295. Date class concepts

Create new class(dateDemo)

if you want to print current date, current time how can you print that ?

when you are asked to enter that date into the current date field where you need to get it from java then you use a “date class” which will give you that current date and current time.

Even if you want it in seconds. So every day information every day week month year you can retrieve from the java classes.

Java guys has developed glasska date from which you can get all these details.

So basically we need to use the methods present in that particular class.

Date class comes form util package.

So this date object you are converting into string. So then you can visually see in your output.

what you might be required in some specific format – mm/dd/yyyy HH:MM:SS

java guys has developed new class Date & Simple Date Format

 how can you print the data in your required format ?

Date d = new Date();

SimpleDateFormat sdf = new SimpleDateFormat(“M/d/yyyy”);

SimpleDateFormat sd = new SimpleDateFormat(“M/d/yyyy hh:mm:ss”);

System.out.println(sdf.format(d));

System.out.println(sd.format(d));

System.out.println(d.toString()); // default format

Output : 05/02/2024

05/02/2024 11:24:02

Thu May 02 11:24:02 IST 2024

[Java - Date and Time (tutorialspoint.com)](https://www.tutorialspoint.com/java/java_date_time.htm)

296. working with calendar objects in java

Create new class(calenderDemo)

So if you want to create a calendar object so you need to say calendar dot getinstance.

what is the difference between date & calendar both are same but the difference is

in calendar class we have used a calendar instance to actually get the system date and time. But in the date class we have used date instance.

So lots of methods are there in this calendar instance which you will not find in date class.

Calendar cal = Calendar.*getInstance*();

SimpleDateFormat sd = **new** SimpleDateFormat("M/d/yyyy hh:MM:SS");

System.***out***.println(sd.format(cal.getTime()));

System.***out***.println(cal.get(Calendar.***DAY\_OF\_MONTH***));

System.***out***.println(cal.get(Calendar.***DAY\_OF\_WEEK\_IN\_MONTH***));

System.***out***.println(cal.get(Calendar.***AM\_PM***)); // if it’s AM it print zero PM - 1

System.***out***.println(cal.get(Calendar.***MINUTE***));

297. How constructor play a crucial role

WHAT IS CONSTRUCTOR ?

constructor executes a block of code whenever an object is created.

So that means whenever you create an object for the class automatically a block of code will get executed That means constructor is invoked whenever you create an object.

constructor should be written it just like a methods but the only difference between the method and constructor is constructor will not return any values and name of constructors should be always class name only.

Now our class name is constructDemo  if you want to create a constructor for this class

Public class name()

{

}

That’s all.

whatever you write in this constructor will be executed. Whoever creates object to this(constructDemo) if you create an object for this class (constructDemo) automatically the set of lines present in this block will get executed. That's the main aim of constructor.

Whenever the created object will execute control we'll check whether it is there any constructor explicitly defined. If it is defined it will execute that particular block.

whenever you create an object constructor is called.

internally if you don't define any constructor compiler we called default constructor.

you say implicit constructor which explicit in the sense you are defining it explicitly, implicit

it will have it in your java library.

So compiler will call implicit instructor if you have not defined in the constructor block

but if you define it will go and execute that particular block.

Realtime :  if I want to initiate objects are defined variables for my program I will do that in the constructor so that I need not go and call that automatically when my object is created for that particular class. Those all variables will be getting initialized right so that they use.

So in general people use this block or defined variables are initiate some properties and the real time and they go using this constructor.

298. Types of constructors and their usage

One more constructor called Parameterized constructor - with the same syntax we actually come up with some parameters to constrct

whenever you are creating an object if you don't pass any parameters automatically it will be the default constructor.

