Exception Handling

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How of paogram is Called Exception ". Ex!- Sleeping Exception, Type punchoosed Exception, Filenot Found— Exception, Type punchoosed Exception, Filenot Found— Exception, Type punchoosed Exceptions, The main Objective The is highly die Commended to handle Exceptions, the main Objective To Exception handling is "Grace full termination of the program": Exception handling does not mean dieparating an Exception, we have to define alternative way to Continue diest of the program normally, this is nothing but Exception Handling. Ext. 2º our programing diequibrement is to died data form the file localing at Landon & at diuntime if that file is not available our program should not be terminated abnormally. Cue have to priorite a local file to Continue diest of the programman
Ex! - Sleeping Exception, Type punchosed Exception, file not found - Exceptions.) The is highly secommended to handle Exceptions, the main Objective of Exception handling is "Genaceful termination of the program": Exception handling does not mean separiting an Exception, we have to define alternative way to Continue stest of the program normally, this is nothing but Exception Handling. Ext. 28 our programing sequipment is to shead data forom the file locating at Landon & at suntime is that file is not available our program Should not be teaminated abnormally.
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Exception handling closenot mean Depaising an Exception, we have to define alternative way to Continue Diest of the program normally, this is nothing but Exception Handling. Ext. 2F own programing Dequirement is to Dread data from the file locating at Landon & at suntime if that file is not available own program Should not be terminated abnormally. Coe have to provide a local file to Continue Diest of the programs
to define alternative way to Continue Diest of the program normally, this is nothing but exception Handling. Ext.— If our programing requirement is to tread data from the file locating at Landon & at suntime if that file is not available over program should not be tearminated abnormally. We have to provide a local file to Continue Diest of the programs
to define alternative way to Continue Diest of the program normally, this is nothing but Exception Handling. Ext. 2f our programing requirement is to read data from the file locating at Landon & at suntine if that file is not available over program should not be terminated abnormally. We have to prioride a local file to Continue rest of the programs
Ext. 28 our pargeraming requirement is to tread data form the file locating at Landon & at suntime if that file is not available over pargeram should not be terminated abnormally. We have to provide a local file to Continue stest of the programs
Ext. 28 our pargraming requirement is to read data form the file locating at Landon & at suntime of that file is not available our pargram should not be tearminated abnormally. We have to provide a local file to Continue rest of the programs
File locating at Landon & at stuntime if that file is not available our perogram should not be terminated abnormally.
available our pargram should not be terminated abnormally.
available out perogram should not be tearminated abnormally. We have to perovide a local file to Continue test of the programs
we have to posovide a local frie to Continue stest of the possions
Noormally. The is nothing but exception Handling.
· · · · · · · · · · · · · · · · · · ·
Syp: - Tay
9 nead data form London file
∂
Catch (-file Not Found Exception e)
use local file and Continue Diest of the pologonam.
Coomaly
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Runtime Stack mechanism:

- too Every thread Frm will Coneate a RuntimeStack.
- > All the method call performed by the those ad will be Stoone in the Stack.
- > Each Entry in the Stack is Called "Activation Die Coord on Stack Frame.
-) -> After Completing Every method Call JVM deletes The Corasponding
- rEntony from the Stack.
- TVM destroyeds the Stack.
-) Ep!-
- Class Test
- P-S-V-M(String ange [])
-) dostuff();
- 6

.)

- € P.S.V. dostuffc)
- o do moone Stuff();
-) do ilsosie staffe);
- D.S.V.domogiestuff()
- S.o.pln("don't Sleep");
- 0 4
- 0
- O
- 0

destanted by JVM

deflaur exception handling in Java!-	
-) 2f any Exception snaised, the method in cohich it is snaised is	
Desponsible to Coeate Exception object by including the following information	() ()
1. Name of Exception	7
2. discouption of Exception.	.)
3 · location of Exception (Stack trace)	والم
-> After Caealing Exception Object, method handovers That Exception-	•
Object to the JVM.)
TVM checks wheather the method Contains any Exception handling	.))
Code on not.)
→ ZP the method Contains any Exception bandling Code, then it will be	<u>)</u>
Exacuted and confinue siest of the paggaram nonmany.)
-> ZP it doesn't Contain handling code then JUM terminates that	் ்
	.
3 TM 9 1 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1)
Contains any hardling Code per not. AP The Cause method doesn't))
Contain any handling code, then Juna terminates That Callearnethod)
also appropriate so many Consider the Post of the)
→ This perocess will continue until main() & Ef the main(), doesn't)
Contain handling Code John terminates the mains also abnormally	p
7. Temoves (099. expanding solar form stock	0

