	Page flox Date
	Annays and annaylist: An annay is a collection of items of Some data types. Stored at contiguous
	> Syntax:- data type [] variable_name = new datatype [];
	int [] and = new int [10]; Intatype Reprence in trep memory. Variable
1>	arrays objects are stored in java and heap memories are not continous.
17)	In cpp st will be allocated for Continous toback. But in Java 87 is not necessary. Depends on Jun [8 6 4 3 1 3 1 3 2] Continous

1	index stants from 0.
0	Example program for arrays:
	Import java. util. *; public class Annays public static void main (String [] angs)
	Scanner SC = new Scanner (System in); Int[] Traws = new int[10]; Sout (Trans[6]); // will frint 0 by default
	// on directly - int[] nass 2 = {215, 206, 210, 212, 202}; 3
Q≫ A₹°	Total Control of the
	w.A.P. for taking wer input in array.

	Annays. to string: - will brint array in the town of string.
*	import Java. util. Arrays; spublic class corraginated
76	public static void main (String [] args)
	Scanner SC = new Scanner (System in): Ent [] and = new int [10]:
W. dam S	for (i=0; i(= arr.length; i++) arr [i] = SconextInt ();
	Sout (Annays, tostning [ann]);
	3
	berticular index using function. Take the input from user.
	import gava. util. * i import gava. util. Arrays i public class main
	public Hedic void main (String[] angs) i § 8 Scanner SC = new Scanner (Sys.in) i

Ent [] ann = new sut [5];	
den (Int i=0 ; it = avvillingth; itt)	_
foot and [i] = SconextInt () i	_
3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Sout (Annays. tostning (ann));	
Change (ann):	
Sout (arr)i	
public Static void Change ("int [] nums)	
5 parsag state coursely	
1 nums [2] = 10101;	_
3	_
3	_
> Same for string but instead of int ()	
we should we string.	
A CONTRACTOR OF THE PARTY OF TH	
0 = Take an array as input from the user	
The state of the s	
the index on which it occurs.	
import java util * i	
import 3ava util Anrays;	
public class main	
4	
public static void main (String [] args)	
1	

