1.Write 3 different java programs to print the following patterns

                a) 1

                   12

                   123

                   12345

                   Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q1PatternA {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Please input number of rows you want to print:-");

int row = sc.nextInt();

for (int i = 1; i <= row; i++) {

for (int j = 1; j <= i; j++) {

System.out.print(j);

}

System.out.println();

}

}

}

                b) 54321

                   5432

                   543

                   54

                   5

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q1PatternB {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Please input number of rows you want to print:-");

int row = sc.nextInt();

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

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

System.out.print(j);

}

System.out.println();

}

}

}

                c)     x

                      xxx

                     xxxxx

                   xxxxxxx

                     xxxxx

                      xxx

                       x

              Note: Shape will be Rhombus.

Ans) package task07\_01\_2018;

import java.util.Scanner;

public class Q1PatternC {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Please input number of rows you want to print:-");

int row = sc.nextInt();

int sp = 3, k = 1, sp1 = 1;

for (int i = 1; i <= row; i++) {

if (sp == 0) {

for (int a = 1; a <= sp1; a++) {

System.out.print(" ");

}

sp1++;

k -= 2;

} else if (i != 1) {

--sp;

k += 2;

}

for (int a = 1; a <= sp; a++) {

System.out.print(" ");

}

for (int j = 1; j <= k; j++) {

System.out.print("X");

}

System.out.println();

}

}

}

2. Write a java program to take the input from user and determine if it is a prime number or not.

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q2PrimeNo {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Please input the number to check:-");

int count = 0, num = sc.nextInt();

for (int i = 1; i <= num; i++) {

count = num % i == 0 ? count + 1 : count;

}

System.out.println(count == 2 ? num + " is a Prime number" : num + " is not a Prime number");

}

}

3. Write a java program to display the fibonacci series till less than 200 using only 2 variables.

Ans

package task07\_01\_2018;

public class Q3Fibonicci {

public static long i = 0; //First i Varible of static long type use for loop function

public static void main(String[] args) {

loop();

}

static void loop() {

if (fibo(i) < 200) { //Use to limit Fibonacci numbers less than 200

System.out.print(fibo(i) + ","); //To print fibonacci numbers

i++;

loop();

}

}

static long fibo(long n) { //Second n varible of long type to genrate Fibonacci numbers

return n == 0 || n == 1?n:fibo(n - 1) + fibo(n - 2);

}

}

4.Write Java program to check if a name is palindrome.

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q4NamePalindrome {

public static void main(String[] args) {

System.out.print("Enter name:-");

StringBuffer strbuf=new StringBuffer(new Scanner(System.in).nextLine().toUpperCase());

String s=strbuf.reverse().toString();

String s1=strbuf.reverse().toString();

if(s1.equals(s)) {

System.out.print("Name is Palindrome");

}

else {

System.out.print("Name is not Palindrome");

}

}

}

5.Write Java program to check if a number is Armstrong number or not? (input 153 output true,  123 output false)

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q5Armstrong {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter number to check:-");

int num = sc.nextInt();

int arm=0,copy=num;

while(num>0)

{

arm=arm+((num%10)\*(num%10)\*(num%10));

num/=10;

}

if(arm==copy) {

System.out.println(copy+" is a armstrong number !");

}

else {

System.out.println(copy+" is not a armstrong number !");

}

}

}

6.How to find factorial of number in Java using iteration?

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q6Factorial {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("Please enter a number to find its factorial:-");

int f=1,num=sc.nextInt();

for(int i=1;i<=num;i++) {

f=f\*i;

}

System.out.println("Factorial of "+num+" is "+f);

}

}

7.Write a Java code to take a character as a input from user and determine if it is a vowel or a consonant using conditional construct.