→ Default Exception handles Just point Exception inflormation to the Console in the following formatt.

```
Name of Exception: Description
                          Location (Stack Tolace)
 ) 15/03/11 %-
    Class Test
    P.S.V.m(Storing []args)
      do Stuffer;
    P.S.V. do Stuffe)
                                  <del>Joi PoxeStal</del>
                                   10 28 to 19
      doMooreStuff();
)
                                   Runtime Stack
    P.S.V. Ofo More Stuffe)
)
)
      S.0.Pin(10/0).
                                                                        descraption
)
Э
        Exaption in Thosead" main : Java. lang. AE: 1 by Zego
\mathbf{C}
Ţ.)
                     at Test. domoneStuff()
```

at Test. dostepp()

af Test main ()

0

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Stack Trace.

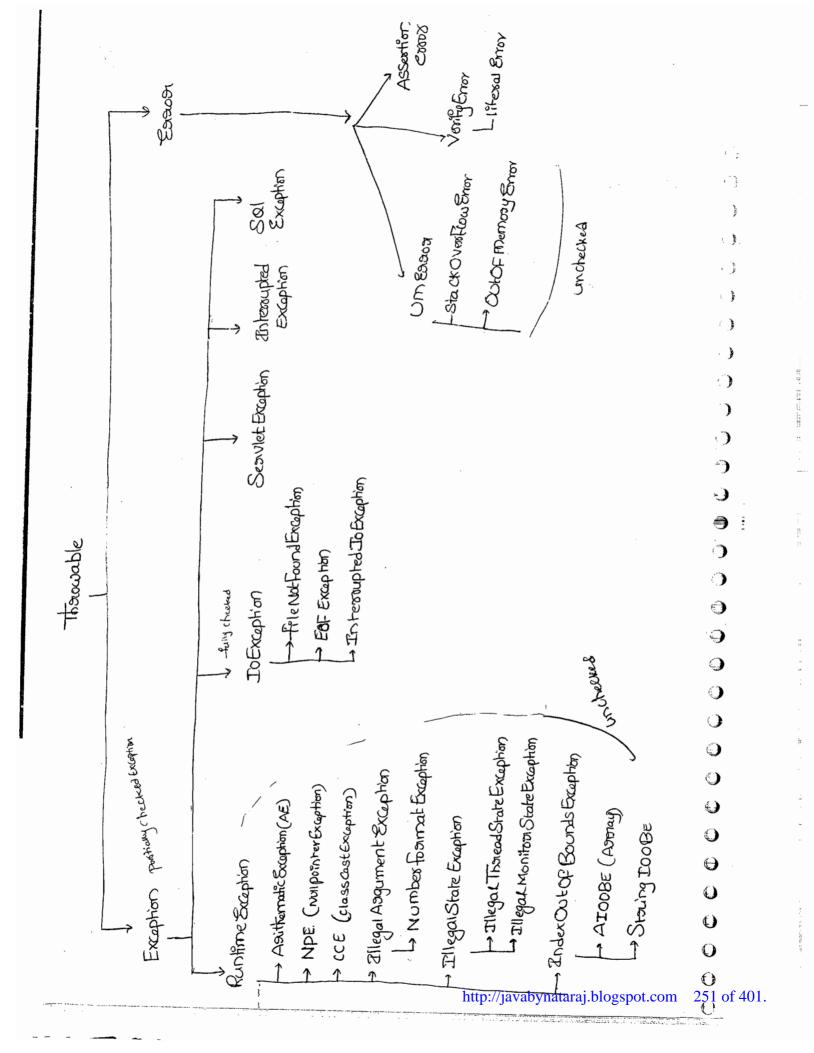
-> Thaowable class acts as a 9root from entire Java Exception hierard	cy:
It has the following a child classes	
_	ř
1 Exception	
Roper - S	· }
1. Exception:	; }
- most of the Cases Exceptions agre Caused by Ough paragram &)
These agre Recoverable.)
)
2. E919109(*	\odot
-> most of the Cases Esistosis agre not Caused by own pologonam	•
these age due to lack of System Gresourics.	.
→ Essos ase NON-Recoverable.	9 :
3	• • •
Checked Vs Un-checked Exceptions?	ć
-> The Exceptions which agre checked by Compile or for smooth Exegu	Մ ագ
,	•
of the paragram at Runtime are caued checked Exception!	.)
Ep!- HaliTicketMissing Exception,	\mathbf{c}
PenNotWorking Exception,	\mathbf{c}
FrieNot-Found Exception.	9
)
-> The Exceptions which agre not checked by Compiler agre Gued	()
"can-checked Exceptions."	O O
En!- BombBlast Exception	0
Authomatic Exception, Fracticident Exception.	t)
Hartic Carefial), Harchede & Carefair), http://javabynataraj.blogspot.com	249 of 401.

