1. Write a program to print "Hello World" on Console.
2. Write a program to print default values of all primitive types.
3. Write a program to declare all primitive data types with all possible types of initialization and also check implicit and explicit type casting by assigning them to each other.
4. Write a program to find weather a number is Prime or not
5. Write a program to calculate average of the n number using a separate function other than main.
6. Write a program to resize an array. – cant resize an array
7. Write a program to sort an array element in ascending or descending order
8. Write a program to find the location of element in the Array.
9. Write a program to reverse elements in the Array
10. Write a program to display number matrix as follows using Two Dimensional Rectangular Array.

```
1   2   3   4
5   6   7   8
9   10  11  12
13  14  15  16
```

11. Write a program to display number matrix as follows using Two Dimensional Rectangular Array.

```
1
2   3
4   5   6
7   8   9   10
```

12. Write a Program to access command line arguments.

13.Write a Program to calculate result of students.(take no of student as rows and marks as columns of two Dimensional Array)

14.

a) Write a program with comment documentation. Execute javadoc on file and view through web browser

b) Try to execute java program by giving different name to class and file.

c) Try to execute java program by defining main

i) Without public specifier

ii) Without static modifier

iii) Without function parameter

15. Write a program :

a) To generate a Prime number list between 1 to 100

b) To check given number is an Armstrong number or perfect number or palindrome or none of these

16. Write a program to search a given element is present or not? If present, display the location and how many times it occurs

17. Write a program to test:

a) to modify const member

b) to access static member in a non -static method

c) create a class with one argument constructor and try to instantiate object without parameter

18. write a program to convert number into words

Example: 125 as one two five (or one hundred twenty five)

19. **Write a program to reverse the elements of each row in a two dimensional array**

20. **Write a program to find the largest element in each row of a two dimensional array**

21. **Write a program using Switch–case to print number of days in a month. For the month of February check for leap year and calculate.**

22. **Create a class with public, private, protected, and default data members and method members. Create an object of this class and see what kind of compiler messages you get when you try to access all the class members from out side this class**

23. **Create a class with protected data. Create a second class in the same file with a method that manipulates the protected data in the first class**

24. **Write a simple Java class for quadratic functions of the form** $f(x) = ax^2 + bx + c$.
It contain the following elements:

- **fields for values a, b, and c,**
- **A(int a,int b,intc)**
- **new Abc(2,3,4)**
- **a constructor with no parameters (setting a, b, and c to 1),**
- **a constructor with 3 parameters, to specify a, b, and c,**
- **three extractors that return the values of a, b, and c, respectively,**
- **a modifier that requires three parameters, one each to give new values to a, b, and c,**

- **a compute method that takes a parameter x and that returns the value *f(x)* for the given values of a, b, and c, and a main method that exercises each of the methods.**

25. **protected class base {**

String Method() {

return "Wow";

}

}

class dervied {

public void useD() {

base z = new base();

System.out.println("base says, " + z.Method());

}

}

Compile this and see what happens

26. **What is the problem with the following code? It compiles and runs, but the output is**

☐ numbers are the same. However, the numbers are not the same.