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q7Vowel {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("Please enter a charaater:-");

char c=sc.next().charAt(0);

if(c=='a'||c=='e'||c=='i'||c=='o'||c=='u'||c=='A'||c=='E'||c=='I'||c=='O'||c=='U')

{

System.out.println("Entered character is a vowel");

}

else {

System.out.println("Entered character is a Constant");

}

}

}

8. Write a switch case java code to create calculator with + - / \* functionalities only.

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q8Calculator {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("1)Addition\n2)Subtraction\n3)Division\n4)Multiplication\n\nPlease enter a choice:-");

int num1=0,num2=0,choice=sc.nextInt();

if(choice>=1 && choice<=4)

{

System.out.println("Enter a first number:-");

num1=sc.nextInt();

System.out.println("Enter a second number:-");

num2=sc.nextInt();

}

switch(choice)

{

case 1:System.out.println("Addition of "+num1+" + "+num2+" = "+(num1+num2));break;

case 2:System.out.println("Subtraction of "+num1+" - "+num2+" = "+(num1-num2));break;

case 3:System.out.println("Division of "+num1+" / "+num2+" = "+(num2!=0?((float)num1/(float)num2):"Infinite"));break;

case 4:System.out.println("Multiplication of "+num1+" \* "+num2+" = "+(num1\*num2));break;

default:System.out.println("Invalid Input !!!");break;

}

}

}

9. Write a java code to copy one array into another.

Ans)

package task07\_01\_2018;

import java.util.Scanner;

public class Q9CopyArray {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("Enter size for array:-");

int n=sc.nextInt();

int A[]=new int[n];

int B[]=new int[n];

System.out.println("Input numbers in A["+n+"] array:-");

for(int i=0;i<n;i++) {

A[i]=sc.nextInt();

B[i]=A[i];

}

System.out.println("A["+n+"] is copied !");

System.out.println("This is B["+n+"] copied from A["+n+"]");

for(int i=0;i<n;i++){

System.out.println(B[i]);

}

}

}

10. Write a java code to compare the length of two arrays and display the longer array.

Ans)

package task07\_01\_2018;

import java.util.Arrays;

import java.util.Scanner;

public class Q10CMPLength {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter size for array A:-");

int n = sc.nextInt();

int A[] = new int[n];

System.out.println("Enter size for array B:-");

int x = sc.nextInt();

int B[] = new int[x];

System.out.println("Enter number for array A:-");

for (int i = 0; i < n; i++) {

A[i] = sc.nextInt();

}

System.out.println("Enter number for array B:-");

for (int i = 0; i < x; i++) {

B[i] = sc.nextInt();

}

System.out.println(x>n?"Second Array has greater length.\n"+Arrays.toString(B):"First Array has greater length.\n"+Arrays.toString(A));

}

}

11. Write a java code to display a reverse String array.

Ans)

package task07\_01\_2018;

import java.util.Arrays;

import java.util.Collections;

import java.util.List;

public class Q11ReverseStringArrayExample {

public static void main(String[] args) {

String[] strDays = new String[]{"Sunday", "Monday", "Tuesday", "Wednesday"};

List<String> list = Arrays.asList(strDays);

Collections.reverse(list);

strDays = (String[]) list.toArray();

System.out.println("String array reversed");

for(int i=0; i < strDays.length; i++){

System.out.println(strDays[i]);

}

}

}

12.   Write the difference between checked and unchecked exception with example code

Ans) There are two types of exceptions: checked exception and unchecked exception. In this guide, we will discuss them. The main difference between checked and unchecked exception is that the checked exceptions are checked at compile-time while unchecked exceptions are checked at runtime

Checked Exception Example:-

class Example {

public static void main(String args[]) {

try{

int arr[] ={1,2,3,4,5};

System.out.println(arr[7]);

}

catch(ArrayIndexOutOfBoundsException e){

System.out.println("The specified index does not exist " +

"in array. Please correct the error.");

}

}

}

Unchecked Exception Example:-

class Example {

public static void main(String args[])

{

int num1=10;

int num2=0;

/\*Since I'm dividing an integer with 0

\* it should throw ArithmeticException

\*/

int res=num1/num2;

System.out.println(res);

}

}

13.   Write the difference between throw and throws with example code

Ans)

|  |  |  |
| --- | --- | --- |
| No. | throw | throws |
| 1) | Java throw keyword is used to explicitly throw an exception. | Java throws keyword is used to declare an exception. |
| 2) | Checked exception cannot be propagated using throw only. | Checked exception can be propagated with throws. |
| 3) | Throw is followed by an instance. | Throws is followed by class. |
| 4) | Throw is used within the method. | Throws is used with the method signature. |
| 5) | You cannot throw multiple exceptions. | You can declare multiple exceptions e.g. public void method()throws IOException,SQLException. |

Java throw example

void m()

{

throw new ArithmeticException("sorry");

}

Java throws example

void m()throws ArithmeticException

{

//method code

}

14.   Write a note or nested try…catch block with example code

Ans) A situation may arise where a part of a block may cause one error and the entire block itself may cause another error. In such cases, exception handlers have to be nested.