-> In Java The only Pashfally Checked Exceptions asie 1. Exception 2. Thorowable.

)

)

Note!



Customized Exception Handling by Tory-Catch:

→ We Can maintain fisky Code with in the Try tolock & Corresponding Handling Code inside Catch block

```
Long
              Risky Code ,
          Catch (xxx e)
            handling code.
     Class Test
     P.S.V.M (String [] angs)
     S.o.pln("State 1"),
     S.o.Pln (10/6); -
     S.o.pln ("State 3");
)
   op) States
    R.E : A.E : 1 by Zerod
      Abnopinal termination
-)
```

()

```
Class Test
   D.S.V.M (Staing (Jargs)
       S.o.pln ("State");
       tory
         S.o.pln (10/0);
        Catch (AE e)
         S.o.ph.(10/2);
       S.o.Pln ("State3"),
            State
            5
            Stark 3
            nooma termination
```

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```
Contenoi flow in Tany-catch :-
```

tary	
	}
Stati;	3
State 2; State 3;	è
i de la companya de l	Þ
Catch(*xxx e)	Ì
J	<i>),</i>
Shate 4;	•
ly .	
States;	
)
Case1:	•
-> 2f There is no Exception 1, 2, 3, 5 Statements age nonmal terminations	-)
	J
Cases:) :
→ RF The Exception sharsed at Statement & Consesponding Catchblock matched	Ce
1,4,5 age nonmal teaminations)
)
Cabe3!	-
→ 2 P an Exception Graised at Statement 2 & The Coasesponding Catchblock	9
not matched, I followed by Abnosimal Termination.)
	.} .5%
Case 4!	Į
-> 2F an Exception shaised at Statement 4 or Statement 5 it ad always A. NT)
Note:	9
)
- with in the Tay block if any where an Exception Grossed then Grest	3 .
of the tony block whom't be Excepted Even though we handled that	0
Exception. Hone, it is sie Commended to take only	O O
RPSKY Code with in the Tay block, & Length of the Tay block should be as less	
1	3 ∂ #40

2.	26	an	Exception	naised	at	any	Stalement	which is	100	Part of	750y	,
~	then	of a	is always	3 Alamoan	mal	term	sination.					

Vasious Methods to pount Exception Information :- 16/02/11

- -> Thoowable class defines The following methods to paint Exception information.
 - (1) Point Stack Track (1):
 - This method pounts Exception information in the following formatt.

Name of Exception: discouption Follow by
Stack toace

(v) toStoring() !.

-> It points Exception information in the following formatt.

Name of Exception: discociption

(3) get Message ()!

)

 \mathcal{L}

- This method pounds only discouption of the Exception.

discouption

```
Ep).
          Class Test
           b.e.n. (Storing [] angs)
          tag
            8.0pm (10/6);
                                                 A.E: 1 by Zero
                                                     at test. main()
          Catch (AE e)
           e. pount Stack Tonace (),
           S.o.p(e); (on) S.o.pln(e.toStocing(1)), -
           S.o.ph(e.getMessage());
                                                 1 by Zero.
 Note1-
                                          uses pointStactiTonace().
 -> default Exception handler internally
 Lory with Multiple Cotch blocks:-
- The way of handling an Exception is varied from Exception to Exception
   hence foor Every Exception it is recommended to take, Seperate
   Catch block.
  En!-
                                    ( but not necommended . )
               Catch Cexception e)
                                                                             \mathbf{O}
                                                                             0
```

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```
Ex(8)!-
           Catch (A.E e)
            Perform these Arthuretic operations,
          Catch Cfile Not Found Exception
            use local file;
          Catch (Npe e)
           Use Anothea Diesocoa
                                            Highly secommanded
         Catch (Exception e)
           default Exception handles;
>> Hence Tay with multiple Catch blocks is possible & highly secommends
 to use.
> If Tany with multiple Coatch blocks poresent then oaded of Catch blocks
  is Very Amportant and it should be from child to parent.
-> 21 cove agre taking from pionent to child then we will get Compiletime
  Esister Saying, Exception xxxxx has already been Gught
        Child to passent is fallows
```

