HR Interview questions for Fresher

1) Tell me about yourself

My name is Arjun Kapoor. I am from Haryana. I have done Bachelor of Technology from the stream of Computer Science and Engineering. I did my academic project on updated technology like machine learning and data mining. I am good at Java and C programming language. As my family background is considered, we are 4 in number. My father is a sweet shop merchant, my mother is a homemaker and I have one sibling. My strength is that I am a self-learner & have a positive mind. My weakness is, I don't take rest until my work is finished.

2) Why should I hire you?

As fresher, I don't have any experience. If you hire me, it is a great opportunity for me to learn something new and achieve my goals. This is only possible if you hire me and I assure you that I will give my best to this company.

3) What is your Strength and Weakness?

**Strength:** I am Honest, Sincere, Responsible, and have positive Attitude.

**Weakness:** I don't take rest until my work finished.

4) Why do you want to work for our company?

It is a great honor for me to work in a reputed company likes yours because it is a great multinational company. It has many branches across the world. Employee satisfaction is good in your company. It's a good platform for me to improve my talent and enhance my skill and knowledge.

5) What is the difference between Confidence and Over-Confidence?

Confidence means I will win and Overconfidence means I will win at all the time.

6) What is the difference between Hard-work and Smart work?

Hard work is very necessary for your life because, without practice, you can?t be able to do smart work.

7) How do you feel about working night and weekends?

If the company needs me then I am ready to work at any time.

8) Can you work under Pressure?

Yes, it is a Great Honor for me to work in a presumed organization like yours on the grounds that it is an incredible multinational organization. It has numerous branches over the world. Worker fulfillment is great in your organization. It's a decent stage for me to stand my ability and upgrade my expertise and knowledge.

9) What is your goals?

My short term goal is to be a part of your company and my long-term goal is to be successful in every parameter of this company.

10) Would you lie for the company?

If my lie is for the company welfare, I can but it should not hurt others.

11) How much salary do you expect?

I can expect something which I can meet my expenses.

12) Where do you see yourself five years now?

I can see myself growing with this company and reaching a position where I become a valuable asset to this organization.

Ans 2 : I will see myself in a respectful position in your company.

13) On the scale of one to ten, rate me as an interviewer.

Sir, you are more educated, more talented, more experienced than me I am not on a level to judge you.

14) Who has inspired you in your life and why?

My father is my inspiration because he still shows me the path from nothing to everything. He always guides me to achieve success in every matter of my life. He is also my best friend because he even suggested to me as a friend when I make a mistake.

**15) What do you know about our company?**

Infosys Limited is an Indian company. The headquarters are in Bengaluru, Karnataka, India. Company trade name as "Infosys Technologies Limited." This business provides consulting, information technology and outsourcing services.

**16) Introduce yourself and say something apart from your Resume.**

I would like to tell you other than what is there in it. I am born and raised in Banaras city. In Banaras, there are not many good colleges to pursue B.Tech, so I came to Bengaluru for learning and understanding things. Here, in my early phase I started facing few difficulties but after some days, I was able to sort out almost every problem. I think, adaptability, quick learning and problem-solving are my positive points and coming to my weakness I am emotional kind of person, but this might be helpful in maintaining the proper relationship.

### 17) Where would you like to work: software development or software testing?

#### **Note: Answer depending upon the choice of the person giving the interview.**

**Example 1:** **I would like to work in software development.**

**Example 2:** I would like to work in software testing.

**18) How do you get to know about our company?**

#### **Note: The interviewee should not lie while answering such questions. Because an interviewer is a smart person and they can detect it if you are lying.**

**Example:** I get to know about your company from several online websites.

**19) Why have you applied at Infosys?**

Infosys is the second-largest revenue earning IT Company in India. Every person wants to work for your company.

**20) Why do you think you are fit for our organization?**

I am a hard working person, and my priority is to serve your organization. I can sort out almost every problem, and I think adaptability, quick learning and problem-solving are my positive points.

**21) Do you have an offer from any other organization?**

#### **Note: Interviewee should not lie while answering to such questions because interviewer can investigate.**

Yes, I had many offers from many IT companies like HCL and TCS.

* **22) Tell us about Infosys and its positioning as compared to its competitors? (Change company name)**
* Infosys Limited is an Indian company. The headquarters are in Bengaluru, Karnataka, India. Company trade name as "Infosys Technologies Limited." This company provides consulting, information technology and outsourcing services.

Infosys has many competitors, providing the software facilities worldwide. HCL, Wipro, IBM, and Microsoft were some software companies in competition with Infosys.

**23) You had to wait for 5 hours for the interview. Are you feeling tired?**

#### **Note: This type of questions were asked by the interviewer to check your patience level and willing to work in the company.**

**Example:** "No. This is my dream company so wait doesn't matter. I have enough time for the interview."

**24) Tell me how your online test was?**

#### **Note: This type of question asked by the interviewer to check your confidence level for the online test.**

**Ans :** "Online test was good."

**25) What is your father's occupation? What is his job location?**

#### **Note: Answer to this question depends on the interviewee personal information. Every father might have different occupation and designation.**

**For Example**, My father is a farmer. (working in my village).

**26) Who is your role model? What have you incorporated into your life from him/her?**

**Example:** The role model of my life is my mother. Whenever I am down my mother helps me to push my limits, and she always keeps me on the track. She scolds me every time when I do something wrong. She is everything for me, and I always got inspired from her how she manages every problem in every situation.

**27) Where do you live?**

#### **Note: Answer to this question depends on the interviewee personal information.**

**Example 1:** I am living with my family in New Delhi.

**Example 2:** I am living in a hostel of Hyderabad.

**28) What functional/technical areas you have interest? Would you be passionate to work? Why?**

**Example:** Technically, I am active in programming, and I will be passionate to work on my programming skills because programming is nothing but just telling the computer how to perform tasks.

**29) What about your weaknesses and strengths? How will you overcome your weaknesses?**

#### **Note: While answering such a question, the interviewee should be very careful. Because disclosing too much weakness will make fewer chances of being selected.**

**Example:** I can sort out almost every problem, and I think adaptability, quick learning and problem-solving are my positive points and coming to my weakness I am emotional kind of person, but this might be helpful in maintaining the proper relationship.

**30) What Four things would make a good leader?**

The three things would make a good leader are listed below:

* Have Faith in Their Beliefs
* Earn the Respect of the Team
* Make the Hard Choice
* Being close to your team members.

**31) What is the success?**

Success refers to the accomplishment of an aim or purpose.

**32) Tell me one real-time situation where you have emerged as a Leader?**

**Example 1:** I don't have any work experience, so I have no such real-time situation when I have emerged as a leader but, in my college, I have been the leader of the group project. In my team, I have emerged as a leader.

**33) What makes you stand out against all the other candidates?**

I understand that success is not always guaranteed but there is still hope, and I never lose the faith, whether I succeed or not. I think this power makes me standalone from all other candidates.

* **34) What is your ultimate goal in life?**
* My goal is to work for the company like Infosys( present interview company name) where I can enhance my technical skills and knowledge, and my long-term goal is to see myself at a topmost position in a reputed company like yours.

**35) Which personal attributes do you have?**

* I always stay positive.
* I hold a positive attitude towards all my elders and Youngers.

**36) Where do you rate yourself as an engineer?**

I will rate myself 7 out of 10 as an engineer because there are always some things which have to learn in life.

### 37) What is your strong point regarding technical knowledge? Like JAVA, C, C++.

My strongest point of technical knowledge is programming. I like every programming language because programming is as easy as telling someone to perform some task, for that you need the same communication language. The only difference is we are telling task to the computer instead of the humans.

**38) Do you have any question for us?**

#### **Note: When the interviewers ask this "do you have any question." Most of the candidates say no. It is a wrong practice. Candidates should ask questions also according to the situation, and it shows that you are listening correctly and have a keen interest. Asking questions also gives you an opportunity to find the right place for you in the company. But always remember that it should not look artificial.**

**39) Tell me something about your short-term and long-term goals.**

My short-term goal is to be a part of your organization and my long-term goal is to be successful in every parameter of this company.

**40) What makes you angry?**

I get angry when the work given to me is not done on time.

**1.What do you know about Java?**

**Ans:-**Java is a high-level programming language originally developed by Sun Microsystems and released in 1995. Java runs on a variety of platforms, such as Windows, Mac OS, and the various versions of UNIX.

**2.What are the supported platforms by Java Programming Language?**

**Ans:-** Java runs on a variety of platforms, such as Windows, Mac OS, and the various versions of UNIX/Linux like HP-Unix, Sun Solaris, Redhat Linux, Ubuntu, CentOS, etc.

**3.List any five features of Java?**

**Ans:-**Some features include Object Oriented, Platform Independent, Robust, Interpreted, Multi-threaded Why is Java Architectural Neutral?

It’s compiler generates an architecture-neutral object file format, which makes the compiled code to be executable on many processors, with the presence of Java runtime system.

**4.How Java enabled High Performance?**

**Ans:-**Java uses Just-In-Time compiler to enable high performance. Just-In-Time compiler is a program that turns Java bytecode, which is a program that contains instructions that must be interpreted into instructions that can be sent directly to the processor.

**5.Why Java is considered dynamic?**

**Ans:-** It is designed to adapt to an evolving environment. Java programs can carry extensive amount of run-time information that can be used to verify and resolve accesses to objects on run-time.

**6.What is Java Virtual Machine and how it is considered in context of Java’s platform independent feature?**

**Ans:-** When Java is compiled, it is not compiled into platform specific machine, rather into platform independent byte code. This byte code is distributed over the web and interpreted by virtual Machine *JVM* on whichever platform it is being run.

