Seasalization

- 1 Introduction
- @ Object Graphs in Serialization
- 3 Customized Seovalization
- 4 Sevialization w. I. t Zinheritana.

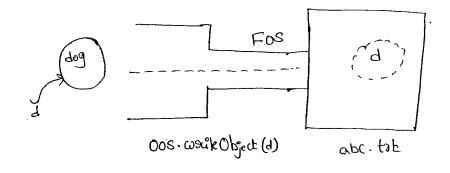
Searlization:

- The polocess of worting State of an Object to a fire is Called Seocalization.
- → But Stouctly Pt is a poroces of Conventing an Object form

 Java Supposited from to either file Supposited from on Network Supposited

 From.
- → By Using Fikoutput Stateam and Object Output Stateam Classes

We an achieve Seocialization.



Deserialization:

-)

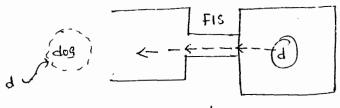
The process of Greating State of an object from a file is Called DeServalization.

http://javabynataraj.blogspot.com 388 of 401.

→ But Strictly Speaking, It is set the process of Converting an Object from either network Supposited from to java Supposited from.

→ By Using FileInputStoleam and ObjectInputStoleam Classes

We Can achieve De-Sezialization.



OIS. FreadObject(d)

```
imposit java. io. +;
Class Dog Proplements Sesializable
  Pot 1 = 10;
  int j = 20;
 Class Serializable Demo
    p.s.v.m(____)throws Exaption
                                                                        )
        Dog d, = new Dog();
                                                                       ÷
         teleOutput Stoream fos = new FireOutput Stoream ("abc. tat");
                                                                       ()
                                                                       \mathbf{j}
          Object Output Stream oos = New Object Output Stream (fos);
                                                                       U
          oos. while object (di),
```

http://javabynataraj.blogspot.com 389 of 401.

0

```
File Input Stoream fis = New FIS ("abc. tab");

OIS ois = New OIS (fis);

Dog de = (Dog) ois oread Object();

8-0.pln (de.i + "----"+de.i);
```

- -- We can Penfonin Senialization only fon Senializable Objects.
- An Object is Said to be Servalizable iff the Cornersponding class implements Servalizable intosface.
-) Settializable interface peresent in java.io package
- and doesn't Contain any methods, it is a masikes interiface.
- \rightarrow 2°F we asse taying to sessialize a non-Sessializable Object we will get Run-time exception Saying Not-Sessializable Exception.

tonansient Keywoord 3-

(۽

__)

- At the time of Serialization if we don't want to Serialize The Value of a particular variable to meet the Security Constraint we have to declare those variables with "transient" toyound.
- → Ot the time of Servialization JVM ignories original value of transisent variable and Saves default value.

tonansiant Vs Static:

- Static vasciables asse not past of Object here they won't pasticipate in Secialization process. Due to this declassing a Static vasciable as townsistent these is no impact.

tonansisent Vs final:

I final variables will be participated into Serialization directly by their values Hence declaring a final variable with transistent there is no impact.

Summary :-

| declasiation | %p | Э |
|---------------------------------------------------|-------|---------------------------------------------------------------------------------------------|
| ① int i=10 int j=20 | 10 20 |))) |
| \emptyset tonansient int i=10; int $j=20$ | 0 20 |)) |
| 3 tonansient final int i=10 tonansient int j=20; | 10 0 |))) |
| 4 tomonsient inti=10; tomonsient static intj=5 | 020 | (((((((((((((((((((|

Object Graph in Sevialization!

```
when even we are trying to Serialize an object the Set of all objects which are reachable from that object will be Serialized automatically this group of objects is called object Graph.
```

JEN Object Graph every object Should be Sercializable Otherwise we will get 'Not-Servializable-Exception."

```
۔ إهل
            imposit java-10-+,
           Class Dog implements Sezializable
              Cat c= Dew Cat();
            Class Cat implements Servalizable
≐
               Rat 91 = new Ratio;
            Class Rat implements
                                   Sezializable
                102 = 20;
           Class Socialize Demo 2
             P.S. v.m (String [7 args) throws Exception
                Dog d= Daw Dog();
                Fre Output Stream for = new File Output Stream (abc. sear);
```

Object Output Grean

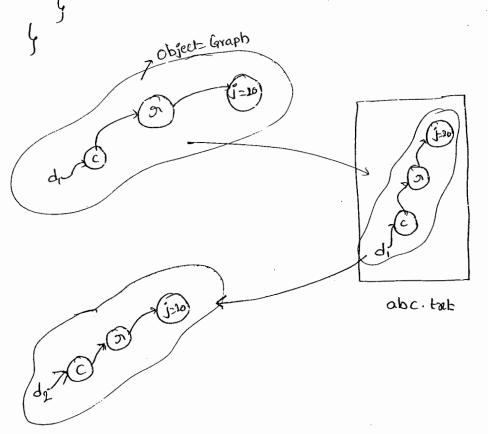
005. write Object (d);

os = new https://www.bupptersi-blossphrsom 392 of 401.

File Input Stoream Lis = new File Input Stoream ("abc-Son") Object-Input Stream ois = new Object-Input Stream (fis);

Dog di = (Dog) ois . mead Object ();

S.o. pln (di.c.o.i); //20



→ 2n the above poog. When even we are Serializing a Dog Object automatically Cat & Rat Objects will be Serialized. because These age The past of object graph of dog.

-> Among dog. Cat & Rat if atleast one class is not Sesializable Then we will get Not-Servable Exaption.

http://javabynataraj.blogspot.com 393 of 401.