Syntax:

....

try

{

    statement 1;

    statement 2;

    try

    {

        statement 1;

        statement 2;

    }

    catch(Exception e)

    {

    }

}

catch(Exception e)

{

}

15.   Write a note on MultiThreading and MultiTasking

Ans) Multithreading in java is a process of executing multiple threads simultaneously.

Thread is basically a lightweight sub-process, a smallest unit of processing. Multiprocessing and multithreading, both are used to achieve multitasking.

But we use multithreading than multiprocessing because threads share a common memory area. They don't allocate separate memory area so saves memory, and context-switching between the threads takes less time than process.

Java Multithreading is mostly used in games, animation etc

16.   Write a short note on Deque and give example code.

Ans)The ArrayDeque class provides the facility of using deque and resizable-array. It inherits AbstractCollection class and implements the Deque interface.

The important points about ArrayDeque class are:

Unlike Queue, we can add or remove elements from both sides.

Null elements are not allowed in the ArrayDeque.

ArrayDeque is not thread safe, in the absence of external synchronization.

ArrayDeque has no capacity restrictions.

ArrayDeque is faster than LinkedList and Stack.

import java.util.\*;

public class ArrayDequeExample {

public static void main(String[] args) {

//Creating Deque and adding elements

 Deque<String> deque = new ArrayDeque<String>();

deque.add("Ravi");

deque.add("Vijay");

deque.add("Ajay");

//Traversing elements

for (String str : deque) {

System.out.println(str);

}

}

}

17.   Write a short note on Generics an all types of Parameters used in Generics with example code.

Ans) 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, respectively.

Generics also provide compile-time type safety that allows programmers to catch invalid types at compile time.

Using Java Generic concept, we might write a generic method for sorting an array of objects, then invoke the generic method with Integer arrays, Double arrays, String arrays and so on, to sort the array elements.

public class GenericMethodTest {

// generic method printArray

public static < E > void printArray( E[] inputArray ) {

// Display array elements

for(E element : inputArray) {

System.out.printf("%s ", element);

}

System.out.println();

}

public static void main(String args[]) {

// Create arrays of Integer, Double and Character

Integer[] intArray = { 1, 2, 3, 4, 5 };

Double[] doubleArray = { 1.1, 2.2, 3.3, 4.4 };

Character[] charArray = { 'H', 'E', 'L', 'L', 'O' };

System.out.println("Array integerArray contains:");

printArray(intArray); // pass an Integer array

System.out.println("\nArray doubleArray contains:");

printArray(doubleArray); // pass a Double array

System.out.println("\nArray characterArray contains:");

printArray(charArray); // pass a Character array

}

}

18.   Write a short note on Map Interface.

Ans) The Map interface maps unique keys to values. A key is an object that you use to retrieve a value at a later date.

Given a key and a value, you can store the value in a Map object. After the value is stored, you can retrieve it by using its key.

Several methods throw a NoSuchElementException when no items exist in the invoking map.

A ClassCastException is thrown when an object is incompatible with the elements in a map.

A NullPointerException is thrown if an attempt is made to use a null object and null is not allowed in the map.

An UnsupportedOperationException is thrown when an attempt is made to change an unmodifiable map.