**7.List two Java IDE’s? Ans:-** Netbeans, Eclipse, etc.

**8.List some Java keywords*unlikeC*, *C* + + *keywords*? Ans:-** Some Java keywords are import, super,

finally, etc.

**9. What do you mean by Object?**

**Ans:-** Object is a runtime entity and it’s state is stored in fields and behavior is shown via methods. Methods operate on an object's internal state and serve as the primary mechanism for object-to- object communication.

**10.Define class?**

**Ans:-** A class is a blue print from which individual objects are created. A class can contain fields and methods to describe the behavior of an object.

**11.What kind of variables a class can consist of?**

**Ans:-** A class consist of Local variable, instance variables and class

**12.variables. What is a Local Variable?**

**Ans:-** Variables defined inside methods, constructors or blocks are called local variables. The variable will be declared and initialized within the method and it will be destroyed when the method has completed.

**13.What is a Instance Variable?**

**Ans:-** Instance variables are variables within a class but outside any method. These variables are instantiated when the class is loaded.

**14.What is a Class Variable?**

**Ans:-** These are variables declared with in a class, outside any method, with the static

**15.keyword. What is Singleton class?**

**Ans:-** Singleton class control object creation, limiting the number to one but allowing the flexibility to create more objects if the situation changes.

**16.What do you mean by Constructor?**

**Ans:-** Constructor gets invoked when a new object is created. Every class has a constructor. If we do not explicitly write a constructor for a class the java compiler builds a default constructor for that class.

**17.List the three steps for creating an Object for a class?**

**Ans:-** An Object is first declared, then instantiated and then it is

**18.initialized. What is the default value of byte datatype in Java?**

**Ans:-** Default value of byte datatype is 0.

**19.What is the default value of float and double datatype in Java?**

**Ans:-** Default value of float and double datatype in different as compared to C/C++. For float its 0.0f and for double it’s 0.0d

**20.When a byte datatype is used?**

**Ans:-** This data type is used to save space in large arrays, mainly in place of integers, since a byte is four times smaller than an int.

**21.What is a static variable?**

**Ans:-** Class variables also known as static variables are declared with the static keyword in a class, but outside a method, constructor or a block.

**22.What do you mean by Access Modifier?**

**Ans:-** Java provides access modifiers to set access levels for classes, variables, methods and constructors. A member has package or default accessibility when no accessibility modifier is specified.

**23.What is protected access modifier?**

**Ans:-** Variables, methods and constructors which are declared protected in a superclass can be accessed only by the subclasses in other package or any class within the package of the protected members' class.

**24.What do you mean by synchronized Non Access Modifier?**

**Ans:-** Java provides these modifiers for providing functionalities other than Access Modifiers, synchronized used to indicate that a method can be accessed by only one thread at a time. According to Java Operator precedence, which operator is considered to be with highest precedence?

Postfix operators i.e [] . is at the highest precedence.

**25.Variables used in a switch statement can be used with which datatypes?**

**Ans:-** Variables used in a switch statement can only be a byte, short, int, or char.

**26. When parseInt method can be used?**

**Ans:-** This method is used to get the primitive data type of a certain String.

**27. Why is String class considered immutable?**

**Ans:-** The String class is immutable, so that once it is created a String object cannot be changed. Since String is immutable it can safely be shared between many threads ,which is considered very important for multithreaded programming.

**28.Why is StringBuffer called mutable?**

**Ans:-** The String class is considered as immutable, so that once it is created a String object cannot be changed. If there is a necessity to make alot of modifications to Strings of characters then StringBuffer should be used.

**29.What is the difference between StringBuffer and StringBuilder class?**

**Ans:-** Use StringBuilder whenever possible because it is faster than StringBuffer. But, if thread safety is necessary then use StringBuffer objects.

**30.Which package is used for pattern matching with regular expressions?**

**Ans:-** java.util.regex package is used for this purpose.

**31.Java.util.regex consists of which classes?**

**Ans:-** java.util.regex consists of three classes − Pattern class, Matcher class and PatternSyntaxException class.

**32.What is finalize method?**

**Ans:-** It is possible to define a method that will be called just before an object's final destruction by the garbage collector. This method is called finalize, and it can be used to ensure that an object terminates cleanly.

**33.What is an Exception?**

**Ans:-** An exception is a problem that arises during the execution of a program. Exceptions are caught by handlers positioned along the thread's method invocation stack.

**34.What do you mean by Checked Exceptions?**

**Ans:-** It is an exception that is typically a user error or a problem that cannot be foreseen by the programmer. For example, if a file is to be opened, but the file cannot be found, an exception occurs. These exceptions cannot simply be ignored at the time of compilation.

**35.Explain Runtime Exceptions?**

**Ans:-** It is an exception that occurs that probably could have been avoided by the programmer. As opposed to checked exceptions, runtime exceptions are ignored at the time of compliation.

**36.Which are the two subclasses under Exception class?**

**Ans:-** The Exception class has two main subclasses : IOException class and Runtime Exception Class. When throws keyword is used?

If a method does not handle a checked exception, the method must declare it using the

Throws keyword. The throws keyword appears at the end of a method's signature.

**37.When throw keyword is used?**

**Ans:-** An exception can be thrown, either a newly instantiated one or an exception that you just caught, by using throw keyword.

**38.How finally used under Exception Handling?**

**Ans:-** The finally keyword is used to create a block of code that follows a try block. A finally block of code always executes, whether or not an exception has occurred.

**39.What things should be kept in mind while creating your own exceptions in Java?**

**Ans:-** While creating your own exception −

All exceptions must be a child of Throwable.

If you want to write a checked exception that is automatically enforced by the Handle or Declare Rule, you need to extend the Exception class.

You want to write a runtime exception, you need to extend the RuntimeException class.

**40.Define Inheritance?**

**Ans:-** It is the process where one object acquires the properties of another. With the use of inheritance the information is made manageable in a hierarchical order.

**41.When super keyword is used?**

**Ans:-** If the method overrides one of its superclass's methods, overridden method can be invoked through the use of the keyword super. It can be also used to refer to a hidden field.

**42. What is Polymorphism?**

**Ans:-** Polymorphism is the ability of an object to take on many forms. The most common use of polymorphism in OOP occurs when a parent class reference is used to refer to a child class object.

**43.What is Abstraction?**

**Ans:-** It refers to the ability to make a class abstract in OOP. It helps to reduce the complexity and also improves the maintainability of the system.

**44. What is Abstract class?**

**Ans:-** These classes cannot be instantiated and are either partially implemented or not at all implemented. This class contains one or more abstract methods which are simply method declarations without a body.

**45.When Abstract methods are used?**

**Ans:-** If you want a class to contain a particular method but you want the actual implementation of that method to be determined by child classes, you can declare the method in the parent class as abstract.

**46.What is Encapsulation?**

**Ans:-** It is the technique of making the fields in a class private and providing access to the fields via public methods. If a field is declared private, it cannot be accessed by anyone outside the class, thereby hiding the fields within the class. Therefore encapsulation is also referred to as data hiding.

**47.What is the primary benefit of Encapsulation?**

**Ans:-** The main benefit of encapsulation is the ability to modify our implemented code without breaking the code of others who use our code. With this Encapsulation gives maintainability, flexibility and extensibility to our code.

**48.What is an Interface?**

**Ans:-** An interface is a collection of abstract methods. A class implements an interface, thereby inheriting the abstract methods of the interface.

**49.Give some features of Interface?**

**Ans:-** It includes −

Interface cannot be instantiated

An interface does not contain any constructors. All of the methods in an interface are abstract.

**50.Define Packages in Java?**

**Ans:-** A Package can be defined as a grouping of related types*classes*, *interfaces*, *enumerationsandannotations*

providing access protection and name space management.

**51.Why Packages are used?**

**Ans:-** Packages are used in Java in-order to prevent naming conflicts, to control access, to make searching/locating and usage of classes, interfaces, enumerations and annotations, etc., easier.

**52.What do you mean by Multithreaded program?**

**Ans:-** A multithreaded program contains two or more parts that can run concurrently. Each part of such a program is called a thread, and each thread defines a separate path of execution.

**53.What are the two ways in which Thread can be created?**

**Ans:-** Thread can be created by: implementing Runnable interface, extending the Thread

**54.class. What is an applet?**

**Ans:-** An applet is a Java program that runs in a Web browser. An applet can be a fully functional Java application because it has the entire Java API at its disposal.

**55.An applet extend which class?**

**Ans:-** An applet extends java.applet.Applet class.

**56.Explain garbage collection in Java?**

**Ans:-** It uses garbage collection to free the memory. By cleaning those objects that is no longer reference by any of the program.

**57.Define immutable object?**

**Ans:-** An immutable object can’t be changed once it is created.

**58.Explain the usage of this with constructors?**

**Ans:-** It is used with variables or methods and used to call constructer of same class.

**59. Explain Set Interface?**

**Ans:-** It is a collection of element which cannot contain duplicate elements. The Set interface contains only methods inherited from Collection and adds the restriction that duplicate elements are prohibited.

**60.Explain TreeSet?**

**Ans:-** It is a Set implemented when we want elements in a sorted order.

**61.What is Comparable Interface?**

**Ans:-** It is used to sort collections and arrays of objects using the collections.sort and java.utils. The

objects of the class implementing the Comparable interface can be ordered.

**62.Difference between throw and throws?**

**Ans:-** It includes:

Throw is used to trigger an exception where as throws is used in declaration of exception.