(atch (A.E e) Catch (exception e) Catch (exception e) Catch (A.F e) C.E ?- Exception Java. long. A.E has already been Caught It is never recommended to define Clean-up code with in the block. because there is no gasterty for the Execution of Every Statement.) ્ર -> 2E is never recommended to define Clean-up Code with in the) Catch-block, because it won't be Executeded if there is no Exception. -> We Diequised a place to maintain clean-up code which should be Executed always is aspective of inheather exception staised on not •) Taised & wheather handle on not handle, Such type of place is .) nothing but Finally-block. J) - Hence, The main purpose of finally-block is to maintain Clean-up Code which should be Executed always, U 0

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```
tay
   Ep1.-
                Sisky Code;
            Catch(xxx e)
              handling Code;
           Penalty &
               Clean-up Code;
<u>Eng</u>:_
 Class Test
                               Class Test
                                                                class Test
  P-S v. m (String Clargs)
                                P-S. V.M (String Trangs)
                                                                 P.S. V. M (String [] angel
  tay
                                tory
                                                                 tay
    S.o.pln("tay");
                                 S.0.p10("tay");
                                                                  Sopin("try");
 Catch (AE e)
                                 S.o.pln(10/0);
                                                                  S.o.pln(10/0);
  S.o.pln ("Catch"),
                               Catch (AE c)
                                                                  Gotch (Nonpointer Er e)
 -finally
                               S.o.pln("atch"),
                                                                   S.o.pin ("catch");
   Sopho ("finally"),
                             finally
                                                                 fanally
                               2 opln ("finally"),
 0/p1_
                                                                   S.o.pln('Finally')
        tory
        firally
                                  M. Tay
                                         Catch
                                         Penaily
                                                                        fenally
```

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```
Dietuan vs finally:
```

```
-> Finally block dominates Deturn Statement also. Hence, if There is
   any nefun statement present inside Thy or Catch block first
  Finally will be Executed & Then Dietuan Statement will be Considered.
  Ep1-
         Class Test
          P.S.V.M (Storing [] args)
          tory
           8.0.pln ("tay");
            Soletuan;
          Catch (A.E c)
            S.o.pln (" (atch");
          Frally
            S.o.pln ("Prody");
         0/11-
```

There is only one situation where the foragy-block world be Executed . is, when even Jum shutdown. i.e. when even we are using System. exiting