19.   Write the difference between LinkedList and ArrayList.

Ans)

|  |  |
| --- | --- |
| ArrayList | LinkedList |
| 1) ArrayList internally uses dynamic array to store the elements. | 1) LinkedList internally uses doubly linked list to store the elements. |
| 2) Manipulation with ArrayList is slow because it internally uses array. If any element is removed from the array, all the bits are shifted in memory. | 2) Manipulation with LinkedList is faster than ArrayList because it uses doubly linked list so no bit shifting is required in memory. |
| 3) ArrayList class can act as a list only because it implements List only. | 3) LinkedList class can act as a list and queue both because it implements List and Deque interfaces. |
| 4) ArrayList is better for storing and accessing data. | LinkedList is better for manipulating data. |

20.   Write a note on Dynamic array in java.

Ans) Arrays in Java are of fixed size. What you'd need is an ArrayList, one of a number of extremely valuable Collections available in Java. List<Integer> ints = new ArrayList<Integer>(); Then to change the list you use ints.add(y) and ints.remove(z) amongst many other handy methods you can find in the appropriate Javadocs.

21.   What is the purpose of the System class?

Ans) Among the facilities provided by the System class are standard input, standard output, and error output streams; access to externally defined properties and environment variables; a means of loading files and libraries; and a utility method for quickly copying a portion of an array.

22.   Which is the abstract parent class of FileWriter ?

Ans) OutputStreamWriter class is abstract parent class of FileWriter

23.   Which class is used to read streams of characters from a file?

Ans) FileReader is used to read streams of characters from a file

24.   Which class is used to read streams of raw bytes from a file?

Ans) FileInputStream- This stream reads raw bytes from a file. The read methods in this class return a byte of data read from a file.

25.   What are the differences between FileInputStream/FileOutputStream and RandomAccessFile

Ans) RandomAccessFile treats the file as an array of bytes where it has the internal pointer. The fact that it treats it like a large array of bytes is what is unique about this class. FileInputStream however just reads the stream and returns the data. It is more suited to reading raw data like images etc. It does not treat the file as a large array, it just keeps tabs of where in the file it has read so far. With FileInputStream you would actually have to read the data and place it into an array to get the same style of access as RandomAccessFile.

26.   Write a note on Channels and Buffer with example.

Ans) Here is the step by step guide to starting reading data from a file using RandomAccessFile, FileChannel, and ByteBuffer:

Open the file you want to read/write using RandomAccessFile in read/write mode.

Call the getChannel() method of RandomAccessFile to get the FileChannel. The position of the returned channel will always be equal to this object's file-pointer offset as returned by the getFilePointer() method.

Create a ByteBuffer using ByteBuffer.allocate() method.

Store the data into ByteBuffer using various put() method e.g. putInt(), putLong().

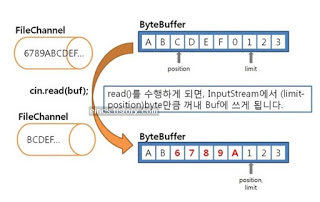
Flip the Buffer so that Channel can read data from the buffer and write into a file. The flip() method changes the pointers and allows you to read data from the buffer.

Call the write() method of FileChannel.

Close the FileChannel

Close the RandomAccessFile.

Another important point to note is that you can use the same buffer for reading and writing, but you need to flip it. Now, let's see a sample Java program to read/write data from files using FileChannel and ByteBuffer in Java. After [Memory Mapped File](http://javarevisited.blogspot.com/2012/01/memorymapped-file-and-io-in-java.html), this is the second fastest way to read and write from a file in Java

[](http://www.shareasale.com/m-pr.cfm?merchantID=53701&userID=880419&productID=687369380)

27.   What is the difference between System.out ,System.err and System.in?

Ans) System.out is "standard output" (stdout) and System.err is "error output" (stderr). Along with System.in (stdin), these are the three standard I/O streams in the Unix model. Most modern programming environments (C, Perl, etc.) support this model.

The standard output stream is used to print output from "normal operations" of the program, while the error stream is for "error messages". These need to be separate -- though in most cases they appear on the same console.

28.   What is the purpose of the System class?(Repeated question)

Ans) Among the facilities provided by the System class are standard input, standard output, and error output streams; access to externally defined properties and environment variables; a means of loading files and libraries; and a utility method for quickly copying a portion of an array.