Without throws, Checked exception cannot be handled where as checked exception can be propagated with throws

**63.Explain the following line used under Java Program −**

**Ans:-** public static void main *Stringargs*[]

The following shows the explanation individually − public − it is the access specifier.

static − it allows main to be called without instantiating a particular instance of a class. void − it affirns the compiler that no value is returned by main.

main − this method is called at the beginning of a Java program. String args[ ] − args parameter is an instance array of class String

**64.Define JRE i.e. Java Runtime Environment?**

**Ans:-** Java Runtime Environment is an implementation of the Java Virtual Machine which executes Java programs. It provides the minimum requirements for executing a Java application;

**65.What is JAR file?**

**Ans:-** JAR files is Java Archive fles and it aggregates many files into one. It holds Java classes in a library. JAR files are built on ZIP file format and have .jar file extension.

**66.What is a WAR file?**

**Ans:-** This is Web Archive File and used to store XML, java classes, and Java Server pages. which is used to distribute a collection of Java Server Pages, Java Servlets, Java classes, XML files, static Web pages etc.

**67.Define JIT compiler?**

**Ans:-** It improves the runtime performance of computer programs based on bytecode.

**68.What is the difference between object oriented programming language and object based programming language?**

**Ans:-** Object based programming languages follow all the features of OOPs except Inheritance. JavaScript is an example of object based programming languages.

**69.What is the purpose of default constructor?**

**Ans:-** The java compiler creates a default constructor only if there is no constructor in the class. Can a constructor be made final?

No, this is not possible.

**70.What is static block?**

**Ans:-** It is used to initialize the static data member, It is executed before main method at the time of class loading.

**71.Define composition?**

Ans:- Holding the reference of the other class within some other class is known as composition.

**72. What is function overloading?**

**Ans:-** If a class has multiple functions by same name but different parameters, it is known as Method Overloading.

**73.What is function overriding?**

**Ans:-** If a subclass provides a specific implementation of a method that is already provided by its parent class, it is known as Method Overriding.

**74.Difference between Overloading and Overriding?**

**Ans:-** Method overloading increases the readability of the program. Method overriding provides the specific implementation of the method that is already provided by its super class parameter must be different in case of overloading, parameter must be same in case of overriding.

**75.What is final class?**

**Ans:**- Final classes are created so the methods implemented by that class cannot be overridden. It can’t be inherited.

**76. What is Null Pointer Exception?**

**Ans:-** A NullPointerException is thrown when calling the instance method of a null object, accessing or modifying the field of a null object etc.

**77.What are the ways in which a thread can enter the waiting state?**

**Ans:-** A thread can enter the waiting state by invoking its sleep method, by blocking on IO, by unsuccessfully attempting to acquire an object's lock, or by invoking an object's wait method. It can also enter the waiting state by invoking its *deprecated* suspend method.

**78.How does multi-threading take place on a computer with a single CPU?**

**Ans:-** The operating system's task scheduler allocates execution time to multiple tasks. By quickly switching between executing tasks, it creates the impression that tasks execute sequentially.

**79.What invokes a thread's run method?**

**Ans:-** After a thread is started, via its start method of the Thread class, the JVM invokes the thread's run method when the thread is initially executed.

**80.Does it matter in what order catch statements for FileNotFoundException and IOException are written?**

**Ans:-** Yes, it does. The FileNoFoundException is inherited from the IOException. Exception's subclasses have to be caught first.

**81.What is the difference between yielding and sleeping?**

**Ans:-** When a task invokes its yield method, it returns to the ready state. When a task invokes its sleep method, it returns to the waiting state.

**82.Why Vector class is used?**

**Ans:-** The Vector class provides the capability to implement a growable array of objects. Vector proves to be very useful if you don't know the size of the array in advance, or you just need one that can change sizes over the lifetime of a program.

**83.How many bits are used to represent Unicode, ASCII, UTF-16, and UTF-8 characters?**

**Ans:-** Unicode requires 16 bits and ASCII require 7 bits. Although the ASCII character set uses only 7 bits, it is usually represented as 8 bits. UTF-8 represents characters using 8, 16, and 18 bit patterns.

UTF-16 uses 16-bit and larger bit patterns.

**84.What are Wrapper classes?**

**Ans:-** These are classes that allow primitive types to be accessed as objects. Example: Integer, Character, Double, Boolean etc.

**85.What is the difference between a Window and a Frame?**

**Ans:-** The Frame class extends Window to define a main application window that can have a menu bar.

**86.Which package has light weight components?**

**Ans:-** javax.Swing package. All components in Swing, except JApplet, JDialog, JFrame and JWindow are lightweight components.

**87.What is the difference between the paint and repaint methods?**

**Ans:-** The paint method supports painting via a Graphics object. The repaint method is used to cause paint to be invoked by the AWT painting thread.

**88.What is the purpose of File class?**

**Ans:-** It is used to create objects that provide access to the files and directories of a local file system.

**89.What is the difference between the Reader/Writer class hierarchy and the InputStream/OutputStream class hierarchy?**

**Ans:-** The Reader/Writer class hierarchy is character-oriented, and the InputStream/OutputStream class hierarchy is byte-oriented.

**90.Which class should you use to obtain design information about an object?**

**Ans:-** The Class class is used to obtain information about an object's design and java.lang.Class class instance represent classes, interfaces in a running Java application.

**91.What is the difference between static and non-static variables?**

**Ans:-** A static variable is associated with the class as a whole rather than with specific instances of a class. Non-static variables take on unique values with each object instance.

**92.What is Serialization and deserialization?**

**Ans:-** Serialization is the process of writing the state of an object to a byte stream. Deserialization is the process of restoring these objects.

**93.What are use cases?**

**Ans:-** It is part of the analysis of a program and describes a situation that a program might encounter and what behavior the program should exhibit in that circumstance.

**94.Explain the use of sublass in a Java program?**

**Ans:-** Sub class inherits all the public and protected methods and the implementation. It also inherits all the default modifier methods and their implementation.

**95.How to add menushortcut to menu item?**

**Ans:-** If there is a button instance called b1, you may add menu short cut by calling b1.setMnemonic′*F* ′, so the user may be able to use Alt+F to click the button.

**96.Can you write a Java class that could be used both as an applet as well as an application?**

**Ans:-** Yes, just add a main method to the applet.

**97.What is the difference between Swing and AWT components?**

**Ans:-** AWT components are heavy-weight, whereas Swing components are lightweight. Heavy weight components depend on the local windowing toolkit. For example, java.awt.Button is a heavy weight component, when it is running on the Java platform for Unix platform, it maps to a real Motif button.

**98.What's the difference between constructors and other methods?**

**Ans:-** Constructors must have the same name as the class and can not return a value. They are only called once while regular methods could be called many times.

**99.Is there any limitation of using Inheritance?**

**Ans:-** Yes, since inheritance inherits everything from the super class and interface, it may make the subclass too clustering and sometimes error-prone when dynamic overriding or dynamic overloading in some situation.

**100.When is the ArrayStoreException thrown?**

**Ans:-** When copying elements between different arrays, if the source or destination arguments are not arrays or their types are not compatible, an ArrayStoreException will be thrown.

**101.Can you call one constructor from another if a class has multiple constructors?**

**Ans:-** Yes, use this syntax.

**102.What's the difference between the methods sleep and wait?**

**Ans:-** The code sleep2000; puts thread aside for exactly two seconds. The code wait2000, causes a wait of up to two second. A thread could stop waiting earlier if it receives the notify or notifyAll call. The method wait is defined in the class Object and the method sleep is defined in the class Thread.

**103.When ArithmeticException is thrown?**

**Ans:-** The ArithmeticException is thrown when integer is divided by zero or taking the remainder of a number by zero. It is never thrown in floating-point operations.

**104.What is a transient variable?**

**Ans:-** A transient variable is a variable that may not be serialized during Serialization and which is initialized by its default value during de-serialization,

**105.What is synchronization?**

**Ans:-** Synchronization is the capability to control the access of multiple threads to shared resources. synchronized keyword in java provides locking which ensures mutual exclusive access of shared resource and prevent data race.

**106.What is the Collections API?**

**Ans:-** The Collections API is a set of classes and interfaces that support operations on collections of objects.

**107.Does garbage collection guarantee that a program will not run out of memory?**

**Ans:-** Garbage collection does not guarantee that a program will not run out of memory. It is possible for programs to use up memory resources faster than they are garbage collected. It is also possible for programs to create objects that are not subject to garbage collection.

**108.The immediate superclass of the Applet class?**

**Ans:-** Panel is the immediate superclass. A panel provides space in which an application can attach any other component, including other panels.

**109.Which Java operator is right associative?**

**Ans:-** The = operator is right associative.

**110.What is the difference between a break statement and a continue statement?**

**Ans:-** A break statement results in the termination of the statement to which it applies *switch*, *for*, *do*, *or while*. A continue statement is used to end the current loop iteration and return control to the loop statement.

**111.If a variable is declared as private, where may the variable be accessed?**

**Ans:-** A private variable may only be accessed within the class in which it is

**112.declared. What is the purpose of the System class?**

**Ans:-** The purpose of the System class is to provide access to system

**113.resources. List primitive Java types?**

**Ans:-** The eight primitive types are byte, char, short, int, long, float, double, and boolean.

**1 1 4 . What is the relationship between clipping and repainting under AWT?**

**Ans:-** When a window is repainted by the AWT painting thread, it sets the clipping regions to the area of the window that requires repainting.

**115.Which class is the immediate superclass of the Container class?**

**Ans:-** Component class is the immediate super class.

**116.What class of exceptions are generated by the Java run-time system?**

**Ans:-** The Java runtime system generates RuntimeException and Error exceptions.

**117.Under what conditions is an object's finalize method invoked by the garbage collector?**

**Ans:-** The garbage collector invokes an object's finalize method when it detects that the object has become unreachable.