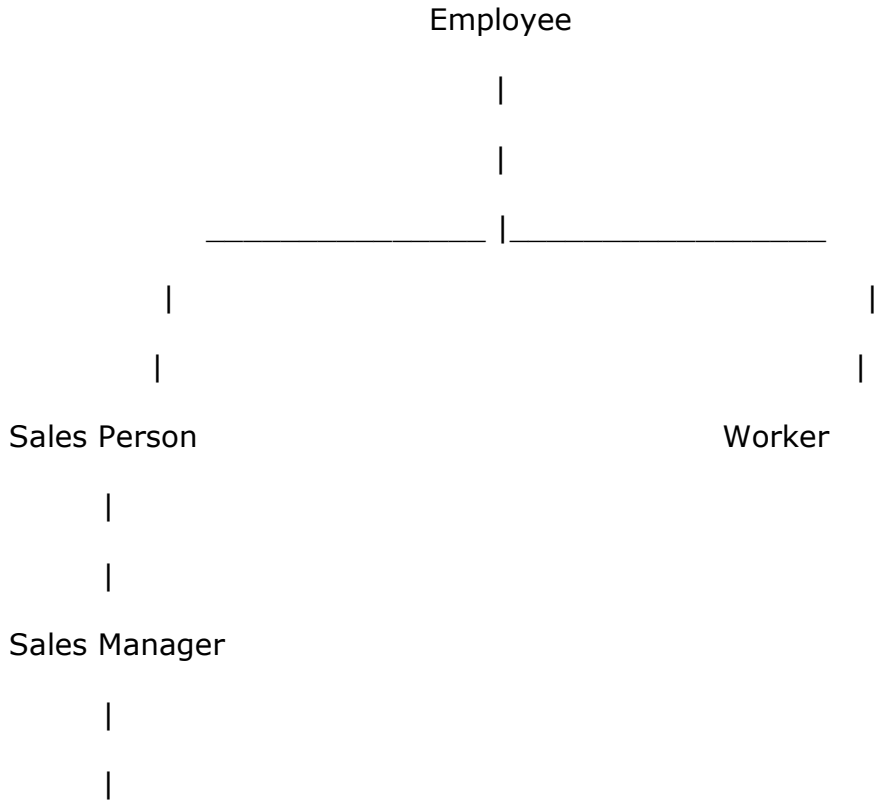
```
// sample.java


public class sample {
  public static void main(String[] args)
  {
  int i = -243;
  int j = 243;
  if(i == j);
  System.out.println("numbers are the same");
  }
}
```

27. Create a program that calculates how much a $14,000 investment would be worth if it increased in value by 40% during the first year, lost $1,500 in value the second year, and increased 12% in the third year.

Lab 2 (inheritance)

1. Write a program to prove that Primitive data types are passed by value and object and arrays are passed by reference.
2. Write a program to add two complex number using this reference
3. Write a application to implement a Pay Roll System for an Organization



Each will have Date class to represent Date of Joining

4. Write a program to implement stack of integer numbers.
5. Write a program to calculate the number of object created at any point using user defined class
6. Write a program to prove the order of initialization for static block.
7. Write a program to change state of object using the final reference variable.
8. **write a program to create Singleton Class**

   (Program should not allow more than one instance at a time)
9. **Create a class A. add public, private and protected member variable and methods. Create another class B which extends from A and add few members. Try to access a private ,public and protected members of a base class within a class B. observe the result**
10. **Create two classes, A and B, with default constructors (empty argument lists) that announce themselves. Inherit a new class called C from A, and create a member B inside C. Do not create a constructor for C. Create an object of class C and observe the results.**
11. **Modify above Exercise so that A and B have constructors with arguments instead of default constructors. Write a constructor for C and perform all initialization within C's constructor.**
12. **Create an inheritance hierarchy of Wipro: WiproTechnologies, Wipro Infotech , Wipro BPO etc. In the base class, provide methods that are common to all Wipro, and override these in the derived classes to perform different behaviors depending on the specific type of Wipro. Create an array of Wipro, fill it with different specific types of Wipro, and call your base-class methods to see what happens.**
13. **Create an abstract class with no abstract methods. Verify that you cannot create instances of the class**

14. Create a class Student consisting of name and rollno as members. Create a class exam inheriting student. It can have marks for 3 subjects. Create a class result inheriting exam contaning totalmark as member and a function to calculate the totalmark.

15. Write a program to find the cost of constructing a house creating a class called House. Create 2 classes Door and window. House has instance of door and window. House has member which provide information related to area of construction of door and window. House delegates the responsibility of calculating the cost of door and window to the respective classes

16. class X { void do1() { } }
class Y extends X { void do2() { } }

```
class Chrome {
public static void main(String [] args) {
X x1 = new X();
X x2 = new Y();
Y y1 = new Y();
(Y)X2.do2();
}
}
```

Try to rectify the error and run