29.   Which is the abstract parent class of FileWriter ?(Repeated Question)

Ans) OutputStreamWriter class is abstract parent class of FileWriter

30.   Which class is used to read streams of characters from a file?

(Repeated Question)

Ans) FileReader is used to read streams of characters from a file

31.   Which class is used to read streams of raw bytes from a file?

(Repeated Question)

Ans FileInputStream- This stream reads raw bytes from a file. The read methods in this class return a byte of data read from a file.

32.   What are the differences between FileInputStream/FileOutputStream and RandomAccessFile

(Repeated Question)

Ans) RandomAccessFile treats the file as an array of bytes where it has the internal pointer. The fact that it treats it like a large array of bytes is what is unique about this class. FileInputStream however just reads the stream and returns the data. It is more suited to reading raw data like images etc. It does not treat the file as a large array, it just keeps tabs of where in the file it has read so far. With FileInputStream you would actually have to read the data and place it into an array to get the same style of access as RandomAccessFile.

33.   Write a note on Channels and Buffer with example.

(Repeated Question)

Ans) Here is the step by step guide to starting reading data from a file using RandomAccessFile, FileChannel, and ByteBuffer:

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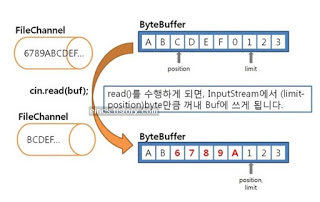
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Close the RandomAccessFile.

Another important point to note is that you can use the same buffer for reading and writing, but you need to flip it. Now, let's see a sample Java program to read/write data from files using FileChannel and ByteBuffer in Java. After [Memory Mapped File](http://javarevisited.blogspot.com/2012/01/memorymapped-file-and-io-in-java.html), this is the second fastest way to read and write from a file in Java

[](http://www.shareasale.com/m-pr.cfm?merchantID=53701&userID=880419&productID=687369380)

34.   Write a note on PreparedStatement and ResultSetMetaData interfaces with code snippets.

Ans) A prepared statement is a feature used to execute the same (or similar) SQL statements repeatedly with high efficiency. Prepared statements basically work like this: Prepare: An SQL statement template is created and sent to the database.

import java.sql.\*;

class InsertPrepared{

public static void main(String args[]){

try{

Class.forName("org.h2.Driver");

Connection con=DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");

PreparedStatement stmt=con.prepareStatement("insert into Emp values(?,?)");

stmt.setInt(1,101);//1 specifies the first parameter in the query

stmt.setString(2,"Ratan");

int i=stmt.executeUpdate();

System.out.println(i+" records inserted");

con.close();

}catch(Exception e){ System.out.println(e);}

}

}

ResultSetMetaData:-An object that can be used to get information about the types and properties of the columns in a ResultSet object. The following code fragment creates the ResultSet object rs, creates the ResultSetMetaData object rsmd, and uses rsmd to find out how many columns rs has and whether the first column in rs can be used in a WHERE clause

import java.sql.\*;

class Rsmd{

public static void main(String args[]){

try{

Class.forName("org.h2.Driver");

Connection con=DriverManager.getConnection("jdbc:h2:tcp://localhost/~/test","sa","");

PreparedStatement ps=con.prepareStatement("select \* from emp");

ResultSet rs=ps.executeQuery();

ResultSetMetaData rsmd=rs.getMetaData();

System.out.println("Total columns: "+rsmd.getColumnCount());

System.out.println("Column Name of 1st column: "+rsmd.getColumnName(1));

System.out.println("Column Type Name of 1st column: "+rsmd.getColumnTypeName(1));

con.close();

}catch(Exception e){ System.out.println(e);}

}

}

35.   Write a note on DDL, DML, DQL, DDL with code snippets.

Ans) Data Definition Language (DDL)  
  
The commands of SQL that are used to create database objects, alter the structure of the database objects and delete database objects from database are collectively called as DDL. Examples include Create, Alter , Drop, Truncate, Rename and Comment Commands.  
  
Create  
  
Create command is used to create database and its Objects like tables, index, stored procedure, views , triggers, functions and etc.  
  
