

## Countineous Assessment 2

course code: 615

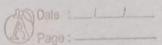
COMPSE Title: Programming in Java

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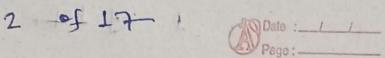
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(1) "At a specific point et time, it becomes ness necessary to terminate a thread before the task has been completed". Justify your answere with the help of an example code. Ans:- A Thread Ps automatically destroyed when the sun w method has completed. But it might be required to kill /stop a thread before it has completed its life cycle. Previously, methods suspendu, resume () and Stop () were used to But these methods were deprecated by Java 2 because they could result in system failures · Modern ways to suspend 1 stop a thread Thread interrupt U method. · Using a boolean flag:-we can define a boolean variable which is used for stopping/killing threads say 'exit'. whenever we want to Stop a thread, the 'exit! variable will be self to // Java program to illustrate



Il stopping a thread wing boolean stog. class MyThread implements Runnable H to Stop the thread private boolean exit; private. String name; MyThread (String threadname) name = threadname; = new Thread (This, name); System. out printly (" New Ahrend: "+ 1); exit = false 2. f. Start(); // Starting the thread. public void - rums (do à prisi) . fint i = 0 while (!xit) System. out. println (name + ":"+i)

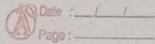
Thread. Sleep (100): Catch (Interrupted Exception e) System. out. println ("Caught:" +e); System. out. println (name + "Stopped."): If for stopping throad. public void stop 1)

11 Main dass

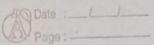
public class main

public static void moun' (String org[])

MyThroad Al = new MyThread ("First thread);
MyThread Al = new MyThread ("Second Head");



Thread · Sleep (500); distop(): \$2. Stop () Thread sleep (500): catch (Interrupted Exception e) System. out. Println ("Cautch:"+e); System. out. possutlin ("Exiting the main Throad"); Output New thread: Thread [First thread, 5, main] New thread: Thread [second thread, 5, main] First threat: 0 second thread : 0 First thread : 1 Second thread: 1 First threat: 2 Second thread: 2



First thread: 5 Second thread Stopped. First thread Stapped. Exiting the main Threat. Note! output may vary every time. SKINSTELL TRACE. TO STATE OF S · Using Thread interrupt () method :where an interrupt has been see to a thread, it Should Stop what task it is performing. It is very likely that whenever the thread receives an interrupt, it is to be terminated. This action can be do by using the introupt () method. // Java program+ illustrate

// Stopping a thread

// using the intrupt () method class MyThread implements Rynnable Thread t; My Thread () t = new Thread (this);

6 1917 Date:\_\_\_\_ System. out. printly ("New thread:"+ +): t. Start (); public void mun () while (! Thread. intersupted()) System. out. posulla ("Thread is running"); System. out. println ("Thread has stopped"); 11 Main class public class Main Q: public Static void main (String argu[]) MyThread #1 = new My Thread 1 Thread . Sleep (1);

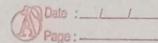
7 ef 17 \$1. f. interrupt (); Thread. sleep (5); coulch (I Herrupted Exception e) U System. out. Mintln (" Calitch!" +e); System and Println ("Exiting the main Thread); New thread ! Thread [Thread-0, 5, main] Thiread is running 3 2 Thread has Stopped. 1 Exiting the main Thread 2

Which are the different ways to implement multithreading and also explain the role of the stort, Tryn and stop methods. Ans: > Multithreading is a java feature that allows concurrent exception of two or more parts of a program for maximum utilization of CPU. Each part of such program is called a thread so, threads ore light-weight processes evithin a process. Therads can be created by (1.) Extending the Thread class. (2.) Implementing the Runnable Interface (1) Thread creation by extending the Thread class we execute a class that extends the java long. Thread class. Tuis class overrides the run () method available in the Thread class.

A thread begins its life inside

Jun () inethod, we create an

object of our new class and call Stort U method to start the execution of a thread . Start () invokes the run () method on the Thread object. Java code for thread creation by 11 extending Thread class. class Mulithreading Demo extends Thread public void run () System. out Printin ("Thread" + Thread . current Thread (). get IdO . + " is running"); catch (Exception e). System. out prouting ("Exception is caught") 2) Tared Caedion by implement 11 Main dals