**118.How can a dead thread be restarted?**

**Ans:-** A dead thread cannot be restarted.

**119.Which arithmetic operations can result in the throwing of an ArithmeticException?**

**Ans:-** Integer / and % can result in the throwing of an ArithmeticException.

**120.Variable of the boolean type is automatically initialized as?**

**Ans:-** The default value of the boolean type is false.

**121.Can try statements be nested?**

**Ans:-** Yes

**122.What are Class Loaders?**

**Ans:-** A class loader is an object that is responsible for loading classes. The class Class Loader is an abstract class.

**123.What is the difference between an Interface and an Abstract class?**

**Ans:-** An abstract class can have instance methods that implement a default behavior. An Interface can only declare constants and instance methods, but cannot implement default behavior and all methods are implicitly abstract. An interface has all public members and no implementation.

**124.What will happen if static modifier is removed from the signature of the main method?**

**Ans:-** Program throws "No Such Method Error" error at runtime.

**125.What is the default value of an object reference declared as an instance variable?**

**Ans:-** Null, unless it is defined explicitly.

**126.Can a top level class be private or protected?**

**Ans:-** No, a top level class can not be private or protected. It can have either "public" or no modifier.

**127.Why do we need wrapper classes?**

**Ans:-** We can pass them around as method parameters where a method expects an object. It also provides utility methods.

**128.What is the difference between error and an exception?**

**Ans:-** An error is an irrecoverable condition occurring at runtime. Such as OutOfMemory error. Exceptions are conditions that occur because of bad input etc. e.g. FileNotFoundException will be thrown if the specified file does not exist.

**129.Is it necessary that each try block must be followed by a catch block?**

**Ans:-** It is not necessary that each try block must be followed by a catch block. It should be followed by either a catch block or a finally block.

**130.When a thread is created and started, what is its initial state?**

**Ans:-** A thread is in the ready state as initial state after it has been created and started.

**1 3 1 . What is the Locale class?**

**Ans:-** The Locale class is used to tailor program output to the conventions of a particular geographic, political, or cultural region.

**132.What are synchronized methods and synchronized statements?**

**Ans:-** Synchronized methods are methods that are used to control access to an object. A synchronized statement can only be executed after a thread has acquired the lock for the object or class referenced in the synchronized statement.

**133.What is runtime polymorphism or dynamic method dispatch?**

**Ans:-** Runtime polymorphism or dynamic method dispatch is a process in which a call to an overridden method is resolved at runtime rather than at compile-time. In this process, an overridden method is called through the reference variable of a superclass.

**134.What is Dynamic Binding *late binding*?**

**Ans:-** Binding refers to the linking of a procedure call to the code to be executed in response to the call. Dynamic binding means that the code associated with a given procedure call is not known until the time of the call at run-time.

**135.Can constructor be inherited?**

**Ans:-** No, constructor cannot be inherited.

**136.What are the advantages of ArrayList over arrays?**

**Ans:-** Array List can grow dynamically and provides more powerful insertion and search mechanisms than arrays.

**137.Why deletion in LinkedList is fast than ArrayList?**

**Ans:-** Deletion in linked list is fast because it involves only updating the next pointer in the node before the deleted node and updating the previous pointer in the node after the deleted node.

**138.How do you decide when to use ArrayList and LinkedList?**

**Ans:-** If you need to frequently add and remove elements from the middle of the list and only access the list elements sequentially, then LinkedList should be used. If you need to support random access, without inserting or removing elements from any place other than the end, then ArrayList should be used.

**139.What is a Values Collection View ?**

**Ans:-** It is a collection returned by the values method of the Map Interface, It contains all the objects present as values in the map.

**140.What is dot operator?**

**Ans:-** The dot operator. is used to access the instance variables and methods of class objects.It is also used to access classes and sub-packages from a package.

**141.Where and how can you use a private constructor?**

**Ans:-** Private constructor is used if you do not want other classes to instantiate the object and to prevent subclassing.T

**142.What is type casting?**

**Ans:-** Type casting means treating a variable of one type as though it is another type.

**143. Describe life cycle of thread**?

**Ans:-** A thread is a execution in a program. The life cycle of a thread include −

Newborn state Runnable state Running state Blocked state Dead state

**144.What is the difference between the >> and >>> operators?**

**Ans:-** The >> operator carries the sign bit when shifting right. The >>> zero-fills bits that have been shifted out.

**145.Which method of the Component class is used to set the position and size of a component?**

**Ans:-** Set Bounds method is used for this purpose.

**146.What is the range of the short type?**

**Ans:-** The range of the short type is

-215 to 2^15-1.

**147. What is the immediate superclass of Menu?**

**Ans:-** MenuItem class

**148.Does Java allow Default Arguments?**

**Ans:-** No, Java does not allow Default Arguments.

**149.Which number is denoted by leading zero in java?**

**Ans:-** Octal Numbers are denoted by leading zero in java, example: 06

**150. Which number is denoted by leading 0x or 0X in java?**

**Ans:-** Hexadecimal Numbers are denoted by leading 0x or 0X in java, example − 0XF

**151.Break statement can be used as labels in Java?**

**Ans:-** Yes, an example can be *break one;*

**152.Where import statement is used in a Java program?**

**Ans:-** Import statement is allowed at the beginning of the program file after package statement.

**153. Explain suspend method under Thread class>**

**Ans:-** It is used to pause or temporarily stop the execution of the thread.

**154.Explain is Alive method under Thread class?**

**Ans:-** It is used to find out whether a thread is still running or not.

**155.What is current Thread?**

**Ans:-** It is a public static method used to obtain a reference to the current thread.

**156.Explain main thread under Thread class execution?**

**Ans:-** The main thread is created automatically and it begins to execute immediately when a program starts. It ia thread from which all other child threads originate.

**157.Life cycle of an applet includes which steps?**

**Ans:-** Life cycle involves the following steps −

Initialization Starting Stopping Destroying Painting

**158.Why is the role of init method under applets?**

**Ans:-** It initializes the applet and is the first method to be called.

**159.hich method is called by Applet class to load an image?**

**Ans:-** getImage*URLobject*, *filename* is used for this purpose.

**160.Define code as an attribute of Applet?**

**Ans:-** It is used to specify the name of the applet class.

**161.Define canvas?**

**Ans:-** It is a simple drawing surface which are used for painting images or to perform other graphical operations.

**162.Define Network Programming?**

**Ans:-** It refers to writing programs that execute across multiple devices *computers*, in which the devices are all connected to each other using a network.

**163.What is a Socket?**

**Ans:-** Sockets provide the communication mechanism between two computers using TCP. A client program creates a socket on its end of the communication and attempts to connect that socket to a server.

**164.Advantages of Java Sockets?**

**Ans:-** Sockets are flexible and sufficient. Efficient socket based programming can be easily implemented for general communications. It cause low network traffic.

**165.Disadvantages of Java Sockets?**

**Ans:-** Socket based communications allows only to send packets of raw data between applications. Both the client-side and server-side have to provide mechanisms to make the data useful in any way.

**166.Which class is used by server applications to obtain a port and listen for client requests?**

**Ans:-** java.net.ServerSocket class is used by server applications to obtain a port and listen for client requests

**167.Which class represents the socket that both the client and server use to communicate with each other?**

**Ans:-** java.net.Socket class represents the socket that both the client and server use to communicate with each other.

**168.Why Generics are used in Java?**

**Ans:-** Generics provide compile-time type safety that allows programmers to catch invalid types at compile time. Java Generic methods and generic classes enable programmers to specify, with a single method declaration, a set of related methods or, with a single class declaration, a set of related types.

**169.What environment variables do I need to set on my machine in order to be able to run Java programs?**

**Ans:-** CLASSPATH and PATH are the two variables.

**170.Is there any need to import java.lang package?**

**Ans:-** No, there is no need to import this package. It is by default loaded internally by the JVM.

**171. What is Nested top-level class?**

**Ans:-** If a class is declared within a class and specify the static modifier, the compiler treats the class just like any other top-level class. Nested top-level class is an Inner class.

**172.What is Externalizable interface?**

**Ans:-** Externalizable is an interface which contains two methods readExternal and writeExternal. These methods give you a control over the serialization mechanism.

**173.If System.exit 0; is written at the end of the try block, will the finally block still execute?**

**Ans:-** No in this case the finally block will not execute because when you say System.exit 0; the control immediately goes out of the program, and thus finally never executes.

**174.What is daemon thread?**

**Ans:-** Daemon thread is a low priority thread, which runs intermittently in the back ground doing the garbage collection operation for the java runtime system.

**175.Which method is used to create the daemon thread? Ans:-** setDaemon method is used to create a daemon thread.

**176.hich method must be implemented by all threads?**

**Ans:-** All tasks must implement the run method .

**177.hat is the GregorianCalendar class?**

**Ans:-** The GregorianCalendar provides support for traditional Western calendars

**178.What is the SimpleTimeZone class?**

**Ans:-** The SimpleTimeZone class provides support for a Gregorian calendar.

**179.What is the difference between the size and capacity of a Vector?**

**Ans:-** The size is the number of elements actually stored in the vector, while capacity is the maximum number of elements it can store at a given instance of time.

**180.Can a vector contain heterogenous objects?**

**Ans:-** Yes a Vector can contain heterogenous objects. Because a Vector stores everything in terms of Object.

**181.What is an enumeration?**

**Ans:-** An enumeration is an interface containing methods for accessing the underlying data structure from which the enumeration is obtained. It allows sequential access to all the elements stored in the collection.