Example  
  
To create Employee table.

create table tblEmployee(

   Id int primary key identity(1,1) not null,

   Name nvarchar(50) ,

   Gender nvarchar(50) ,

   Salary int ,

   DepartmentId int ,

)

Alter  
  
Alter command is used to create database and its Objects.

Drop  
  
Drop command is used to delete objects from database.  
  
Truncate  
  
Trunctae Table command is used to remove all records from a table, including all spaces allocated for records are removed.  
  
Rename  
  
It is used to rename the objects.  
  
Comment  
  
// -> Single line Comments, /\* --Multi Line Comments-- \*/ used to comment the sql statements.   
  
Data Manipulation Language (DML)  
  
The commands of SQL that are used to insert data into the database, modify the data of the database and to delete data from the database are collectively called as DML. Examples include Insert, Update and Delete.  
  
Insert  
  
To insert date into a table.  
  
Update  
  
To update the existing data in a table.  
  
Delete  
  
delete all records from a table.   
  
Data Query Language (DQL)  
  
The commands of SQL that are used to retrieve data from the database are collectively called as DQL. So all Select statements comes under DQL.  
  
Select  
  
To retreive data from the database table.   
  
Data Control Language (DCL)  
  
The commands of SQL that are used to control the access to data stored in the database are collectively called as DCL and examples include Grant and Revoke.  
  
Grant  
  
All users access previleges to database.  
  
Revoke  
  
Withdraw users access previleges given by using the Grant command.

36.   Write a note on HTML , CSS and Javascript.

Ans)HTML:- HTML is an acronym which stands for Hyper Text Markup Language. Let's see what is Hyper Text and what is Markup Language?

Hyper Text: Hyper Text simply means "Text within Text". A text has a link within it, is a hypertext. Every time when you click on a word which brings you to a new webpage, you have clicked on a hypertext.

Markup language: A markup language is a programming language that is used make text more interactive and dynamic. It can turn a text into images, tables, links etc.

CSS:- Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs,variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

JavaScript:- Javascript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities.

37.   Write a code to fetch the data from H2 and put it in any collection object and display it.

Ans)

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.sql.Statement;

public class H2Config {

// JDBC driver name and database URL

static final String JDBC\_DRIVER = "org.h2.Driver";

static final String DB\_URL = "jdbc:h2:~/test";

// Database credentials

static final String USER = "sa";

static final String PASS = "";

public static void main(String[] args) {

Connection conn = null;

Statement stmt = null;

try {

// STEP 1: Register JDBC driver

Class.forName(JDBC\_DRIVER);

// STEP 2: Open a connection

System.out.println("Connecting to database...");

conn = DriverManager.getConnection(DB\_URL, USER, PASS);

// STEP 3: Execute a query

stmt = conn.createStatement();

String sql = "SELECT \* FROM EMPLOYEE ";

ResultSet rs = stmt.executeQuery(sql);

System.out.println("Id\tName\tSalery");

while (rs.next()) {

System.out.println(rs.getString(1)+"\t" + rs.getString(2)+"\t" + rs.getString(3));

}

stmt.close();

conn.close();

} catch (SQLException se) {

// Handle errors for JDBC

se.printStackTrace();

} catch (Exception e) {

// Handle errors for Class.forName

e.printStackTrace();

} finally {

// finally block used to close resources

try {

if (stmt != null)

stmt.close();

} catch (SQLException se2) {

} // nothing we can do

try {

if (conn != null)

conn.close();

} catch (SQLException se) {

se.printStackTrace();

} // end finally try

} // end try

System.out.println("Goodbye!");

}

}

38.   Describe the different approaches of String processing.

Ans)

In java, string is basically an object that represents sequence of char values. An array of characters works same as java string. For example:

char[] ch={'b','h','a','n','o','o'};

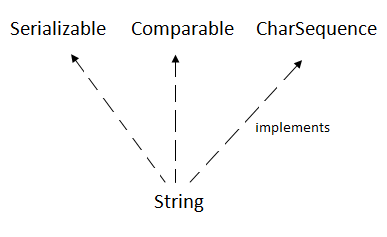
String s=new String(ch);

is same as:

String s="bhanoo";

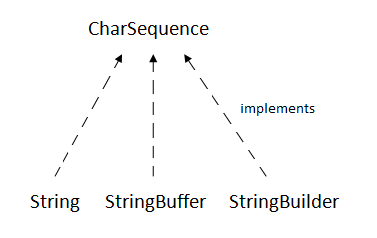
Java String class provides a lot of methods to perform operations on string such as compare(), concat(), equals(), split(), length(), replace(), compareTo(), intern(), substring() etc.