299. Constrructor code download

package coreJava;

public class constructDemo {

// Default

public constructDemo()

{

System.out.println(" I am in the constructor");

System.out.println(" I am in the constructor lecture 1");

}

// Parameterized constructor

public constructDemo(int a, int b)

{

System.out.println(" I am in the parameterized constructor");

int c=a+b;

System.out.println(c);

}

public constructDemo(String str)

{

System.out.println(str);

}

public void getdata()

{

System.out.println("I am the method");

}

//will not return values

//name of constructor should be the class name

public static void main(String[] args) {

// TODO Auto-generated method stub

constructDemo cd= new constructDemo();

constructDemo cds= new constructDemo("hello");

constructDemo c= new constructDemo(4,5);

// java compiler will call implict constructor if you have not defined constructor block

//when ever you create an object constructor is called

//block of code whenever an object is created

300. What is super keyword ?

create one class (childDemo)

create one more class (parentDemo)

in the childDemo, I'm actually inheriting the properties of parentDemo using extends.

childDemo is taking the properties of parentDemo.

…..  gives preference to the local variable.

How do I bring my parent name to child class ?

Super keyword will actually refers to the parent class.

Parent class in the sense from where you inherit the properties to this class, it would go and refer to that class.

Note : If you have the same variable(name) defined in our both child & parent class if you execute to print the child class the vaue should come child class only. If you want the parent then you need to use super keyword to get the parent class variable to print in the child class.

to differentiate between parent variable, and child variable, you could use super keyword.

There is no child class name variable. Then in that case, both refers to the parent class variable only, because when you say name as it inherits the properties of parent class, it go and picks from the parent class. In that case, super is not required.

In parent class

String name = “Rahul”;

In Child class

String name = “QA click Academy”;

Public class child demo extends parentdemo{

Public void String getStringData()

{

Println(name);

Println(super.name);

}

Child demo cd = childdemo()

cd.getStringData();

301. super keyword practical usage

how to handle a method if there is a common method between parent and child ?

note : whenever you use a super constructor in child constructor,

it should always be the first line in the child constructor.

In parent class

String name = “Rahul”;

Public parentDemo()

{

Println(“parent class constructor”);

}

Public void getData();

{

Println(“I am in parent class”);

}

In Child class

Public class child demo extends parentdemo{

String name = “QA click Academy”;

Public childDemo()

{

Super();

Println(“child class constructor”);

}

Public void String getStringData()

{

Println(name);

Println(super.name);

}

Public void getData();

{

Super.getData();

Println(“I am in child class”);

}

Child demo cd = childdemo()

cd.getStringData();

cd.getData();

output :

parent class contructor

child class constructor

QA click Academy

Rahul

I’m in parent class

I’m in child class

302. importance of this keyword

You are using the “a” variable as a 2 value in the entire your class. ( int a=2; )

But in one specific method you want that variable “a” as a 3. ( int a =3; )

 when you use “this” keyword, it refers to the global variable, not your local variable

which is present in your methods.

super keyword actually brings us the value from parent to child class. but “this” keyword brings us value from the object level that is class level.

Interview que : I'm declaring one global variable. I'm declaring one local variable. I want the sum of local variable plus global variable in my output. How can you do that?

//this keyword demo

package coreJava;

public class thisDemo {

int a= 2;

public void getData() {

int a= 3;

int b=a+this.a;

System.out.println(a);

System.out.println(this.a);

System.out.println(b);

// this refers to current object- object scope lies in class level

}

public static void main(String[] args) {

thisDemo td=new thisDemo();

td.getData();

// output : 3,2,5

303. Static and Non Static Importance in Java

What are Instance Variables ?

What are Local Variables ?

What are class Variables ?

Use of static keyword in java

Importance of static method and static variables

How static blocks are defined ?

How to differentiate all those variables ?

where exactly we use static keyword and how we define static methods and variables ?

Create class(StaticVar)

So basically, we need to collect the name of the person, where is he living, and their street.

It's just a census report.

Create 3 variables to create a census report, and we have one class.

what is constructor?

So constructor is the placewhere you can initialize your variables or you can do any operation in constructor. So this constructor will be automatically called when you create an object for this class.

Note : 1. if you want to create or access any methods or variables,it's mandatory for you to create an object of your own class as well, and that should be done only in public static void main.

2. objects for class cannot be created outside of the main method. They should be inside the main method.

when you create an instance, you can say either creating an object or creating an instance, both are same.

when you create an object/Instance with paramters, few variables are updating automatically. So that's why these are tied up to this instance, and we call them as instance variables.