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```
(***)
En !-
              Class Test
                P.S.V.M (Strong [1 angs)
                 ¿("tay"),
                 System. exit(0);
                Catch (AE e)
                  System. out. pointin ("Gtch");
              finally
                 Sofin ("finally"),
   defference blu final, finally & finalizer:
)
   - 2t is a modifier applicable for classes, methodes & variables.
    -> 2f & Class declared as final then child class creation is not
      Possible.
   -> If a method declared as final, then overraidding of that method
      is not possible.
<del>: )</del>
   - If a variable declared as the Linal, then meassignment is not allowed
      because, i'E is a Constant.
0
\bigcirc
```

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-Finally :-

→ RE is block always associated with tay-catch to maintain Clean-up Code which should be Executed always inorespective of wheather exception Traised on not traised & wheather handleded or not handleded.

Finalizeur:

- It is a meltiod which Should be Executed by Grabage Collectory before destroying any object to perform clean-up activities.

Note1-

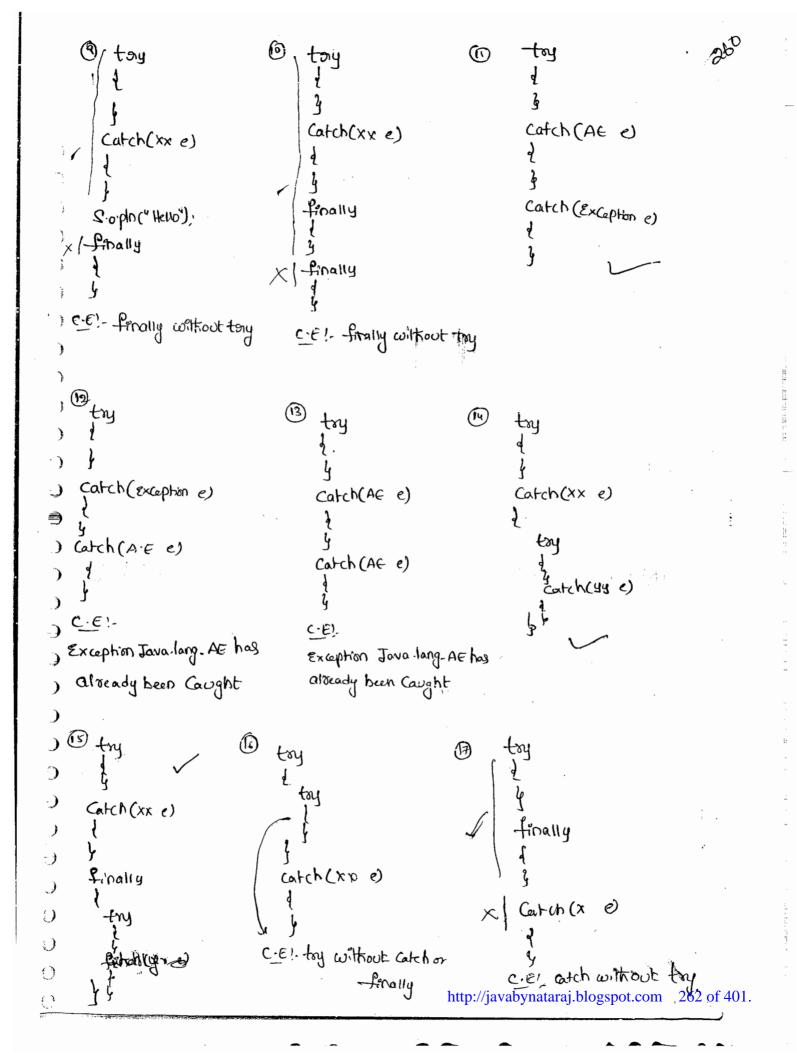
-> When Compose with finalize(), it is highly secommended to use finally block to maintain clean-up code. lotecause, we Carit Expect exact behaviour of the Gasbage Collecton.

Various possible Combinations of toy-Catch-finally =-

					•
O try ~	1 (a) tay	3, 1	(9 try	(3)	ϵ \propto
•	4	try	4	~ Cah	ch(xx e) 🔾
y	Catch (coo e)	I is	4	1 5)
Catch (xx e)	م نه الم	finally	(<u>-</u> E}-	13)
٩)	Catch (44 e)	ą.	Try with ou	t Catch C-6:	· -
J	& pount	3	091	finally Cal	tch with
	, ,	1		out	t · Esy

		•
finally 10 try	an tanu)
4 × / f × /		•
Soplo ("Hello");)
Cifi. Catch(xx e)	Catch(xxe))
ferally without by	1 1)
C.E? Try without Catch or framy	S. opIn(" Heno"); A (Catch (xxc) ce; catch withouts)

http://javabynataraj.blogspotcom C-E:- catch without tony



```
Contaor flow in try-catch-finally :-
        toy
         Stale 1;
          State 2;
          State 3;
       Catch (xx e)
        State 4;
      Finally
        Statement 5;
       Statement 6,
 Case 1:
 -> 2f there is no Exception, then 1, 2,3,5,6, nooman termination.
Case 21
-> 2f an Exception Graised at Statement & & The Congressionsiding Catch-block
  toatched. 1, 4,5,6, noormal teormination.
GSc3 :-
-> 8F an Exception Traised at Statement & & The Cosmonesponding Catch-block
 not matched 1, 5, Abnoomal tearnination.
Case 4!
- If an Exception Draised at Statement 4, Then it is always abnormal
 termination but before that finally block to be Executed.
                                                                           I 2f an Exception norsed at statest or states, 9th 93 always
                                                            abnoornal terminates
```

Contonol flow in Nested tory-catch-finally :-

```
tory
   State 1;
   Stake 9;
   State 3;
        try
          State 4;
           Stake 5;
           State 6;
           Catch(xx e)
           State 7;
          fenally
           State 8;
  Catch (89 e)
  State 10;
  fanally
   State 11;
   State 12;
```

_)

 $\overline{\cdot}$

Case 1:-	
-> 2F There is no Exception, Then 1,2,3,4,5,6,8,9,11,12, noormal termination	η
Case 2:-	· }
→ 2f an Exaption staised at Statement 2 and Coststesponding Catch block	
Matched. Then 1,10,11,12, Noormal termination) }
Cole 3.	\circ
- 8% an Exception Traised at Statement 2 and Coorcesponding Catch block	3
not matched then 1,11, abnormal termination.)
Case A:)
→2f an Exception Traised at Statement 5 & Cooperesponding inner Catch	3
has matched 1,2,3,4,7,8,9,11,12, Noorman termination.	\cdot
Cases :-	ે •
> 2f an Exception praised at Statement is & Coopersporting inner Catch	⇒ :
	\mathbf{c}
has not matched but outer Catch has matched. Then) .
1,2,3,4,8,10,11,12, Noomal)
Case 61	9
→ 2f an Exception shallsed at State to & innex & outer Catch blocks	O
are not matched then 1, 2, 3, 4, 8, 11, Abnormal)
Croe for high ches hour france	ુ •
Case 71-	.)
- 28 an Exception orbised at State 7 & Coonesponding Catch block	Š
matched Then 1,2,3,,8,10,11,12, No9mal	Θ
Case 81	•
-> 8F an Exception maised at Statement 7 & The Commessionaling Outch	()
	0
not matched then 1, 2, 3,, 8, 11, Abnoomal. http://javabynataraj.blogspot.com 26	⊕ 55 _€ 0∮ 401.

THE REPORT OF THE PROPERTY OF

10.1