**182.What is difference between Path and Classpath?**

**Ans:-** Path and Classpath are operating system level environment variales. Path is defines where the system can find the executables. *exe* files and classpath is used to specify the location of .class files.

**183.Can a class declared as private be accessed outside it's package?**

**Ans:-** No, it's not possible to accessed outside it's package.

**184.What are the restriction imposed on a static method or a static block of code?**

**Ans:-** A static method should not refer to instance variables without creating an instance and cannot use "this" operator to refer the instance.

**185.Can an Interface extend another Interface?**

**Ans:-** Yes an Interface can inherit another Interface, for that matter an Interface can extend more than one Interface.

**186.Which object oriented Concept is achieved by using overloading and overriding?**

**Ans:-** Polymorphism

**187.What is an object's lock and which object's have locks?**

**Ans:-** An object's lock is a mechanism that is used by multiple threads to obtain synchronized access to the object. A thread may execute a synchronized method of an object only after it has acquired the object's lock.

**188.What is Downcasting?**

**Ans:-** casting down the hierarchy.

**189. What are order of precedence and associativity and how are they used?**

**Ans:-** Order of precedence determines the order in which operators are evaluated in expressions. Associatity determines whether an expression is evaluated left-to-right or right-to-left.

**190.If a method is declared as protected, where may the method be accessed?**

**Ans:-** A protected method may only be accessed by classes or interfaces of the same package or by subclasses of the class in which it is declared.

**191.What is the difference between inner class and nested class?**

**Ans:-** If the access modifier of the inner class is static, then it becomes nested class.

**192.What restrictions are placed on method overriding?**

**Ans:-** Overridden methods must have the same name, argument list, and return type. The overriding method may not limit the access of the method it overrides.

**193.What is constructor chaining and how is it achieved in Java?**

**Ans:-** A child object constructor always first needs to construct its parent. In Java it is done via an implicit call to the no-args constructor as the first statement.

**194.Can a double value be cast to a byte?**

**Ans:-** Yes, a double value can be cast to a byte.

**Most Popular Java Programming Interview Questions*.***

**Q #1) Write a Java Program to reverse a string without using String inbuilt function.**

**Answer:**Here, we are initializing a string variable str and making use of the string builder class.

The object of the string builder class str2 will be further used to append the value stored in the string variable str.  
Thereafter, we are using the inbuilt function of the string builder (reverse()) and storing the new reversed string in str2. Finally, we are printing str2.

**Following program code explains this:**

|  |
| --- |
| **public** **class** FinalReverseWithoutUsingStringMethods {    **public** **static** **void** main(String[] args) {            // TODO Auto-generated method stub            String str = "Automation";            StringBuilder str2 = **new** StringBuilder();            str2.append(str);            str2 = str2.reverse();     // used string builder to reverse           System.out.println(str2);            }    } |

**Output:**

noitamotuA

**Q #2) Write a Java Program to reverse a string without using String inbuilt function reverse().**

**Answer:**There are several ways with which you can reverse your string if you are allowed to use the other string inbuilt functions.

**Method 1:**

In this method, we are initializing a string variable called str with the value of your given string. Then, we are converting that string into a character array with the toCharArray() function. Thereafter, we are using for loop to iterate between each character in reverse order and printing each character.

|  |
| --- |
| **public** **class** FinalReverseWithoutUsingInbuiltFunction {  **public** **static** **void** main(String[] args) {          String str = "Saket Saurav";  **char** chars[] = str.toCharArray();  // converted to character array and printed in reverse order  **for**(**int** i= chars.length-1; i&gt;=0; i--) {              System.out.print(chars[i]);          }      }  } |

**Output:**

varuaS tekaS

**Method 2:**

This is another method in which you are declaring your string variable str and then using Scanner class to declare an object with a predefined standard input object.

This program will accept the string value through the command line (when executed).

We have used nextLine() which will read the input with the spaces between the words of a string. Thereafter, we have used a split() method to split the string into its substrings(no delimiter given here). Finally, we have printed the string in reverse order using for loop.

|  |
| --- |
| **import** java.util.Scanner;    **public** **class** ReverseSplit {    **public** **static** **void** main(String[] args) {          // TODO Auto-generated method stub          String str;          Scanner in = **new** Scanner(System.in);          System.out.println("Enter your String");          str = in.nextLine();          String[] token = str.split("");  //used split method to print in reverse order  **for**(**int** i=token.length-1; i&gt;=0; i--)          {              System.out.print(token[i] + "");          }        }    } |

**Output:**

Enter your String  
Softwaretestinghelp  
plehgnitseterawtfoS

**Method 3:**

This is almost like method 2, but here we did not use the split() method. We have used the scanner class and nextLine() for reading the input string. Then, we have declared an integer length which has the length of the input string.

Thereafter, we have printed the string in the reverse order using for loop. However, we have used the charAt(index) method which will return the character at any specific index. After each iteration, the character will be concatenated to reverse the string variable.

Finally, we have printed the reverse string variable.

|  |
| --- |
| **import** java.util.Scanner;    **public** **class** Reverse {    **public** **static** **void** main(String[] args) {          // TODO Auto-generated method stub          String original, reverse = "";          System.out.println("Enter the string to be reversed");          Scanner in = **new** Scanner(System.in);          original = in.nextLine();  **int** length = original.length();  **for**(**int** i=length-1; i&gt;=0; i--) {              reverse = reverse + original.charAt(i);   //used inbuilt method charAt() to reverse the string          }          System.out.println(reverse);      }    } |

**Output:**

Enter the string to be reversed  
automation testing  
gnitset noitamotua

**Q #3) Write a Java Program to swap two numbers using the third variable.**

**Answer:**In this example, we have made use of the Scanner class to declare an object with a predefined standard input object. This program will accept the values of x and y through the command line (when executed).

We have used nextInt() which will input the value of an integer variable ‘x’ and ‘y’ from the user. A temp variable is also declared.

Now, the logic of the program goes like this – we are assigning temp or third variable with the value of x, and then assigning x with the value of y and again assigning y with the value of temp. So, after the first complete iteration, the temp will have a value of x, x will have a value of y and y will have a value of temp (which is x).

|  |
| --- |
| **import** java.util.Scanner;    **public** **class** SwapTwoNumbers {    **public** **static** **void** main(String[] args) {          // TODO Auto-generated method stub  **int** x, y, temp;          System.out.println("Enter x and y");          Scanner in = **new** Scanner(System.in);          x = in.nextInt();          y = in.nextInt();          System.out.println("Before Swapping" + x + y);          temp = x;          x = y;          y = temp;          System.out.println("After Swapping" + x + y);        }    } |

**Output:**

Enter x and y  
45  
98  
Before Swapping4598  
After Swapping9845

**Q #4) Write a Java Program to swap two numbers without using the third variable.**

**Answer:**Rest all things will be the same as the above program. Only the logic will change. Here, we are assigning x with the value x + y which means x will have a sum of both x and y.

Then, we are assigning y with the value x – y which means we are subtracting the value of y from the sum of (x + y). Till here, x still has the sum of both x and y. But y has the value of x.

Finally, in the third step, we are assigning x with the value x – y which means we are subtracting y (which has the value of x) from the total (x + y). This will assign x with the value of y and vice versa.

|  |
| --- |
| **import** java.util.Scanner;    **class** SwapTwoNumberWithoutThirdVariable  {  **public** **static** **void** main(String args[])     {  **int** x, y;        System.out.println("Enter x and y");        Scanner in = **new** Scanner(System.in);          x = in.nextInt();        y = in.nextInt();          System.out.println("Before Swapping\nx = "+x+"\ny = "+y);          x = x + y;        y = x - y;        x = x - y;          System.out.println("After Swapping without third variable\nx = "+x+"\ny = "+y);     }  } |

**Output:**

Enter x and y  
45  
98  
Before Swapping  
x = 45  
y = 98  
After Swapping without a third variable  
x = 98  
y = 45

**Q #5) Write a Java Program to count the number of words in a string using HashMap.**

**Answer:** This is a collection class program where we have used HashMap for storing the string.

First of all, we have declared our string variable called str. Then we have used split() function delimited by single space so that we can split multiple words in a string.

Thereafter, we have declared HashMap and iterated using for loop. Inside for loop, we have an if-else statement in which wherever at a particular position, the map contains a key, we set the counter at that position and add the object to the map.

Each time, the counter is incremented by 1. Else, the counter is set to 1.

Finally, we are printing the HashMap.

**Note:** The same program can be used to count the number of characters in a string. All you need to do is to remove one space (remove space delimited in split method) in String[] split = str.split(“”);

|  |
| --- |
| **import** java.util.HashMap;    **public** **class** FinalCountWords {    **public** **static** **void** main(String[] args) {          // TODO Auto-generated method stub          String str = "This this is is done by Saket Saket";          String[] split = str.split(" ");                    HashMap<String,Integer> map = **new** HashMap<String,Integer>();  **for** (**int** i=0; i<split.length; i++) {  **if** (map.containsKey(split[i])) {  **int** count = map.get(split[i]);                  map.put(split[i], count+1);              }  **else** {                  map.put(split[i], 1);              }          }          System.out.println(map);      }    } |

**Output:**

{Saket=2, by=1, this=1, This=1, is=2, done=1}

**Q #6) Write a Java Program to iterate HashMap using While and advance for loop.**

**Answer:**Here we have inserted three elements in HashMap using put() function.

The size of the map can get using the size() method. Thereafter, we have used a While loop for iterating through the map which contains one key-value pair for each element. Keys and Values can be retrieved through getKey() and getValue().

