1. What is object in java?

* Object is an instance of class and it has own state of behavior
* In real world we can say a person is an object of human which have different state like color, name, height, etc and behavior like walk, speak etc.

1. What is class?

* A class is the blueprint or we can say template from which individual objects are created

1. What is static variable?

* It is a variable which belongs to the class and not to object
* Static variables are initialized only once, at the beginning of the execution
* Static variable can be accessed directly by the class and doesn’t need to creating any object

1. What is the difference between static and non static variable?

* Static variable are preceded by static keyword
* Non-static variable there is not any preceding keyword
* Memory is allocated for static variable at the time of class loading
* Memory is allocated to non-static variable whenever an object Is created
* Memory is allocated only once to static variable on class loading
* Memory is allocated multiple time whenever a new object is created to non-static variable

1. What is the difference between static and not static (instance) method?

* Method declared with static keyword is static method
* If method declared without static keyword then it is instance method
* No need of object to call methods
* Object needed to call instance method
* Cannot access non static stuff inside static method directly
* We can access static and non static stuff directly inside instance method

1. What is inheritance in java?

* In java, inheritance provide mechanism using which one object of child class can acquire all the properties and behaviors of parent object
* Main usage of inheritance in java is for code re-usability and method overriding to achieve run-time polymorphism

1. Multiple inheritance is supported is java on class level? If no why?

* No, multiple inheritance is not supported in java in case of class to simplify the language and reduce the complexity

1. Why main method is static?

* As we know, we can access static stuff without creating object of class, because of static keyword with main method
* Java virtual machine can directly call it without creating object of class, this way it will provide kind of root to start execution of program

1. Can we override static methods?

* We can declare static method with same signature in subclass but it will not behave as overridden method
* So we cannot override static methods as they are part of class not object
* You can override static methods but output will be different then the expected

1. How to reverse string in java?

* String-Buffer class has a method called reverse (). We can use it to reverse the string

1. Can we overload static methods?

* Yes, there is not any restriction to overload static methods, we can overload static and non static method in java

1. Can we use private member of parent class in sub class?

* No, it will not allow to use private members like private method, variable of parent class in child class
* Private members are accessible only inside same class

1. What is interface in java?

* An interface is a blue print of class which can hold abstract methods (methods without implementation) only
* It creates rules to follow structure for class where it is implemented
* We can achieve 100% abstraction using interface in java

1. Can we access protected method of parent class in sub class?

* Yes, we can access protected members of parents class in all its sub classes and classes within the same package

1. What is array in java?

* An array is container object in java which can hold fixed number of values of same type

1. Explain system.out.println();

* System: is a final class in java.lang.package
* Out: is a static member of system class, it is an instance of java.io.printstream
* Println: is a method of java.io.printStream, it is an overloaded method

1. Write program to print fobonacci setries 0,1,1,2,3,5,8,13,21….

public class fibonaccci {

public static void main(String[] args) {

int f1 = 0;

int f2 = 1;

int sum = 0;

for(int i=0; i<=21;){

System.out.println(f1);

sum = i+f2;

f2=i;

f1=sum;

i=f1;

}

}

}

1. Write program to get result of 5^2+4^2-3^2+2^2-1^2

public class SquareSum {

public static void main(String[] args) {

int sum = 0;

for (int i=5;i>=1;i--){

if(i%2!=0){

if(sum<(i\*i)){

sum = (i\*i)-sum;

}else{

sum = sum-(i\*i);

}

}else{

sum = sum+(i\*i);

}

}

System.out.println(sum);

}

}

1. Int x=10 and y=20. Swap both variable values without using any temp variable?

public class swapNumbers {

public static void main(String[] args) {

int x = 10;

int y = 20;

System.out.println("Before swapping x = " + x + " and y = " + y);

x = x + y;

y = x - y;

x = x - y;

System.out.println("After swapping x = " + x + " and y = " + y);

}

}

1. What is local variable in java

* Local variable is declared inside method or constructor and it is limited for that method or constructor only

public class JavaVariable {

public void Calc() {

// Local Variables.

int sum;

int item1 = 5;

int item2 = 7;

sum = item1 + item2;

System.out.println("Sum is : " + sum);

}

public static void main(String args[]) {

JavaVariable j = new JavaVariable();

j.Calc();