```
Case 9!
 -> 2f an Exception Grassed at State 8 & Corresponding Catch matched
           1,2,3...,10,11,12, Noomal
  Casero.
→ 2f an Exception Graised at State & Coognaponding Catch has not matched.
          1,2,3 ---, 11, Abnopmay
) Caselli
-> Ef an Exception shallsed at Stake 9 & Coopersponding Catch matched.
    Then 1,2,3,..., 8,10,11,12, Noomal
  CaSe12!-
  - 28 an Exception Graised at Stake 9 & Gooresponding Catch block not
    matched Then 1, 2,3, ..., 8, 11, Abnoomal
  Case 13?
  -> 81 an Exception graised at State 10 Pt is always Abnopman fermination
     but before the finally-block will be executed.
-)
  Case 147.
   -> 2F an Exception Groused at State 11 or State 12 it is always Abnoomal termi.
)
Э
)
-)
Э
1
```

Thorow 8-

-> Some times we can concate Exception Object manually & hand-over that object to the Juna Explicitly by using throw keywood.

therow New Asethernatic Exception ("/ by Zeoro").

Coneation of A.E Object Explicitly

To hand-oved over Coreated

Exception object to the Jum manually.

- -> Hence the main puopose of throw key-world is to hand-over over Coreated Exception object manually to the Jun.
- -> The Result of following two pologorams is Exactly Same.

class Test

d

P.S.V.M(Stowing 17 angs)

Sophn (10/0);

* In this Case A: E object Coreated. intermally & hand-over that object outomatically by the mainer. Class Test

{
 p.s.v.m (Stowing [] args)
 }

thorow New Apullhmetic Exception ("Thy)
 zoro").

and we hand-over it to the Jum on manually by using throw-keyword.

9

```
-> In General, we Can use thosow keywoord foor customized Exceptions
    Case1:
   -> 2f we agre taying to throw null oreference, we will get Mullpointer Exception
       class Test
                                           Cass Test
        Static AEE;
                                            Static A.E e = new (A.E'().
        P.S.V. m (String [] args)
                                            P-S. V. m (Storing I: args)
        throw e;
                                              throw e;
   RE: NPE
                                          R.E: A.E
a Casa!
     After throw Statement we are not allow to write any Statement
     districtly otherwise we will get Complete Compiletime Estatos Saying
     UnDreachable Statement
-)
     class Text
                                       class Test
    (Spro [] privets) on v. 2:4
                                        p·S·v·m (Stoing [] args)
                                        throw New A'E ("/ by Zero"),
    8.0.pln(10/0);
                                         S.o.pln (" Heyor),
    S.o. Pln ("Hello");
                                    C-E: undreachable Statement.
  R.E!- AE / by Zon
```

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```
Case 3 !
 - We can use throw key word Only for throwable type otherwise
   We will get Compiletime Estaton Saying PriCompatiable State types:
    Class Test
                                          Class Test extends Run Eme Goephons
     P-S-V.m (Storing Elorgs)
                                            P.S.v.m (Stolig & angs)
       throw new Testu;
                                              throw New Fest ()
 C.E: En Compatiable Types
                                              P'E:
                                                   Exception in thread
       -found: Test
                                                             Main : Test.
         Required: Towa. larg. Thorwable
                                                                            つ
                                                                            •
  Passes :-
-> En over parguam, if there is any chance of sizesing Checked Exception )
  Commpabsany we should handle it, other wise will get compiletime Esnaon
 Says "unsieposited Expeption xxxxx must be Caught on declare to be
                                                                            •
  . "nowort
                                                                            \bigcirc
     Ey! class test
             P.S.V.M (String 11 arss)
                                                                           0
             thread. Sleep (5000);
```