Likewise, we have used advanced for loop where we have a “me2” object for the HashMap.

|  |
| --- |
| **import** java.util.HashMap;  **import** java.util.Iterator;  **import** java.util.Map;    **public** **class** HashMapIteration {    **public** **static** **void** main(String[] args) {          // TODO Auto-generated method stub          HashMap&lt;Integer,String&gt; map = **new** HashMap&lt;Integer,String&gt;();          map.put(2, "Saket");          map.put(25, "Saurav");          map.put(12, "HashMap");          System.out.println(map.size());          System.out.println("While Loop:");          Iterator itr = map.entrySet().iterator();  **while**(itr.hasNext()) {              Map.Entry me = (Map.Entry) itr.next();              System.out.println("Key is " + me.getKey() + " Value is " + me.getValue());          }          System.out.println("For Loop:");  **for**(Map.Entry me2: map.entrySet()) {              System.out.println("Key is: " + me2.getKey() + " Value is: " + me2.getValue());          }      }    } |

**Output:**

3  
While Loop:  
Key is 2 Value is Saket  
Key is 25 Value is Saurav  
Key is 12 Value is HashMap  
For Loop:  
Key is: 2 Value is: Saket  
Key is: 25 Value is: Saurav  
Key is: 12 Value is: HashMap

**Q #7) Write a Java Program to find whether a number is prime or not.**

**Answer:**Here, we have declared two integers temp and num and used Scanner class with nextInt(as we have integer only).

One boolean variable isPrime is set to true. Thereafter, we have used for loop starting from 2, less than half of the number is entered and incremented by 1 for each iteration. Temp will have the remainder for every iteration. If the remainder is 0, then isPrime will be set to False.

Based on isPrime value, we are coming to the conclusion that whether our number is prime or not.

|  |
| --- |
| **import** java.util.Scanner;    **public** **class** Prime {    **public** **static** **void** main(String[] args) {          // TODO Auto-generated method stub  **int** temp, num;  **boolean** isPrime = **true**;          Scanner in = **new** Scanner(System.in);          num = in.nextInt();          in.close();  **for** (**int** i = 2; i&lt;= num/2; i++) {              temp = num%i;  **if** (temp == 0) {                  isPrime = **false**;  **break**;              }          }  **if**(isPrime)              System.out.println(num + "number is prime");  **else**                  System.out.println(num + "number is not a prime");          }    } |

**Output:**

445  
445number is not a prime

**Q #8) Write a Java Program to find whether a string or number is palindrome or not.**

**Answer:**You can use any of the reverse string program explained above to check whether the number or string is palindrome or not.

What you need to do is to include one if-else statement. If the original string is equal to a reversed string then the number is a palindrome, otherwise not.

|  |
| --- |
| **import** java.util.Scanner;    **public** **class** Palindrome {  **public** **static** **void** main (String[] args) {          String original, reverse = "";          Scanner in = **new** Scanner(System.in);  **int** length;          System.out.println("Enter the number or String");          original = in.nextLine();          length = original.length();  **for** (**int** i =length -1; i>;=0; i--) {              reverse = reverse + original.charAt(i);          }          System.out.println("reverse is:" +reverse);    **if**(original.equals(reverse))              System.out.println("The number is palindrome");  **else**              System.out.println("The number is not a palindrome");        }  } |

**Output:**

**For String-**

Enter the number or String  
vijay  
reverse is:yajiv  
The number is not a palindrome

**For Number-**

Enter the number or String  
99  
reverse is:99  
The number is palindrome

**Q #9) Write a Java Program for the Fibonacci series.**

**Answer:**Fibonacci series is a series of numbers where after the initial two numbers, every occurring number is the sum of two preceding numbers.

**For Example** 0,1,1,2,3,5,8,13,21………

In this program, we have used Scanner class again with nextInt (discussed above). Initially, we are entering (through command line) the number of times the Fibonacci has to iterate. We have declared integer num and initialized a,b with zero and c with one. Then, we have used for loop to iterate.

The logic goes like a is set with the value of b which is 0, then b is set with the value of c which is 1. Then, c is set with the sum of both a and b.

|  |
| --- |
| **import** java.util.Scanner;    **public** **class** Fibonacci {  **public** **static** **void** main(String[] args) {  **int** num, a = 0,b=0, c =1;          Scanner in = **new** Scanner(System.in);          System.out.println("Enter the number of times");          num = in.nextInt();          System.out.println("Fibonacci Series of the number is:");  **for** (**int** i=0; i<num; i++) {              a = b;              b = c;              c = a+b;              System.out.println(a + "");    //if you want to print on the same line, use print()          }      }  } |

**Output:**

Enter the number of times  
10  
Fibonacci Series of the number is:  
0  
1  
1  
2  
3  
5  
8  
13  
21  
34

**Q #10) Write a Java Program to iterate ArrayList using for-loop, while-loop, and advance for-loop.**

**Answer:** In this program, we have inserted three elements and printed the size of the ArrayList.

Then, we have used While Loop with an iterator. Whenever the iterator has (next) element, it will display that element until we reach the end of the list. So it will iterate three times.

Likewise, we have done for Advanced For Loop where we have created an object called obj for the ArrayList called list. Then printed the object.

Thereafter, we have put the condition of For Loop where the iterator i is set to 0 index, then it is incremented by 1 until the ArrayList limit or size is reached. Finally, we have printed each element using a get(index) method for each iteration of For Loop.

|  |
| --- |
| **import** java.util.\*;    **public** **class** arrayList {  **public** **static** **void** main(String[] args) {          ArrayList list = **new** ArrayList();          list.add("20");          list.add("30");          list.add("40");          System.out.println(list.size());          System.out.println("While Loop:");          Iterator itr = list.iterator();  **while**(itr.hasNext()) {              System.out.println(itr.next());          }          System.out.println("Advanced For Loop:");  **for**(Object obj : list) {              System.out.println(obj);      }          System.out.println("For Loop:");  **for**(**int** i=0; i&lt;list.size(); i++) {              System.out.println(list.get(i));          }  }  } |

**Output:**

3  
While Loop:  
20  
30  
40  
Advanced For Loop:  
20  
30  
40  
For Loop:  
20  
30  
40

**Q #11) Write a Java Program to demonstrate an explicit wait condition check.**

**Answer:**There are two main types of wait – implicit and explicit. (We are not considering Fluent wait in this program)

The implicit wait is those waits that are executed irrespective of any condition. In the below program, you can see that it is for Google Chrome and we have used some inbuilt methods to set the property, maximizing window, URL navigation, and web element locating.

|  |
| --- |
| WebDriverWait wait = **new** WebDriverWait(driver, 20);  WebElement element2 = wait.until(ExpectedConditions.visibilityOfElementLocated(By.partialLinkText("Software testing - Wikipedia")));  element2.click(); |

In the above piece of code, you can see that we have created an object wait for WebDriverWait and then we have searched for WebElement called element2.

The condition is set in such a way that the webdriver will have to wait until we see the link “Software testing – Wikipedia” on a web page. It won’t execute if it does not find this link. If it does, then it will do a mouse click on that link.

**package** Codes;

**import** java.util.concurrent.TimeUnit;

**import** org.openqa.selenium.By;

**import** org.openqa.selenium.WebDriver;

**import** org.openqa.selenium.WebElement;

**import** org.openqa.selenium.chrome.ChromeDriver;

**import** org.openqa.selenium.chrome.ChromeOptions;

**import** org.openqa.selenium.support.ui.ExpectedConditions;

**import** org.openqa.selenium.support.ui.WebDriverWait;

**public** **class** explicitWaitConditionCheck {

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

                    // TODO Auto-generated method stub

                    System.setProperty("webdriver.chrome.driver", "C:\\webdriver\\chromedriver.exe");

                   ChromeOptions options = **new** ChromeOptions();

                   options.addArguments("--disable-arguments");

                   WebDriver driver = **new** ChromeDriver();

                   driver.manage().window().maximize();

                   driver.manage().timeouts().implicitlyWait(20, TimeUnit.SECONDS);

                   driver.navigate().to("https://www.google.com");

                   WebElement element = driver.findElement(By.name("q"));

                    element.sendKeys("Testing");

                    element.submit();

                    WebDriverWait wait = **new** WebDriverWait(driver, 20);

                     WebElement element2 = wait.until(ExpectedConditions.visibilityOfElementLocated(By.partialLinkText("Software testing - Wikipedia")));

element2.click();

}}

|  |
| --- |
|  |

**Q #12) Write a Java Program to demonstrate Scroll up/ Scroll down.**

**Answer:** All the lines of codes are easily relatable as we have discussed in our previous example.

However, in this program, we have included our JavascriptExecutor js which will do the scrolling. If you see the last line of the code, we have passed window.scrollBy(arg1,arg2).

If you want to scroll up then pass some value in arg1 if you want to scroll down then pass some value in arg2.

|  |
| --- |
| **package** Codes;    **import** java.util.concurrent.TimeUnit;    **import** org.openqa.selenium.By;  **import** org.openqa.selenium.JavascriptExecutor;  **import** org.openqa.selenium.Keys;  **import** org.openqa.selenium.WebDriver;  **import** org.openqa.selenium.WebElement;  **import** org.openqa.selenium.chrome.ChromeDriver;    **public** **class** ScrollDown {    **public** **static** **void** main(String[] args) {                     // TODO Auto-generated method stub                     System.setProperty("webdriver.chrome.driver", "C:\\webdriver\\chromedriver.exe");                     WebDriver driver = **new** ChromeDriver();                     JavascriptExecutor js = (JavascriptExecutor) driver;                     driver.manage().window().maximize();                     driver.manage().timeouts().implicitlyWait(20, TimeUnit.SECONDS);                     driver.get("https://www.google.com");                     WebElement element = driver.findElement(By.name("q"));                     element.sendKeys("SoftwareTestingHelp");                     element.sendKeys(Keys.ENTER);                      js.executeScript("window.scrollBy(0,1000)");    }    } |

**Q #13) Write a Java Program to open all links of gmail.com.**

**Answer:** It is a typical example of advanced for loop which we have seen in our previous programs.

Once you have opened a website such as Gmail using get() or navigate().to(), you can use a tagName locator to find the tag name of a website that will return all the tags.