Multi dimensional array: A multi dimensional array is an array of array. It's weful when we want	int[] ann = new Ent [5]; for (int i = 0; i < anniength; i++) for (i=0; i < anniength; i++) if (ann (i) = 5) y Sout ("Element found at index: "+i) 3 Y Multi dimensional annay: Annutri dimensional annay is an annay of annay. It's usful when we want to stone the data in tabular forum. \$\forall \forall 1.2\forall \forall 1.5.7\forall ann [1] \$\forall 1.2\forall ann [1] \$\forall 1.2\forall and ann [0] [1] \$\forall 2.		LDMs
int (I ann = new Ent (S); for (Int i = 0; i < anniength; i++) ann (i) = SC. next Int (); for (i=0; i < anniength; i++) if (ann (i) = 5) Sout ("Element found at index: "+i) 3 Multi dimensional annay: A multi dimensional annay is an annay of annay. It's weful when we want to store the data in tabular form. > (§1,2], §4,5,7} ann (i) > [4,5,7] and ann (o) [1] > 2 This is for elevent suday	int[] ann = new Ent [5]; for (int i = 0; i < anniength; i++) for (i=0; i < anniength; i++) if (ann (i) = 5) y Sout ("Element found at index: "+i) 3 Y Multi dimensional annay: Annutri dimensional annay is an annay of annay. It's usful when we want to stone the data in tabular forum. \$\forall \forall 1.2\forall \forall 1.5.7\forall ann [1] \$\forall 1.2\forall ann [1] \$\forall 1.2\forall and ann [0] [1] \$\forall 2.		
for (Int i = 0; i < anniterists; i++) ann [i] = SC. next Int (); for (i=0; i < ann. length; i++) if (ann (i) = 5) Sout ("Element found at index: "+i) y Multi dimensional array: A multi dimensional array is an array of annay. It's ureful when we want to store the data in tabulary forum. > (1,2), (4,5,7) ann [i] > [4,5,7] and ann [o][1] > 2 and ann [o][1] > 2	ten (Int i = 0; i < ann-length; i++) ann [i] = SC.next Int (); for (i=0; i < ann-length; i++) if (ann (i] = 5) y Sout ("Element found at index: "+i) y Multi dimensional annay: A multi dimensional annay is an annay of annays. It's weful when we want to store the data in tabular perun. > folial, fusity ann [i] > [4,5,7] and ann [o][i] > 2 This is den elevent suday		
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Jen (i=0; i < ann.length; i++) gly (ann ci] = 5) Sout ("Element found at index: "+i) y Multi dimensional annay: A multi dimensional annay is an annay of annay. It's weful when we want to store the data in tabulan poun. > folial, fusity ann co] > [1,2] ann [1] > [4,5,7] and ann co][1] > 2	Jer (i=0; i < ann.length; i++) if (ann (i) = 5) Sout (" Element found at index: "+i) y Multi dimensional array: dimensional array: A multi dimensional array is an array of annays. 4'b weful when we want to store the data in tabular form. \$\forall \forall 1.2\forall arr [i] \$\forall 2.5\forall arr [i] \$\forall 2.5\forall and and [o] [1] \$\forall 2.5\forall and [o] [1] \$\forall 2.5\forall and [o] [1] \$\forall 2.5\forall and [o] [1] \$\forall 2.5\forall 2.5\foral	\$	for lint 1 = 0; 1 anniength; 1+1)
Jon (i=0; i < ann.length; i++) if (ann (i)=5) Sout ("Element found at index: "+i) y Multi dimensional annay: dimensional annay: A multi dimensional annay is an annay of annay. It's which when we want to stone the data in tabulan forum. > of of 1,27, of 4,5,77 ann [i] > [4,5,7] and ann [o] [1] > 2	Jer (i=0; i < ann.length; i++) if (ann (i) = 5) Sout (" Element found at index: "+i) y Multi dimensional array: dimensional array: A multi dimensional array is an array of annays. 4'b weful when we want to store the data in tabular form. \$\forall \forall 1.2\forall arr [i] \$\forall 2.5\forall arr [i] \$\forall 2.5\forall and and [o] [1] \$\forall 2.5\forall and [o] [1] \$\forall 2.5\forall and [o] [1] \$\forall 2.5\forall and [o] [1] \$\forall 2.5\forall 2.5\foral		and [[] = SC-meret Test ()?
Sout (" Element found at index: "+i) 3 4 Multi dimensional array: A multi dimensional array is an array of array. 41 b weful when we want to store the data in tabular form. > folial, fus, 744 arra [0] > [4,5,7] and arra [0] [1] > 2	Sout (" Element found at index: "+1) y Multi dimensional array: A multi dimensional array is an array of array. It's weful when we want to store the data in tabular form. > of (1,27, f4,5,7) and arr [0][1] > [4,5,7] and arr [0][1] > 2		3
Sout (" Element found at index: "+i) 3 4 Multi dimensional array: A multi dimensional array is an array of array. 41 b weful when we want to store the data in tabular form. > folial, fus, 744 arra [0] > [4,5,7] and arra [0] [1] > 2	Sout (" Element found at index: "+1) y Multi dimensional array: A multi dimensional array is an array of array. It's weful when we want to store the data in tabular form. > of (1,27, f4,5,7) and arr [0][1] > [4,5,7] and arr [0][1] > 2		der (i=0; i < arr. length; i++)