}

}

1. What is instance variable in java?

Instance variable is defined in class. It is visible for all methods and constructor of that class

public class JavaVariable {

//Instance Variable.

int sum;

public void Calc() {

// Local Variables.

int item1 = 5;

int item2 = 7;

sum = item1 + item2;

System.out.println("Sum is : " + sum);

}

public static void main(String args[]) {

JavaVariable j = new JavaVariable();

j.Calc();

}

1. What is a class variable in java?

* Class variable is defined with static keyword in class, class variable is initialized only once
* Class variable is also known as static variable

1. What is the difference between instance variable and class variable inn java?

* Instance variable :
* It is unique to each instance of the class
* Declared without static modifier
* Memory allocation, loading and initialization is done at run time
* Static variable:
* It is shared by all instances of the class
* Declared with static modifier
* Memory allocation is don e at compile time

1. What is access modifier in java?

* Access modifiers allows us to set levels for variables, methods, classes and constructor in java
* We can control access levels using access modifiers in java

1. What is default value of local variable?

* There is not any default value of local variable, you must have to initialize it

1. Java support constructor inheritance?

* No, constructor inheritance is not supported by java

1. What is super class of all other classes in java?

* Java.lang.object is super class of all other classes in java

1. What is encapsulation?

* Encapsulation is process of packing code and data together in to a single unit

1. What is the difference between the constructor and method?

* Constructor:
* Name of the constructor must be same as class name
* Constructor must not have any return type
* It is used to initialize the state of an object
* Method:
* Method name can be any
* Method must be return type
* It is used to expose behavior of an object
* Method can be called directly

1. What are the difference types of constructor in java?

* Mainly there are two types of constructor in java
* Default constructor: constructor without parameter is called default constructor
* public class City {
* **//Default Constructor**
* City()
* {
* System.out.println("City is created");
* }
* public static void main(String args[]){
* City c=new City();
* }
* }
* Parameter constructor: Constructor with parameter is called parameterized constructor
* public class City {
* int id;
* String name;
* **// parameterized Constructor**
* City(int i, String n) {
* id = i;
* name = n;
* }
* void display() {
* System.out.println(id + " " + name);
* }
* public static void main(String args[]) {
* City c1 = new City(1, "New York");
* City c2 = new City(2, "London");
* c1.display();
* c2.display();
* }
* }

1. Write a program for Fibonacci series in java?
   1. public class FibonacciSeries {
   2. public static void main(String args[]) {
   3. int x1 = 0, x2 = 1, x3, i, cnt = 15;
   4. **// To print 0 and 1**
   5. System.out.print(x1 + " " + x2);
   6. **// loop starts from 2 as 0 and 1 are already printed.**
   7. for (i = 2; i < cnt; ++i) {
   8. x3 = x1 + x2;
   9. System.out.print(" " + x3);
   10. x1 = x2;
   11. x2 = x3;
   12. }
   13. }
   14. }
2. Write a program to print bellow given pattern

* public class Pattern {
* public static void main(String[] args) {
* for (int a = 1; a <= 5; a++) {
* for (int x = 1; x <= a; x++) {
* System.out.print(x+" ");
* }
* // To print new line.
* System.out.println();
* }
* }
* }

1. What is the difference between ‘This’ and ‘Super’ keyword in java?

* This: keyword is used to store current object reference
* Super :keyword is used to store super class object in sub class
* This: is used to access methods of the current class
* Super : is used to access methods of the base class
* This : used to call constructor in the same class
* Super : is used to call super class constructor

1. In java, what is return type of main method?

* Main method doesn’t have any return type, it is void

1. Can we overload main method in java?

* Yes, java class can have any number of main methods so it is possible to overload main method, but when you run program, it will not execute overloaded main method, always it will execute only public static void main (String[]args) method

1. Can we declare class as protected

* No, you cannot declare class as protected

1. Write a program to remove given character from string

* public class RemoveChar {
* public static String removeChar(String str, char c) {
* if (str == null)
* return null;
* return str.replaceAll(Character.toString(c), "");
* }
* public static void main(String[] args) {
* System.out.println(removeChar("chicago", 'c'));
* }
* }