C-E !- undraported Excaption Java lang. It must be laught

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0

0

```
aby
```

```
- we can handle this by using the following two-ways.
  (1) By Using Tony-catch
(1) By Using Tay-catch:
             Class Test
              P-S-V-m (Strong & Jargs)
                  Thaead. Sleep (5000);
                Catch (I.E e)
@ By using throws keywoord!
- we can use throws keepwood to delegate the presponsibility of
  Exception handling to the Handles Calles method.
       class Test
        P.S. v. m (String 17 args) throws IE
          Thouad. Sleep (5000);
```

```
-> Hence the main puripose of Throws Keywoord is to delegate
    gresponsibility of Exaption handling to the Causes methods in the Case
    of checked Exception, to Convena Compiler.
 -> En The Case of unchecked Exceptions, it is not stequired to use
     throws Kerpwoord.
        Class Test
         P-S-V-m (Storg [] angs) throws IE
         dostruff()
         P.S.V. doStuff () throws IE
          doMoreStuffU?
         P.S. v. doMoreStuffe) throws IE
           thread. Sleep (5000);
-> In the above program, If we are removing any throws keyword
 The Code won't be Compiles. Compulsory we should use 3 throws
                                                                       )
  Statements.
```

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ar by throws Keywoord

Catch or by throws

→ En our program, if there is no chance of raising an Exception Then, It is now we can't define Catch block for that Exception otherwise we win get Compiletime Eason, but this since is applicable , too only fully checked Exceptions.

Ep! tay S.o.pln ("Hello"), S.o.pho("Hello"); Catch (AE e) Catch (Exception e) out Hello Hello

tory S.o.pIn("-Hello"). Catch (Esmon e) off- Hour

Keywoods-for Exaption! tony Catch Penally throw

throws

S.o.pln ("Hello"); S.o.pln(Hero); Catch Cantemopher Exception es Catch (IO Exception e) C.E. : Exception javalong. BOException 35

Never thrown in body of corresponding tory Statement.

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Exception-Handling Keywoods Summasiy:

- 1) toy: to maintain Risky code.
- a) Catch: To maintain Handling Code.
- 3) Finally :- To maintain Clean-up Code
- 4) throw 8- To hand-over Own Concated Exception Object to the Jum Marvally.
- 5) Throws :- To delegate the Responsibility

Various Possible Compiletime Error in Exception Hardling:-

- DO Exception xxxxx has already been Caughut (toy with multiple cutety)
- O Unonepointed Exception XXXX must be Caught or declared to be thrown
- B Exception xxxx & never thrown in body of Cornerponding try state
- (tory without Catch on finally
-) 6 finally without try
- (6) Catch without try
-) (1) Undreachable Statement
- & Encompatable types

found : Test

Stepurred: Java, lang. Throwable.

Customized Exceptions:

```
→ TO meet our programing orequirement Sometimes we have to create
  Own own Exceptions. Such types of Exceptions are Called "Customized Governions",
       Forgoung Exception, Food Exception, Possificient founds Exceptions. etc.
   Class Too, young Exception extends Runtime Graphion
      Tooyoung Exception (Staing s)
        Super(s);
  Class Too Old Exception extends Kuntime Exception
     Toold Exaption (Storing s)
      gobes/(a);
                                                                             .)
  class Test
  p.s.v.m (Stowing ( angs)
   int age = Integer. parse Int (asys [0]);
    98 (age >60)
                                                                             9
   thorow new Tooyoung Exception (" plz weit Some more time") on
                                                                             1
                                          age is abready Crossed Marriage age ).
                                                                             0
                                                                             ()
   else Pf (age <18)
                                                                             \odot
    thorow new tooyoung Exception ( cir age is already expossed marrage
```

```
else
{
Sopin("you will get match details by mail");
}
```

Note:

→ 8t is highly succommended to keep our customeded Exception class as unchecked, i.e. we have to Extend Suntime Exception Glass but not Exception Class while defining our customized Exceptions.

Top-10 Exceptions:-

21-02-11

→ Based on the Sousia, who triggards the Exception, all Exceptions are divided into 2 types.

1. J.V.M Exceptions

2. parogrammatic Exceptions.

1. JVM Exceptions!

The Exceptions which are raised automatically by the JVM when ever a particular Event occurs are Called JVM Exceptions.

En: (1) Assay Ender Out of Bounds Exception.

(ii) MULIPOINFOREXCEPTION

2. programatic Exceptions?

on by the Apir developer, and Called programmatic Exception.