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Sout (" Element found at index: "+i) y Multi dimensional array: dimensional array is an array of annay. It's weful when we want to store the data in tabular perun. > of \$1,27, \$4,5,77 ann [1] > [4,5,7] and ann [0][1] > 2	Sout (" Element found at index: "+i) 3 Multi dimensional array: A multi dimensional array is an array of array. It's weful when we want to store the data in tabular Jerun. > of \$1,27, \$4,5,79 and arr [0][1] > [4,5,7] and arr [0][1] > 2		jif (ancij=5)
Multi dimensional array: A multi dimensional array is an array of arrays. It's weful when we want to store the data in tabular perun. \$\frac{1}{2}\left(1.2\frac{1}{2}\left), \left(4.5.7\frac{1}{2}\right)}\$ arra [0] \$\frac{1}{2}\left(1.2\frac{1}{2}\left) arra [1] \$\frac{1}{2}\left(1.2\frac{1}{2}\left) and [1] \$\frac{1}{2}\left(1.2\frac{1}{2}\left(1.2\frac{1}{2}\left) and [1] \$\frac{1}{2}\left(1.2\frac{1}{2	Multi dimensional array: A multi dimensional array is an array of arrays. It's weful when we want to store the data in tabular form. > folial, fus, 7 4 4 arrati > [415, 7] and and [o][1] > 2		
Multi dimensional array: A multi dimensional array is an array of array. It's weful when we want to store the data in tabular form. > of of 1,24, of 4,5,7744 and one [o] [1] > [4,5,7] and one [o] [1] > 2	Multi dimensional array: A multi dimensional array is an array of arrays. It's weful when we want to store the data in tabular form. > folial, fus, 7 4 4 arrati > [415, 7] and and [o][1] > 2		2 Sout (thement found at index: +1)
Multi dimensional array: A multi dimensional array is an array of array. It's useful when we want to store the data in tabular form. > of (1,27), f4,5,774 and arra [1] > [4,5,7]. and arra [0] [1] > 2	Multi dimensional array: A multi dimensional array is an array of array. It's weful when we want to store the data in tabular forum. > of (1,24, of 4,5,744) and and [0][1] > [4,5,7] and and [0][1] > 2		
dimensional annay is as an array of annay. It's weful when we would be to store the data in tabular form. >> of of 1,27, of 4,5,77 y y ann [1] >> [4,5,7] and ann [0][1] > 2	dinentional annay is an array of arrays. It's weful when we want to stone the data in tabular form. \$\frac{1}{2}\left\{1,2\right\}, \left\{4,5,7\right\}\right\}\$ ann [0] \$\frac{1}{2}\left\{1,5,7\right\}\right\}\$ and ann [0] [1] \$2	4	4
dimensional annay is an array of annay. It's weful when we would to store the data in tabular form. 3 of of 1,27, of 4,5,77 y ann [1] > [4,5,7] and ann [0][1] > 2	dinentional annay is an array of arrays. It's weful when we want to stone the data in tabular form. \$\frac{1}{2}\left\{1,2\right\}, \left\{4,5,7\right\}\right\}\$ ann [0] \$\frac{1}{2}\left\{1,5,7\right\}\right\}\$ and ann [0] [1] \$2		
dimensional annay is an array of arrays. It's weful when we want to stone the data in tabular form. > of \$1,23, \$4,5,749 ann [0] > [4,5,7] and ann [0][1] > 2	dinentional annay is an array of arrays. It's weful when we want to stone the data in tabular form. \$\frac{1}{2}\left\{1,2\right\}, \left\{4,5,7\right\}\right\}\$ ann [0] \$\frac{1}{2}\left\{1,5,7\right\}\right\}\$ and ann [0] [1] \$2	Mu	Iti dimensional array:
annays. It's weful when we want to stone the data in tabular term. > of of 1,27, of 4,5,774 ann [1] > [4,5,7] and ann [0] [1] > 2	annays. It's weful when we want to stone the data in tabular terms > folially, fusityly ann [0] > [1,2] ann [1] > [4,5,7] and ann [0] [1] > 2		
to stone the data in tabular form. > folially, fuisizing ann [0] > [1,2] ann [1] > [4,5,7] and ann [0] [1] > 2	Atom the data in tabular to state of the sta		
form. $\Rightarrow \{\{1,2\}\}, \{\{4,5,7\}\}\}$ $ann[O] \Rightarrow [1,2]$ $ann[I] \Rightarrow [4,5,7]$ and $ann[O][I] \Rightarrow 2$ This is den elevat surface	#Prim. \$\frac{1}{2} \qua		may. It's weful when we want
ann [0] > [1,2] ann [1] > [4,5,7] and ann [0] [1] > 2	ann [0] \Rightarrow [1,2] ann [1] \Rightarrow [4,5,7] and ann [0][1] \Rightarrow 2		
ann [0] \Rightarrow [1,2] ann [1] \Rightarrow [4,5,7] and ann [0] [1] \Rightarrow 2	ann [0] \Rightarrow [1,2] ann [1] \Rightarrow [4,5,7] and ann [0] [1] \Rightarrow 2	70	
ann [0] > [1,2] ann [1] > [4,5,7] and ann [0][1] > 2	ann [0] \Rightarrow [1,2] ann [1] \Rightarrow [4,5,7] and ann [0][1] \Rightarrow 2		=> \$ \$1,24, \$4,5,744
ann [0] > [1,2] ann [1] > [4,5,7] and ann [0][1] > 2	ann [0] > [4,5,7] and ann [0] [1] > 2 This is sen elevat surface		
and ann [o][1] > 2	and and CoJ[1] > 2		
I This is don pleasant suctor	I This is don cleant sucley		ans [1] > [4,5,7]
I This is don elevent suctor	I This is don cleant sucley		
For array This is for elevat index.	For array This is for elevat suclex.	au	
Hen coving	Hen covided		This is for elevent index.
			Hen coving