	Page:
	public class Multithread
	Sin tanks who had not been the trains
	Public static void main (string () args)  int n=8:
	AD Sharkshir the deriver the destroy
	jut n=8.
	for (inti=0; i <n; i++)<="" th=""></n;>
	initially a leader for the salt areal? I
-	1. 129 May 15 Paincelly
	Multithreading Demo object =
,	Multithreading Demo object =  new multithreading Demo ();
-	object stest ();
-	
	Second Flore House
-	1
	3
	output
	Thread 15 is running
	Thread 14 is running
1	ai 1060 abosit v
	11/1/2 11/1/19
	11 11 11 11 11
-	1) 13 ( = n   =   1   1   1   1   1   1   1   1   1
	11 18 11 "
-	17: 17: 17: 14: 14: 15: 15: 15: 15: 15: 15: 15: 15: 15: 15
- Contractor	
-	(2) Thread creation by implementing
-	the Rynnable Interface
-	

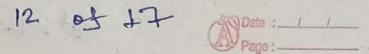
we create a new class which implements java, lang. Runndle

11 et 17 interface and overside run U method. Then we instautiate a Thread object and call start () method on this object. 11 Java code for thread creation by 11 implementing the Runnable Interface class Multithreading Demo implements Runnable public & void rin U System. out. println ("Thread" + Thread. current Thread [ ) getsd() + " is catch (Exception e) System. out. Println ("Exception is

caught"):

-: 10113 or () trots x 11 Main class

class multithread



public static vaid main (string (Jarge) int n = 8; // number of Aboreado

for ( int i = 0; ixn; i++)

Similary 542 - Maillian Salar Thread object = new Thread ( new multithreading Demoll);

Object. Start();

output.

Thread : 13 is running Thread 11 is ounning 12 10 17 15 - Moistant) Katos 18 11 11 16 1, 27

\* Start () method :-

The Stast () method of thread class is used to begin the execution of thread. The result of this

Page:

method is two threads that are running concurrently: the current thread (which returns from the call to the Start method) and the other thread (which executed its run method).

The start () method internally calls
the run() method of Runnable
interface to execute the code
Specified in the run () method in
a separate thread.

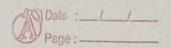
The start thread performs the following tasks:

- · it stout stats a new thread.
- to Runnable state.
  - When the thread gets a change chance to execute, its target run () method will run.

Syntay: public void Start () &
Return value: It does not return any value.

\* run () method :-

The run U method of thread class is called if the thread was constructed using a separate Runnable object otherwise this method does nothing and returns.



When the run U method calls,
the code specified on the run U
method is executed, you can
call the run U method multiple
times.

The run() method can be called using the Start () method or by calling the run() method itself. But when you we run() method rethod for calling itself, it (reates - Problems.

Return: 91 does not return any value.

A Stop () method:

Note whenever we want to stop a

thread from running state by calling

Stop () method of thread

class in Java. This method

Stops the execution of a running

thread and removes it from

the waiting threads pool and

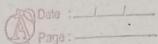
govibage collected. A thread

will also move to the dead

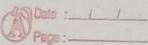
State automatically when it reaches the end of its method.

The Stop () method is deprected in Java duk to thread+safety issus.

Sylax:- Public final void Stop ()



3.) What way you would create a program to generate the threads:- To display Armstrong number upto n numbers. To display the table of a given number. Ans:- // Demo program illustrate a program 11 to generate the threads 11 display Armstrong number Il and display table ef a given number. import java. lang. \*; import java. util. x; class Armstrong extends. Thread public void run () { int n, and, b, sum = 0; Scanner Sc = new Scanner (Systemin): System. out println ("Enter a number for limit of Armstrong: "); int number = sc. next [ ut ()' System, out o privatin (" Futer Amstrong numbers from 1 to " + number + ":") for (int i=1; i<= number; i++) n=i while (h>0)



b = n ./. 10; not very lasting Sum = sum + (6\*6\*6); h = n/10; "H (Sum == 1) System. out posutin(i+" "); estation for the state of a few states Sum = 0; Pripart Lava (ax f. 4 1 & Thu savat Ling . When ther bilder class table extends Thread public void run () estate of rates?" attention Scanner SC = new Scanner (system. in) int n, i; System. out println ! Futer a number for printing table: "); n = SC. next [ut () fox ( 1=1; i<=10; i++) system. ont. println ((n\*i));

7)	
6	17 of 17 Page:
5	2
>	
5	y.
	public class Mythread.
	S million in the first of the second
9	2 public static void main (string ange [])
2	
2	Armstrong to = new Armstrong U;
<b>3</b>	Armstrong #1 = new Armstrong U;  Table #2 = new Table ();
2	ti-start U'
<b>3</b>	t2. Start U;
	)
3	4
3	Output
3	Enter a number for printing table:
5	Enter a number for limit of Armstrong:
	1000
2	2
3	4
2	6
)	8
)	10
2	12
2	14
2	16
	18
	20
2	Azmstrong numbers from 1 to 1000 : 1 153 370 3714

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