31. Illegar-Assignement Exception, Numberformath Exception.

(1) Assay Indexact of Bounds Exception: → 8E is the child class of Runtime Exception & hence it is unchecked. -> Traised automatically by the JVM, whenever use are trying tacces ADDRAY Element without of bounge order. int [] a = new inf [10]; S-0.010 (a[6]); 0 ~ Soph (a [100]), RE: AIOOBE @ NUll Pointer Exception : --> 8th is the child class of Runhime Exception and hence it is Unchecked. - Itaised automatically by the JVM, when even we are trying to access perform any operation on MiUII. Bo! Strong s = nuil; S.o.p (3. length (3); RE: NPE 3 Stack Over Flow Essos : - DL is the child class of Esmon and hence it is unchecked. - traised automatically by the JVM, when even we are trying to Perform recursive method invocation. Exo- Class Test P. s. v. m (String C) angs) P.S.V.m MIL) f wish & m2(); P.S.V.M M2() http://javabyhataraj.blogspot.com

(4) No Class Deffound Engron :-

- -> St is the child class of Esisos and here it is unchecked
- Draised automatically by the JVM, when ever JVM unable to find required class. Was
 - Ev: Java Sounu (1
 - → 2P Socno. class file is not available then we will get R.E Saying No Class Der Found Eason.
-) 6 Class Cast Exception: -
- , It is the child class of RUNtime Exception and hence it is unchecked.
- > Inised Automatically by JVM when ever we are trying to type Cast

 parent object to the child type.
 - Ep). Storing S = New Storing ("duagar);

 Object 0 = (Object) 8;
 - Storing 8 = (Storing) 0;

R.E !- CCE

- 6 Exception In Institution Englished :-
- J → 8t is the child class of Ennon and hence, it is unchecked
- I maised automatically by the IVM, if any Exaption occurs while
- Performing notalization for Static variables and by Executing Static
- Dlocks.

)

```
Elgh, -
                                        Class Test
  Class Test
                                         Static
   Static Mt 1= 10/0;
                                         Staing s= null;
                                          S-o-PID(s. length (s)
B.E?
 ExceptionInInitialized Esson
                                       R.E. Exuption In 2004 that is ag Estoron
 Caused by Jana long. A = : 1 by Zero.
                                          Caused by Java-lang. NPE
9) Illegal Assorguement Exception:
-> Et is the child class of RE & bence it is unchecked.
-> Rassed Explicitly by the Porogonammen on by Apr developen
  to indicate that a method has been invoked with invalid assignment
           Thosead = new Thread ();
              t. Set porosity (10);
              E. Set Porioorly (100); R.E. TAE
8 Number Formatt Expeption
-> 8h is the child class of R.E & hence it is unchecked.
-> Raised Explicitly by The programmen on by ApI developed
 to indicate that we are toying to Convert Storing to number type
                                                                        ()
   but the Storing is not peroperly formatted
                                                                        \bigcirc
                                                                        \bigcirc
          -Fort 1= Integer-passe Int (10);
        X int i = Integer. posseInt( "Ten'llyp: Mataby Matai, blogspol. tom
```

```
9 Illegal State Exception:
```

- -> Pt is the child class of Runtime Exception and hence, it is unchecked.
- → Raised Expiriting by the perogenament con by the API developen to indicate that a method has been invoked at in appropriate time.

Once Session Express coe Can't Call any method on that object Otherwise we come get Illegar State Exception.

HttpSession Session = oneq. getSession();

S.o.pln (session.getId()); 123u---

Session. invalidate();

Sopin(session.get 8d()); Rie: ISE

En@?.-

.

)

Э

-_)

Thoread t = new Thoread();

E. Start ():

x E. Start (): R.E: Illegal Thomas State Exception.

→ After Starting a thread, we are not allowed to hestart the Same Thosead, Otherwise we will get R.E!- Illegal Thread State Exaption

10) Assertion Eastor	
-> Rt is the child class of Esisiosi & hence it is unchecked.	:
-> Raised Explicitly Either by the perogenammen on by Apr develops	2 7()
to indicate that amount box I assert statement fails.	Acres to the second sec
Epj- Assent (false);	y P
R.E. Assession England.	, of 100 mg
Exception/Rasson Raised by) et s
1. AZOOBE))
Q. NPE)
3. SOFE JUM automatically	3
4. NOClassDeffoundEoloron (JVM Exception)	9 :
5 Class Cost Exception	C
6. Exception In 2noticalizer Enough) •
7. Illegal Aarquement Exception	÷
8-Numberformatte Exception Cither porogrammer on API developer	• • • • • • • • • • • • • • • • • • •
9. Illegal State Encaptor)
(Porogoramatic Exceptions)	•
	• •
Exception peropagations-)
-> The powers of delegating The Resposibility Exception handling from	e G
One method to another method by using throws keyword is Called)
	4 %

Exception powpagation

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