.println("Enter Side of Square:");
		//Capture the user's input
		Scanner scanner = new Scanner(System.in);
```

```
            //Storing the captured value in a variable
            double side = scanner.nextDouble();
            //Area of Square = side*side
            double area = side*side;
            System.out.println("Area of Square is: "+area);
        }
}
```

19. Area of Triangle

```
import java.util.Scanner;
class FindAreaOfTriangle
{
      public static void main(String args[]) {
            Scanner scanner = new Scanner(System.in);

            System.out.println("Enter the width of the Triangle:");
            double base = scanner.nextDouble();

            System.out.println("Enter the height of the Triangle:");
            double height = scanner.nextDouble();

            //Area = (width*height)/2
            double area = (base* height)/2;
            System.out.println("Area of Triangle is: " + area);
        }
}
```

20. Find Area of Circle

```
class FindAreaOfCircle
{
      public static void main(String args[])
        {
            Scanner scanner = new Scanner(System.in);

            System.out.print("Enter the radius: ");
            /*We are storing the entered radius in double
             * because a user can enter radius in decimals
             */
            double radius = scanner.nextDouble();
            //Area = PI*radius*radius
            double area = Math.PI * (radius * radius);
            System.out.println("The area of circle is: " + area);
            //Circumference = 2*PI*radius
            double circumference= Math.PI * 2*radius;
            System.out.println( "The circumference of the circle
is:"+circumference) ;
        }
}
```

21. Reversing a Number

```
class ReverseANumber
{
```

```
        public static void main(String args[])
           {
              int num=0;
              int reversenum =0;
              System.out.println("Input your number and press enter: ");
              //This statement will capture the user input
              Scanner in = new Scanner(System.in);
              //Captured input would be stored in number num
              num = in.nextInt();
              //While Loop: Logic to find out the reverse number
              while( num != 0 )
              {
                  reversenum = reversenum * 10;
                  reversenum = reversenum + num%10;
                  num = num/10;
              }

              System.out.println("Reverse of input number is: "+reversenum);
           }
}
```

22. Display Prime Numbers

The number which is only divisible by itself and 1 is known as prime number. For example 2, 3, 5, 7…are prime numbers.

```
class DisplayPrimeNumbers
{
        public static void main (String[] args)
           {
               int i =0;
               int num =0;
               //Empty String
               String  primeNumbers = "";

               for (i = 1; i <= 100; i++)
               {
                  int counter=0;
                  for(num =i; num>=1; num--)
                {
                     if(i%num==0)
                   {
                     counter = counter + 1;
                   }
                }
                if (counter ==2)
                {
                   //Appended the Prime number to the String
                   primeNumbers = primeNumbers + i + " ";
                }
               }
               System.out.println("Prime numbers from 1 to 100 are :");
               System.out.println(primeNumbers);
           }
```

```
}
```

23. Check given a number is prime or not

```
import java.util.Scanner;
class CheckPrime
	{
		public static void main(String args[])
		   {
		       int temp;
		       boolean isPrime=true;
		       Scanner scan= new Scanner(System.in);
		       System.out.println("Enter any number:");
		       //capture the input in an integer
		       int num=scan.nextInt();
		         scan.close();
		       for(int i=2;i<=num/2;i++)
		       {
		            temp=num%i;
		          if(temp==0)
		          {
		             isPrime=false;
		             break;
		          }
		       }
		       //If isPrime is true then the number is prime else not
		       if(isPrime)
		          System.out.println(num + " is a Prime Number");
		       else
		          System.out.println(num + " is not a Prime Number");
		   }
	}
```

24. Program to Sum the elements of an Array

```
	class SumOfArrrayValues
	{
		public static void main(String args[]){
			int[] array = {10, 20, 30, 40, 50, 10};
			int sum = 0;
			//Advanced for loop
			for( int num : array) {
			    sum = sum+num;
			}
			System.out.println("Sum of array elements is:"+sum);
		   }
	}
```

25. User Inputting Array Elements

```
import java.util.Scanner;
	class ArrayInput
	{
```

```
        public static void main(String args[]){
              Scanner scanner = new Scanner(System.in);
              int[] array = new int[10];
              int sum = 0;
              System.out.println("Enter the elements:");
              for (int i=0; i<10; i++)
              {
                 array[i] = scanner.nextInt();
              }
              for( int num : array) {
                  sum = sum+num;
              }
              System.out.println("Sum of array elements is:"+sum);
           }
    }
```