We have advanced for loop where we have created a new WebElement link2 for a link(which already has located all the tags), then we have got all the links through getAttribute(“href”) and got all the texts through getText().

|  |
| --- |
| **package** Codes;    **import** java.util.concurrent.TimeUnit;    **import** org.openqa.selenium.By;  **import** org.openqa.selenium.WebDriver;  **import** org.openqa.selenium.WebElement;  **import** org.openqa.selenium.chrome.ChromeDriver;    **public** **class** openAllLinks {    **public** **static** **void** main(String[] args) {          // TODO Auto-generated method stub          System.setProperty("webdriver.chrome.drive", "C:\\webdriver\\chromedriver.exe");          WebDriver driver = **new** ChromeDriver();          driver.manage().timeouts().implicitlyWait(20, TimeUnit.SECONDS);          driver.manage().window().maximize();          driver.get("https://www.gmail.com/");          java.util.List&lt;WebElement&gt; link = driver.findElements(By.tagName("a"));         System.out.println(link.size());    **for** (WebElement link2: link) {           //print the links i.e. http://google.com or https://www.gmail.com        System.out.println(link2.getAttribute("href"));          //print the links text       System.out.println(link2.getText());  }  }  } |

**Output:**

Starting Chrome Driver 2.38.551601 (edb21f07fc70e9027c746edd3201443e011a61ed) on port 16163  
Only local connections are allowed.  
4  
https://support.google.com/chrome/answer/6130773?hl=en-GB  
Learn more  
https://support.google.com/accounts?hl=en-GB  
Help  
https://accounts.google.com/TOS?loc=IN&hl=en-GB&privacy=true  
Privacy  
https://accounts.google.com/TOS?loc=IN&hl=en-GB  
Terms

**Q #14) Write a Selenium code to switch to the previous tab.**

**Answer:** We have demonstrated the use of the Robot class. We see this as an important third party because we can achieve the different navigation within a browser and its tabs if you know the shortcut keys.

**For example**, if you have three tabs open in your chrome and you want to go to the middle tab, then you have to press control + 2 from your keyboard. The same thing can be achieved through the code as well.

Observe the following code (just after we see the instantiation of Robot class). we have used the Robot class object called a robot with two inbuilt methods keyPress(KeyEvenet.VK\_\*) and keyRelease(KeyEvenet.VK\_\*).

|  |
| --- |
| **package** Codes;    **import** java.awt.AWTException;  **import** java.awt.Robot;  **import** java.awt.event.KeyEvent;  **import** java.util.concurrent.TimeUnit;  **import** org.openqa.selenium.By;  **import** org.openqa.selenium.Keys;  **import** org.openqa.selenium.WebDriver;  **import** org.openqa.selenium.WebElement;  **import** org.openqa.selenium.chrome.ChromeDriver;  **public** **class** PreviousTab {  **public** **static** **void** main(String[] args) **throws** AWTException {                 // TODO Auto-generated method stub                System.setProperty("webdriver.chrome.driver", "C:\\webdriver\\chromedriver.exe");               WebDriver driver = **new** ChromeDriver();               driver.manage().window().maximize();               driver.manage().timeouts().implicitlyWait(20, TimeUnit.SECONDS);               driver.get("https://www.google.com");               WebElement element1 = driver.findElement(By.name("q"));               element1.sendKeys("software testing help");               element1.sendKeys(Keys.ENTER);               String a = Keys.chord(Keys.CONTROL,Keys.RETURN);               driver.findElement(By.partialLinkText("Software Testing Help - A Must Visit Software Testing Portal")).sendKeys(a);               Robot robot = **new** Robot(); // instantiated robot class               robot.keyPress(KeyEvent.VK\_CONTROL); // with robot class you can easily achieve anything if you know the shortcut keys               robot.keyPress(KeyEvent.VK\_2); // here, we have just pressed ctrl+2               robot.keyRelease(KeyEvent.VK\_CONTROL); // once we press and release ctrl+2, it will go to the second tab.               robot.keyRelease(KeyEvent.VK\_2); //if you again want to go back to first tab press and release vk\_1               }  } |

**Q #15) Write a Java Program to find the duplicate characters in a string.**

**Answer:**In this program, we have created a string variable str and initialized an integer count with zero.

Then, we have created a character array to convert our string variable to the character. With the help of for loop, we are performing a comparison between different characters at different indexes.

If two characters of consecutive index match, then it will print that character and the counter will be incremented by 1 after each iteration.

|  |
| --- |
| **public** **class** DuplicateCharacters {    **public** **static** **void** main(String[] args) {                     // TODO Auto-generated method stub                    String str = **new** String("Sakkett");  **int** count = 0;  **char**[] chars = str.toCharArray();                    System.out.println("Duplicate characters are:");  **for** (**int** i=0; i&lt;str.length();i++) {  **for**(**int** j=i+1; j&lt;str.length();j++) {  **if** (chars[i] == chars[j]) {                                                      System.out.println(chars[j]);                                                      count++;  **break**;                                            }                                 }                     }             }    } |

**Output:**

Duplicate characters are:  
k  
t

**Q #16) Write a Java Program to find the second-highest number in an array.**

**Answer:** In this program, we have initialized an array with 10 random elements out of which we are going to find the second-highest number. Here, we have two integers- the largest and second-largest. Both set to the first index of the element. Then, we have printed all the elements using for loop.

Now, the logic is when the element at the 0th index is greater than the largest, then assign arr[0] to largest and secondLargest to largest. Again, if the element at the 0th index is greater than the secondLargest, then assign secondLargest to arr[0].

This will be repeated for each iteration and ultimately after comparing or completing iterations up to array length will give you the secondLargest element.

|  |
| --- |
| **package** codes;  **public** **class** SecondHighestNumberInArray {  **public** **static** **void** main(String[] args)      {  **int** arr[] = { 100,14, 46, 47, 94, 94, 52, 86, 36, 94, 89 };  **int** largest = 0;  **int** secondLargest = 0;          System.out.println("The given array is:");  **for** (**int** i = 0; i < arr.length; i++)          {              System.out.print(arr[i] + "\t");          }  **for** (**int** i = 0; i < arr.length; i++)          {  **if** (arr[i] > largest)              {                  secondLargest = largest;                  largest = arr[i];              }  **else** **if** (arr[i] > secondLargest)              {                  secondLargest = arr[i];              }          }          System.out.println("\nSecond largest number is:" + secondLargest);          System.out.println("Largest Number is: "  +largest);      }  } |

**Output:**

The given array is:  
100 14 46 47 94 94 52 86 36 94 89  
Second largest number is:94  
Largest Number is: 100

**Q #17) Write a Java Program to check Armstrong number.**

**Answer:** First of all we need to understand what Armstrong Number is. Armstrong number is the number which is the sum of the cubes of all its unit, tens and hundred digits for three-digit numbers.

153 = 1\*1\*1 + 5\*5\*5 + 3\*3\*3 = 1 + 125 + 27 = 153

If you have a four-digit number lets say

1634 = 1\*1\*1\*1 + 6\*6\*6\*6 + 3\*3\*3\*3 + 4\*4\*4\*4 = 1 + 1296 + 81 + 256 = 1634

Now, in this program, we have a temp and integers declared. We have initialized c with value 0. Then, we need to assign the integer value which we are going to check for Armstrong (in our case, let us say 153). Then we have assigned our temp variable with that number which we are going to check.

Thereafter, we have used while conditional check where the remainder is assigned to a and the number is divided by 10 and assigned to n. Now, our c variable which was set to zero initially is assigned with c+(a\*a\*a). Suppose we have to evaluate a four-digit number then c should be assigned with c + (a\*a\*a\*a).

Lastly, we have put an if-else statement for conditional checking where we have compared the value contained in c against temp(which has the actual number stored at this point). If it matches, then the number is Armstrong otherwise not.

|  |
| --- |
| **class** Armstrong{  **public** **static** **void** main(String[] args)  {  **int** c=0,a,temp;  **int** n=153;//It is the number to check Armstrong     temp=n;  **while**(n&gt;0)     {     a=n%10;     n=n/10;      c=c+(a\*a\*a);      }  **if**(temp==c)      System.out.println("armstrong number");  **else**          System.out.println("Not armstrong number");     }  } |

**Output:**  
armstrong number

**Q #18) Write a Java Program to remove all white spaces from a string with using replace().**

**Answer:** This is a simple program where we have our string variable str1.

Another string variable str2 is initialized with the replaceAll option which is an inbuilt method to remove n number of whitespaces. Ultimately, we have printed str2 which has no whitespaces.

|  |
| --- |
| **class** RemoveWhiteSpaces  {  **public** **static** **void** main(String[] args)      {          String str1 = "Saket Saurav        is a QualityAna    list";            //1. Using replaceAll() Method            String str2 = str1.replaceAll("\\s", "");            System.out.println(str2);               }  }  } |

**Output:**

SaketSauravisaQualityAnalist

**Q #19) Write a Java Program to remove all white spaces from a string without using replace().**

**Answer:**This is another approach to removing all the white spaces. Again, we have one string variable str1 with some value. Then, we have converted that string into a character array using toCharArray().

