1) Java Introduction and Language Fundamentals !!

WelcomeToJavaWorld.java

```
package com.langfunda;
//A simple Java program with command line arguments through Eclipse !!
public class WelcomeToJavaWorld {
    public static void main(String[] args) {
        System.out.println("Hello main method !!");
        System.out.println("Welcome to java world");
        System.out.println(100);
        // The below one is for each loop
        // It will executes for each element from the collection of elements
        for (String arg : args) {
            System.out.println(arg);
        }
    }
}
```

TestDemo1.java

```
package com.langfunda;
//1)Write a simple program for what a class can contains exactly ?
//static and instance variables
//static and instance methods
//static and instance blocks
//And constructors !!
//JVM will load the data with below order
//1) static variables will load 1st if we have in class.
//2) static blocks will load 2nd if there is any.
```

```java
//3) static main method will load next, of course without main method
program will not executes.
//4) static methods will load in the next order but we need to call
static methods explicitly to execute .
//5) If you created an object at any point of time first instance
block will
//executes next instance variables will executes and finally instance
will load and we need to call explicitly instance methods
public class TestDemo1 {
    // constructor or Special method
    TestDemo1() {
        System.out.println("Hello TestDemo1 constructor !!");
    }
    // instance data or non static
    int id;
    String name;
    // static data
    static int collegeID;
    static String collegeName;
    // main method
    public static void main(String[] args) {
        System.out.println("Hello main method !!");
        // Creating an Object of my class
        TestDemo1 t1 = new TestDemo1();
        // calling a static method
        method1();
        // Calling a instance method
        // Cannot make a static reference to the non-static method
method2() from the
        // type TestDemo1
        t1.method2();
    }
//  static method
    static void method1() {
        System.out.println("Hello static method1!!");
    }
    // instance method
    void method2() {
        System.out.println("Hello instance method !!");
    }
```

```
    // static block
    static {
        System.out.println("Hello static block !!");
    }
    // instance block
    {
        System.out.println("Hello instance block ");
    }
}
```

JVMArchitectureDemo.java

```
package com.langfunda;
public class JVMArchitectureDemo {
    // instance data
    int jersyNo;
    String name;
    // static data
    static int bcciId;
    static String country;
    public static void main(String[] args) {
        // Creating Object1 info
        System.out.println("Object1 Info !!");
        JVMArchitectureDemo j = new JVMArchitectureDemo();
        bcciId = 1;
        country = "India";
        j.jersyNo = 45;
        j.name = "Rohit Shrma";
        System.out.println(bcciId);// 1
        System.out.println(country);// India
        System.out.println(j.jersyNo);// 45
        System.out.println(j.name);// Rohit Shrma
        System.out.println("Object2 info !!");
        JVMArchitectureDemo j1 = new JVMArchitectureDemo();
        j1.jersyNo = 18;
        j1.name = "Virat Kohli";
        System.out.println(bcciId);
        System.out.println(country);
```

```
        System.out.println(j1.jersyNo);
        System.out.println(j1.name);
        System.out.println("Object3 info !!");
        JVMArchitectureDemo j2 = new JVMArchitectureDemo();
        bcciId = 777;
        country = "CSK";
        j2.jersyNo = 7;
        j2.name = "Dhoni";
        System.out.println(bcciId);
        System.out.println(country);
        System.out.println(j2.jersyNo);
        System.out.println(j2.name);
        System.out.println("Object4 info !!");
        JVMArchitectureDemo j3 = new JVMArchitectureDemo();
        j3.jersyNo = 8;
        j3.name = "Jadeja";
        System.out.println(bcciId);
        System.out.println(country);
        System.out.println(j3.jersyNo);
        System.out.println(j3.name);
    }
}
```

Employee.java

```
package com.langfunda;
public class Employee {
    // instance data
    int empId;
    String empName;
    // static data
    static String empCompanyName = "Vcube";
    static int empCompanyId = 555;
    public static void main(String[] args) {
        System.out.println("Object1 info !!");
        Employee e = new Employee();
        e.empId = 1;
        e.empName = "Pawan Kalyan";
        System.out.println(empCompanyName);
```

```
        System.out.println(empCompanyId);
        System.out.println(e.empId);
        System.out.println(e.empName);
        System.out.println("Object2 info !!");
        Employee e1 = new Employee();
        empCompanyName = "Sri5IT";
        empCompanyId = 9;
        e1.empId = 2;
        e1.empName = "Mahesh Babu";
        System.out.println(empCompanyName);
        System.out.println(empCompanyId);
        System.out.println(e1.empId);
        System.out.println(e1.empName);
        System.out.println("Object3 info !!");
        Employee e2 = new Employee();
        System.out.println(empCompanyName);
        System.out.println(empCompanyId);
        System.out.println(e2.empId);
        System.out.println(e2.empName);
    }
}
```

TestDemo2.java

```
package com.langfunda;
public class TestDemo2 {
    public static void main(String[] args) {
        System.out.println("Hello main method!!");
        // calling static method1
        method1();
        // Creating an Object of my class
        TestDemo2 t = new TestDemo2();
        // calling instance method
        t.method2();
        t.method4();
    }
    // instance method
    void method2() {
```

```
        System.out.println("Hello method2 !!");
        // calling instance method directly in instance method, no
need to create an
        // Object
        method4();
        // calling static method directly in instance method
        method3();
    }
    // static method
    static void method1() {
        System.out.println("Hello method1");
        // calling static method in static method
        method3();
    }
    // static method
    static void method3() {
        System.out.println("hello static method3 !!");
    }
    // instance method
    void method4() {
        System.out.println("Hello instance method4 !!");
    }
}
```

DataTypesDemo.java

```
package com.langfunda;
public class DataTypesDemo {
    byte b; // 1 byte 8 bits, range is -128 to 127
    short s;// 2bytes 16 bits, range id -32768 to 32767
    int i = 'A';// 4 bytes 32 bits, range -2147483648 to 2147483647
    long l;// 8 bytes 64 bits
    float f;// 4 bytes 32 bits
    double d;// 8 bits 64 bits
    char c = '1';// 2 bytes and the range starts from 0 and ends
with 65535.
    char c1 = 65;// ASCII code
```

```
    char c2 = '\u0040';// unicode
    boolean b1;// boolean Literals are either (true or false)
    public static void main(String[] args) {
        DataTypesDemo dt = new DataTypesDemo();
        System.out.println("byte value : " + dt.b);// 0
        System.out.println("short value : " + dt.s);// 0
        System.out.println("int value is :" + dt.i);// 0
        System.out.println("long value : " + dt.l);// 0
        System.out.println("float value :" + dt.f);// 0.0
        System.out.println("double value :" + dt.d);// 0.0
        System.out.println("char value is :" + dt.c);//
        System.out.println("char value is :" + dt.c1);//
        System.out.println("char value is :" + dt.c2);//
        System.out.println("boolean value : " + dt.b1);// false
    }
}
```