 Variables which are declared immediately after class declaration will be moved as instance variables, and these variables change from object to object.

when you create an object with some data. So to make this common(banaglore)and to have one copy so that all objects will refer and use the same copy, to do that, you have to use the keyword called static.

So all static variables are class variables. and the remaining variables which are declared

in class belong to instance var, and the variables which comes in constructor are called local variables.

here is a method called static method. If you just need to add one keyword called static,

and that method will automatically become static.

Note : static method will only accept static variables.

if you want to call static methods, you need not depend upon objects, because we just saw that static keyword is independent of objects. Static keywords are belonging to classes.

So these are called class variables, and these methods are also called class methods.

So these are not relate on any object.

So to call this method, you can call with class name, not with object name.

all static methods can be directly accessed with class name dot method name.

static block- this block is used to initialize all your static variables.

Public class StaticVar {

String name; // Instance variable – why we call it as instance var – bcze these are tied up with project

String address; // instance variables

Static String city = “Banagalore”;

Static int I;

Static {

City = “Bangalore”;

I=0;

}

StaticVar(String name, String address) // constructor

{

// this refers to the instance variables present in your class.

This.name=name; // this refers to current object/class instance

This.address = address;

I++;

Println(I);

}

Public void getAddress()

{

Println(address+” “+city)

}

Public static void getCity()  
{

Println(city);

}

Public static void main(String[ ] args) {

StaticVar obj = new StaticVar(“Bob”,”marthalli”)

StaticVar obj1 = new StaticVar(“Ram”, “Jayanagar”)

StaticVar obj2 = new StaticVar(“john”, “Jayanagar”)

Obj.getAddress();

Obj1.getAddress();

StaticVar.getCity();

StaticVar.i=4;

Obj.address=”XYZ”;

304. Final keyword in Java

if you declare any variable as final That means you cannot change this value again.( final i=4; )

whenever you feel that something should be constant value there you can use this.

which any of your class should not edit that variable then please go ahead and use final keyword before that variable so that if someone tries to change that variable number it will not be changed and it will throw an error.

 when I change child class as final. I'm not able to use that as a parent class.

if you want to declare any method as the final method you cannot override this method again.

Final keyword is diff and Finally key word is diff.

Final class finaldemo{  
// body

}

// class name as final that means you cannot extend that class.

305. Packages and their usage in OOPS

When I'm writing scripts for each and every java classes There is some line which is automatically pre-populated on each java class that is package corejava.

Basically packages are nothing but set of classes and interfaces, Enumerations there are lot many. So it's set of bunch of classes and interfaces.

 Java comes up the few inbuilt packages java.lang

Java. Lang package is a default package and it comes within java compiler itself. ( which is an inbuilt compiler.)

Java.util – all the collection and interface comes from util package

Syntax : import packagename.classname

 if someone wants to use our classes then just go and import our package

import packagename.classname they can access our class in to their class.

306. Types of packages and how they will help in real time

Class A can use class B directly by creating the object if both class A & Class B belongs to same package.

if you are under samepackage you need not import your class will have the knowledge of the remaining classes of your same package.

But if you move out of the package and then if you're trying to define any class then it has no idea from what package you are asking this. So in that case we need to explicitly import package with a keyword “import” . this is an user defined package.

what's the reason of having multiple packages ? – to maintain the consistence

real project you are working on e-commerce website. Payment page you have to just click on buy. After entering credit card details

So basically you are write one buy class which handles everything and if you are not in the payment page but you have reedeem a coupon which will actually unlock that particular product for zero price. And now if you want to click buy again without giving payment details you have one buy class to handle that for coupons. Now here you are held buy class. And in this case also you are not entering any payment that is you are into some

payment details.

So to avoid redendence of same buy class two times what you do is you write this in payment package and u write this is coupon package so that there will be no conflict between the same class.

So both are differentiate there package names.

307. Importance of access modifiers - public, private, protected,default

If you do not mention any access modifiers here your java class automatically things it as a default access modifier.

if it is default that means you can access this method anywhere in your package.

If you want to use this ABC method you could use it in any class under the same package.

if you go out of this package then you cannot access this method though you have imported that packagename.classname But still you will not be able to access this matter if you have not specified it as public.