The java.lang.String class implements Serializable, Comparable and CharSequence interfaces.



CharSequence Interface

The CharSequence interface is used to represent sequence of characters. It is implemented by String, StringBuffer and StringBuilder classes. It means, we can create string in java by using these 3 classes.



The java String is immutable i.e. it cannot be changed. Whenever we change any string, a new instance is created. For mutable string, you can use StringBuffer and StringBuilder classes.

We will discuss about immutable string later. Let's first understand what is string in java and how to create the string object.

39.   What is the difference between System.out ,System.err and System.in?

(Repeated Question)

Ans) System.out is "standard output" (stdout) and System.err is "error output" (stderr). Along with System.in (stdin), these are the three standard I/O streams in the Unix model. Most modern programming environments (C, Perl, etc.) support this model.

The standard output stream is used to print output from "normal operations" of the program, while the error stream is for "error messages". These need to be separate -- though in most cases they appear on the same console.

40.   What is the purpose of the System class?

(Repeated Question)

Among the facilities provided by the System class are standard input, standard output, and error output streams; access to externally defined properties and environment variables; a means of loading files and libraries; and a utility method for quickly copying a portion of an array

41.   Which is the abstract parent class of FileWriter ?

(Repeated Question)

Ans) OutputStreamWriter class is abstract parent class of FileWriter

42.   Which class is used to read streams of characters from a file?

(Repeated Question)

Ans)FileRead is used to read streams of characters from a file

43.   Which class is used to read streams of raw bytes from a file?

(Repeated Question)

Ans) FileInputStream- This stream reads raw bytes from a file. The read methods in this class return a byte of data read from a file.

44.   What are the differences between FileInputStream/FileOutputStream and RandomAccessFile

(Repeated Question)

Ans) RandomAccessFile treats the file as an array of bytes where it has the internal pointer. The fact that it treats it like a large array of bytes is what is unique about this class. FileInputStream however just reads the stream and returns the data. It is more suited to reading raw data like images etc. It does not treat the file as a large array, it just keeps tabs of where in the file it has read so far. With FileInputStream you would actually have to read the data and place it into an array to get the same style of access as RandomAccessFile.

45.   Write a note on Channels and Buffer with example.

(Repeated Question)

Ans) Here is the step by step guide to starting reading data from a file using RandomAccessFile, FileChannel, and ByteBuffer:

Open the file you want to read/write using RandomAccessFile in read/write mode.

Call the getChannel() method of RandomAccessFile to get the FileChannel. The position of the returned channel will always be equal to this object's file-pointer offset as returned by the getFilePointer() method.

Create a ByteBuffer using ByteBuffer.allocate() method.

Store the data into ByteBuffer using various put() method e.g. putInt(), putLong().

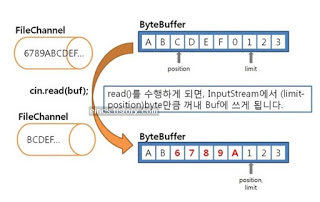
Flip the Buffer so that Channel can read data from the buffer and write into a file. The flip() method changes the pointers and allows you to read data from the buffer.

Call the write() method of FileChannel.

Close the FileChannel

Close the RandomAccessFile.

Another important point to note is that you can use the same buffer for reading and writing, but you need to flip it. Now, let's see a sample Java program to read/write data from files using FileChannel and ByteBuffer in Java. After [Memory Mapped File](http://javarevisited.blogspot.com/2012/01/memorymapped-file-and-io-in-java.html), this is the second fastest way to read and write from a file in Java

[](http://www.shareasale.com/m-pr.cfm?merchantID=53701&userID=880419&productID=687369380)