)

)

•

)

•

•

7

()

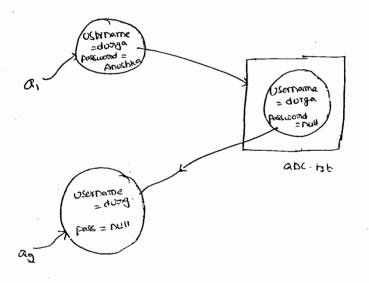
0

 \bigcirc

Customized Seobalization:

7

```
- In the default Serialization there may be a charge of loss of informaly
 because of transient Keywood.
En!- class Account implements Sevializable
        Storing ascorname = "duonga";
     transient Storing passwood = "anushka";
     Class Scallize Demos
       P.S. V. m (Storing [] asys) throws Exception
         Account a = new Account();
         S. o. plo(a, username + "----" a, password); duoga ... anoshka
         File Output Stoream fos = New File Output Stoream ("abc. sex")
        Object Output Stoream oos = new Object Output Stoream (Pos).
         oos. write Object (a);
        File Input Stoream Pis = new File Input Stream ( abc. sear).
        Object Input Stream ois = new Object Input Stream ( Pis);
       Account as = (Account) great Object ();
       Sto-pin (az. username+ "----"+az. password);
```



Class of Servalized Object.

In the above Example before Servalization Account Object Can provide, peroper useaname & password But after deservalization Account Object Can't provide the Osiginal passward. Hence during default Serialization These may be a Chance of loss of information due to transient key word. . We Can Die Cover This loss of information by using Customized Scriptization We an implement Customized Sescalization by using the following a method (1) possivate void cooste Object (DOS as) throws Excaption - This method will be Executed automatically at the time of Socialization it is a Call back method. (2) portvate void onead Object (OIS is) throws Exaption) -> This method will be Executed automatically at the time of description it is a Caliback method. \mathbf{O} -> The above 2 methods we have to define in the Cosmesponding

 \mathbf{O}

```
ex:-
```

≘

)

)

```
imposit java. io *;
Class Account implements Socializable
         asconame = " duonga",
  transient Storng pwd = anushka";
  Possate void worste Object Cobject Output Stream as ) throws Braption
   OS. defaultWoute Object ();
  String epud = (String) is . snead Object ();
   Pwd = epwd · Substaing (3);
      Cush-Servatize Demol
P-S.V.m (Stockye angs) throws
                                     Exaption
 Account as = new Account().
 S.o.pln (al. Usesname+ " --- "+a, pwd);
File Output Stoream for = new File Output Stoream ("abc. seor").
 Object Output Stream oos = new Object output Stream (-fas);
 oos. with Object (a1);
 FileInputStream
                   fis = new File Input Stream ("abc. ser");
 Object Input Stream
                    O's = new Object Input Gream ( fis);
 Accounts as = new (Accounts) ois http://javabynataraj.blogspot.com 396 of 401.
```

S. o. pln (a2. username + 1 --- 1 + a2. pwd), USernam =durg pwd = anushka (123 anushka bod = Dull 123 anushka Usernam = dunga PWd = Pull Seovalization work Znheoutance: -> 8F The passent class Proplements Sescalizable than Every child class is by default Sevializable i.e., Sevializable nature is inheriting forom pasient to child (p+c).) ep!-Class Animal Amplements Sescializable int x=10; b Class Dog extends Animal int gazo; http://javabynataraj.blogspot.com 397 of 401. -> we can Servalize dog Object eventhough dog class doesn't implement Servalizable interface Explicitly. because it's parient class Animal is Servalizable.

Case 2"

Eventhough powert class doesn't implement Sevializable if if the child is Sevializable than we can Sevialize child class object. At the time of Sevialization JVM ignoses the object values of instance variables which comeing from Non-Sevializable parent & Storie default values.

At the time of deservalization JVM checkes is any parent class is

non-Scoralizable on not, Jum Coneates a Sepenate Object for every non-Seoralizable parent & Share its instance variables to the Current : Object.

→ for this Jvm always caus no agreement Construction of the non-Serializable parent. If the non-Serializable parent doesn't have no apprehent Constructor then we will get Runtime Exaption.

Ex:-

 \mathbf{C}

()

imposit java·io.*

Class Animal

•

Pot 9=10;

-Animal()

S.o.phr C. Ansmar Construction Cared), http://javabynátaraj.blogspot.com 398 of 401.

```
Class Dog extends Animal implements Sescalizable
   int j=20;
   Dogu
      S-o pln ("Dog Construction Called");
4
Class Serialize Demo 6
   P. S. V. m (Stornger args) throws Exception
      Dog d = New Dog();
      di = 888;
      d.j = 999,
                                                                       )
                                                                       9
     FileOutput Stream fos = new FileOutput Stream ("abc-sen"):
                                                                       .)
     Object OutputStream cos = new Object OutputStream (fos);
                                                                       )
                                                                       )
      oos. wood kobject (d);
                                                                       )
     S.o. PIn (" Deservalization Started"):
                                                                       )
                                                                       \odot
     File Input Stream fis = New File Input Stream ("abc. Sen").
                                                                       .
                                                                       \Theta
      Object Enpot Stream ois = new Object Enpot Stream (fs);
                                                                       0
       Dog di = (Dog) ors, read Objects ();
                                                                       \bigcirc
       S.o. plo (d) it = --- 4+diff; http://javabynataraj.blogspot.com 399 of 401.
```

Dog " "
Designalization Started

Animal Constructor Called

Animal Constructor Called

Anomal Constructor Called