Then, we have one StringBuffer object sb which will be used to append the value stored at chars[i] index after we have included for loop and one if condition.

If the condition is set such that then the element at i index of the character array should not be equal to space or tab. Finally, we have printed our StringBuffer object sb.

|  |
| --- |
| **class** RemoveWhiteSpaces  {  **public** **static** **void** main(String[] args)      {          String str1 = "Saket Saurav        is an Autom ation Engi ne      er";    **char**[] chars = str1.toCharArray();            StringBuffer sb = **new** StringBuffer();    **for** (**int** i = 0; i &lt; chars.length; i++)          {  **if**( (chars[i] != ' ') &amp;&amp; (chars[i] != '\t') )              {                  sb.append(chars[i]);              }          }          System.out.println(sb);           //Output : CoreJavajspservletsjdbcstrutshibernatespring      }  } |

**Output:**

SaketSauravisanAutomationEngineer

**Q #20)** **Write a Java Program to read an excel.**

**Answer:**These types of programs are generally used in Selenium framework. We have added detailed comments for every step to make the program more understandable.

The logic starts after we have loaded the sheet in which the data is stored. We are trying to import email and password. For this, we are retrieving the cell using getRow() and getCell() method. Let’s say we have email and passwords at the 1st and 2nd cell.

Then we are setting the type of cell to string. Thereafter we are carrying out a normal web element locator operation (By.id) where we have passed unique locator values such as “email” and “password” which will identify these elements.

Finally, we are sending keys using element.sendKeys where cell.getStringCellValue() is the key. This will return you the value stored at cell number 1 and 2 respectively.

|  |
| --- |
| @Test  **public** **void** ReadData() **throws** IOException   {       // Import excel sheet from a webdriver directory which is inside c drive.       //DataSource is the name of the excel       File src=**new** File("C:\\webdriver\\DataSource.xls");         //This step is for loading the file. We have used FileInputStream as       //we are reading the excel. In case you want to write into the file,       //you need to use FileOutputStream. The path of the file is passed as an argument to FileInputStream       FileInputStream finput = **new** FileInputStream(src);         //This step is to load the workbook of the excel which is done by global HSSFWorkbook in which we have       //passed finput as an argument.      workbook = **new** HSSFWorkbook(finput);         //This step is to load the sheet in which data is stored.       sheet= workbook.getSheetAt(0);    **for**(**int** i=1; i&lt;=sheet.getLastRowNum(); i++)       {           // Import data for Email.           cell = sheet.getRow(i).getCell(1);           cell.setCellType(Cell.CELL\_TYPE\_STRING);           driver.findElement(By.id("email")).sendKeys(cell.getStringCellValue());             // Import data for the password.           cell = sheet.getRow(i).getCell(2);           cell.setCellType(Cell.CELL\_TYPE\_STRING);           driver.findElement(By.id("password")).sendKeys(cell.getStringCellValue());            }    } |

# **Java Program to Display Even Numbers From 1 to 100**

In this section, we will create a **Java program to display even numbers from 1 to 100.** To learn the **Java even number program,** you must have the basic knowledge of **[Java](https://www.javatpoint.com/java-tutorial)**

**for loop** and **if statement.**

We can use different ways to display even numbers:

* Using Java **for** Loop
* Using **nested-if** Statement
* Using **while** Loop

## **Using Java for Loop**

In the following example, we have declared a variable named number and initialized it with 100 (the limit to print the even number). We have used a [for loop](https://www.javatpoint.com/java-for-loop)

that executes up to 100 times and for each iteration of i the if statement checks the number is even or not. After printing each even number, the value if i is increased by 1.

In order to check the number, we have divided the number by 2 if it does not leave any remainder, the number is even and the print statement prints that number**Next**

**Stay**

**DisplayEvenNumbersExample1.java**

1. **public** **class** DisplayEvenNumbersExample1
2. {
3. **public** **static** **void** main(String args[])
4. {
5. **int** number=100;
6. System.out.print("List of even numbers from 1 to "+number+": ");
7. **for** (**int** i=1; i<=number; i++)
8. {
9. //logic to check if the number is even or not
10. //if i%2 is equal to zero, the number is even
11. **if** (i%2==0)
12. {
13. System.out.print(i + " ");
14. }
15. }
16. }
17. }

**Output:**

List of even numbers from 1 to 100: 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100

## **Using nested-if Statement**

The following program is slightly different from the above program because we have defined a method that contains the logic to check even number. Inside the method, we have used nested-if statement.

**DisplayEvenNumbersExample2.java**

1. **public** **class** DisplayEvennumbersExample2
2. {
3. **public** **static** **void** main(String[] args)
4. {
5. System.out.println("List of even numbers: ");
6. //method calling
7. displayEvenNumbers(1, 100);
8. }
9. //method that checks the number is even or not
10. **private** **static** **void** displayEvenNumbers(**int** number, **int** end)
11. {
12. **if**(number>end)
13. **return**;
14. **if**(number%2==0)
15. {
16. //prints the even numbers
17. System.out.print(number +" ");
18. //calling the method and increments the number by 2 if the number is even
19. displayEvenNumbers(number + 2, end);
20. }
21. **else**
22. {
23. //increments the number by 1 if the number is odd
24. displayEvenNumbers(number + 1, end);
25. }
26. }
27. }

**Output:**

List of even numbers:

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100

## **Using while Loop**

In the following program, we have replaced the for loop with [while loop.](https://www.javatpoint.com/java-while-loop)

**DisplayEvenNumbersExample3.java**

1. **import** java.util.Scanner;
2. **public** **class** DisplayEvenNumbersExample3
3. {
4. **public** **static** **void** main(String[] args)
5. {
6. **int** number, i;
7. Scanner sc=**new** Scanner(System.in);
8. System.out.print("Enter the limit: ");
9. number = sc.nextInt();
10. i=2;
11. System.out.print("Lit of even numbers: ");
12. //the while loop executes until the condition become false
13. **while**(i<=number)
14. {
15. //prints the even number
16. System.out.print(i +" ");
17. //increments the variable i by 2
18. i=i+2;
19. }
20. }
21. }

**Output:**

Enter the limit: 100

Lit of even numbers: 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42

# **Java Program to Display Odd Numbers From 1 to 100**

In this section, we will create a **Java program to display odd numbers from 1 to 100.** To learn the **Java odd number program,** you must have the basic knowledge of **[Java](https://www.javatpoint.com/java-tutorial)**

**for loop** and **if statement.**

We can use different Java loops to display odd numbers:

* Using Java **for** Loop
* Using **nested-if** Statement
* Using **while** Loop

## **Using Java for Loop**

In the following example, we have declared a variable named number and initialized it with 100 (the limit to print the odd number). We have used a [for loop](https://www.javatpoint.com/java-for-loop)

that executes up to 100 times and for each iteration of i the if statement checks the number is odd or not. After printing each odd number, the value if i is increased by 1.

In order to check the number, we have divided the number by 2 if it leaves a remainder, the number is odd and the print statement prints that number.

**DisplayOddNumbersExample1.java**

1. **public** **class** DisplayOddNumbersExample1
2. {
3. **public** **static** **void** main(String args[])
4. {
5. **int** number=100;
6. System.out.print("List of odd numbers from 1 to "+number+": ");
7. **for** (**int** i=1; i<=number; i++)
8. {
9. //logic to check if the number is odd or not
10. //if i%2 is not equal to zero, the number is odd
11. **if** (i%2!=0)
12. {
13. System.out.print(i + " ");
14. }
15. }
16. }
17. }

**Output:**

List of odd numbers from 1 to 100: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99

## **Using nested-if Statement**

The following program is slight different from the above program because we have defined a method that contains the logic to check odd number. Inside the method, we have used nested-if statement.

**DisplayOddNumbersExample2.java**

1. **public** **class** DisplayOddnumbersExample2
2. {
3. **public** **static** **void** main(String[] args)
4. {
5. System.out.println("List of odd numbers: ");
6. //method calling
7. displayOddNumbers(1, 100);
8. }
9. //method that checks the number is odd or not
10. **private** **static** **void** displayOddNumbers(**int** number, **int** end)
11. {
12. **if**(number>end)
13. **return**;
14. **if**(number%2!=0)
15. {
16. //prints the odd numbers
17. System.out.print(number +" ");
18. //calling the method and increments the number by 2 if the number is odd
19. displayOddNumbers(number + 2, end);
20. }
21. **else**
22. {
23. //increments the number by 1 if the number is odd
24. displayOddNumbers(number + 1, end);
25. }
26. }
27. }

**Output:**

List of odd numbers:

1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99

## **Using while Loop**

In the following program, we have replaced the for loop with [while loop](https://www.javatpoint.com/java-while-loop)

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**DisplayOddNumbersExample3.java**

1. **import** java.util.Scanner;
2. **public** **class** DisplayOddNumbersExample3
3. {
4. **public** **static** **void** main(String[] args)
5. {
6. **int** number, i;
7. Scanner sc=**new** Scanner(System.in);
8. System.out.print("Enter the limit: ");
9. number = sc.nextInt();
10. i=1;
11. System.out.print("Lit of odd numbers: ");
12. //the while loop executes until the cond\ition become false
13. **while**(i<=number)
14. {
15. //prints the odd number
16. System.out.print(i +" ");
17. //increments the variable i by 2
18. i=i+2;
19. }
20. }
21. }

**Output:**

Enter the limit: 100

Lit of odd numbers: 1 3 5 7 9 11 15 17 13 19 21 23 25 27 29 31 33 35 37 39 41