1. What is polymorphism?

* Polymorphism is ability using which we can create reference variables or methods which behaves differently in different programmatic context
* Let me explain you an example about human, we behaves differently with different people in different environment, our behave will be different when we meet to boss and meet to friend

1. What is the advantage of polymorphism?

* Main advantage of polymorphism is code reusability, you can dynamically supply different implementations through polymorphism, so it will reduce your work volume in terms of handling and distinguishing various objects

1. What is a package?

* A package is a namespace which allows developer to organize a group of related classes and interfaces
* Conceptually it is just like folder which contains different types of files
* It is easy to keep things organized by keeping related classes and interfaces into package

1. What is string in java?

* In java programming, string is object which is prepared by sequence of characters java.lang.package has string class to create and manipulate string

1. How to find out duplicate character string in java?

* We use HashMap and Set to find the duplicate characters in a string, first we convert the given string to char array
* We then create one HashMap with character as s key and it’s number of occurrences as a value
* Then we extract a Set containing all keys of this HashMap using keyset() method
* Then we use this keySet to get the duplicate characters which have appeared more than once in the given string.

1. How to find distinct element in an array in java?

* In this algorithm we will search for duplicate of every element using two for loop
* Outer for loop will fix one array element let’s say N and inner for loop will search for duplicate of N in remaining array
* If duplicate of N is found continue else N is a distinct and print it

1. How to find common element between two arrays in java?

* In this case, we iterate both the given arrays and compare each element of one array with elements of other array
* If the elements are found to be equal, then we will add that element into HasSet.

1. How to do string compress in java?

* For loops basically goes through each letter in the given string, and if it is the same as the previous letter, it figure out how many of that letter there is and puts that number into the result string, let’s an example for a word ‘hello’ and suppose to be it will check e and I think that there is no repeat, it will then get to the next I and then see it is the same as the previous letter, it will put 2 in the result string

1. How to check is Anagram programming In Java?

* In this case we go on checking each character of first string is present in second string , if it is present, we remove that character from second string and process to the next character
* If any character of first string is not present in second string, we break down the loop and conclude that string are not anagrams
* We use string builder deletecharat() method to delete the character from second string if that character is present in it

1. How does to do buble sort in java?

* Compare each pair of adjacent elements from the beginning of an array and if they are in reversed order, swap them
* If at least one swaps has been done, repeat step 1.

1. How the selection sort algorithm will work?

* Selection sort involves two things, first things is selecting lowest or highest element and second thins is placing the element selected in the first step in an appropriate position
* Selection sort first selects the lowest or highest element and exchanges it with the element in the first position
* Again we do same thing until all the elements are in the sorted order

1. How to check the number is prime or not?

* A number is said to be prime if it’s not divisible by any number then itself
* So the lowest number prime is 2, one of the most easiest way to check weather a number is prime or not is to loop from 2 to the number itself and check if it’s divisible by any number in between or not
* We can do that check by using modulus operator in java, which return zero if a number is perfectly divisible by another number, if the number you are checking is not dib=visible by anyone then it’s prime number otherwise, it’s not a prime number

1. How to check Fibonacci series in java?

* Fibonacci series is the series of number where each number is obtained by adding two previous number
* For check Fibonacci series we have to declare a variable is called inputNumber and store the user entered number in it
* Run the while loop which generates Fibonacci numbers until they are less then inputNumber
* Then we will compare if the last generated number is equal to inputNumber then given number belongs to Fibonacci series
* Otherwise number doesn’t belongs to Fibonacci series

1. How to sum all the digit of array values?

* We use two simple java operators to find out the sum of all digits of a number in java. They are modulus operator % and division operator /, we know that if we use modulus operator on any number then it will give last digit of number, and if we divide any number, it will remove last digit from the number
* Or we have to be initialize any length of array and we will take any temporary variable for hold given array values, then we can use foreach loop

1. How to generate random number in java?

* Random number is something which is totally unpredictable and unbiased, random number is a number picked randomly from the given set of numbers
* Each possible number have equal probability of picking up
* There will be no relation or dependency between the previously generated number and the present number
* Java provides to way to generate random number, one is using, one is using java.util.random class and another one is using Math.random() method

1. How to generate reverse number or string in java?

* We use reverse method of StringBuffer class to reverse the string
* Also in case of number we can use scanner number and nextInt() method and while loop for conditional statement