If you don't specify then by default things are the default access modifier and the rule of the default access modifier is It can be accessed anywhere only in the package not outside of it.

 what does public access modifier do ? - So if you make a variable are method as a public then you will have access across all the packages.

308. Difference between public and private modifers-With Examples

Private – if you mark your method are variable as private you cannot access method are variable outside the class of same package as well.

So to make credit card details are restricted to that particular class.

developer put private variable to all card details so other class cannot use that.

finally access modifier – If you define variable or method as Private u can access those in subclasses only that means if I define these as protected then whichever class inheriting this parent class only those subclasses can have access to this ABC method not all other classes.

This applies for other packages

//Public,private,protected,default

//default – access method anywhere only in package

//protected – variable/method as private : you can can access those in +subclass only(other packages)

// public : Variable method a public : then you will have access across all the packges

//private : you can not access method or variable outside the class of same package.

309. Different kind of exceptions

So if I feel that any of my code throw an error how can you handle that error ?

3lines of code -  I'm not sure whether these lines of code throw an error or not.

If they throw an error I need to catch them and print a msg without faililing. So that can be using try catch mechanism.

So in general when people try to write the code and they're suspect that there might be an error to do that then they will use that in exception handling.

in real time you have purchased something. But purchase return as a failed. – people do is they write that in try block as it got fail control will go to catch block And here they say retry again because they surely know that script failed in try Block. That’s the reason only control came to catch block they may be use for that situation.

Also it's clearly helpful to see which kind of exception you got.

Int b=7;

Int c=0;

Try

{

Int k=b/c;

Println(k);

}

Catch(Exception e)

{

//retry again

Println(“I catched the error exception”);

}

310. Try catch Mechanism to handle exceptions

// one try can followed by multiple catch blocks That means you could write one try block and multiple catch blocks in your script.

//catch block should always follow by try block.

// In b/w try & catch if write some other code script will not accept

So exceptions are different type of exceptions you have. If you google it you will get.

So for each exception you can write separate catch block

If you want to get a specific exception then

Catch ( ArithmaticException ext)

{

}

 if you are not sure what kind of exception it is then you could simply write as an exception.

Int b=7;

Int c=0;

Try

{

Int k=b/c;

//int arr[ ] = new arr[5];

//println(arr[7]);

}

Catch(ArothematicException et)

{

Println(“I catched the artimatica/exception”)

}

Catch(IndexOutofBoundException er)

{

Println(“I catched the IndexOutofBoundException”)

}

Catch(Exceptions e1)

{

Println(“I catched the Exception”)

311. Importance of finally block in java

This block is executed irrespective of exception thrown or not

This block is executed if the program run successfully and even executor's if the program doesn't run.

Let’s say when compiling the program 13th line it got error and it failed the rest of the code will not be exceuted

specialty of having finally block even the script got fail somewhere in the middle.

It comes down checks for finally block and execute all the statements present in that block.

one more thing this finally blocks should be wriiten only when you use try block.

…. U could use try and finally combination by skipping catch now if u don’t write any catch that means there is no way the error will be catch buy the catch block the script will definitely fail.

finally block to close the browser once

the test is done irrespective of pass or fail are to delete the cookies

Irrespective of pass or fail final block will executed.

Interview que : Tell me one way where will get the final block will executed?

Is there any way Finally block will not get executed ?

It will not executed when you stop jvm forcefully when it’s running if u try to stop this red button forcefully before it executing in that case only finally block will not execute.

312. Exception code download

package coreJava;

//one try can be followed by mutiplle catch blocks

//catch should be an immediate block after try

// public class exceptionDemo {

public static void main(String[] args) {

int b=7;

int c=0;

try {

//  purchased faile

int k=b/c;//

//int arr[]=new int[5];

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

  }

catch(ArithmeticException et)

{

System.out.println("I catched the Arthimetic/exception");

}

catch(IndexOutOfBoundsException ets)

{

System.out.println("I catched the IndexBound/exception");

}

catch(Exception e) { //  retry again System.out.println("I catched the error/exception");

}

finally { System.out.println("delete cookies");

//THis block is executed irrespective of exception thrown or not }

// TODO Auto-generated method stub

}

}