	Unin
	20 annay :-
	on annous one declared
	by deliving a data type followed by
	two jets of square bracket.
	AND THE RESIDENCE OF THE PARTY
	Syntax:
Head	datatype [][] van-name = new datatype (now size) [colo-lize]
	On 50.2 Jan 1 Jan 14
	datatype [][] van-name = ffa14, fa24, fa344
*	we do not need to give the size of coloumns because in 2D array each array
	contains a sub-orray. That's why d
	can be of any length.
	$E_{X} \Rightarrow ann [J[T] = \{C_{1}, 2J, [3, 4, 5], [6, 7, 8, 9]\}$
	2 cd 3cd 4cd.
	O I I I I I I I I I I I I I I I I I I I
	for (i=0; i=0rdength; i++)
	2 ()(3x2) { for (j=0; j<= ann(i),length; j++)
*	I IN fer them also
4	g is for coloumn.
1	First we are storating now so-
	it's starts from O. Then it will go
	in col Joop.
3	So > [0:0] and [0:1]
9	again for 1 > [1,0] and [1,1]
2	and so on.
2	

	Ore
	UNED Supert in 2D array :-
	for (sub 1=0; is consbugth; i++)
	for (sut 3=0; i correctelength; i++)
	g ann EtICII = Schent Int ()?
	3
	Sout (Annays. toString (ann.));
	Y Company of the comp
*	Priograms:
*>	is not smaller than it's neithbour
	import journatil. * i
	foublic class main
The state of	
	public static void main (String [] args)
And have	int [] ann = {10,5,9,6,8,439
	for (Int i = 0; ix ann.length; i++)
-	1/ (con(1) > con(1+1) 24 con(1) > con(1-1)
	Sout (aron CU);
	State of the state
1000	4
	1 2

	Page 1/4 _ 4I
ii)	W.A.P. to swap the values of index
	using function.
7	import java-util. * i
	Import Java util - Armays:
	s public class main
	public Hatic void main (String (I corgs)
	Scanner SC = new Scanner (system-in);
	int CJ ana = new int [10];
	for (int i = 0 i ix annelength i i++)
	g ann cis = Sc. next Int ();
	sout (Arrays to String (arr))i
	Swap (an, 6; 9);
	Sout (Annays. to string (arr))i
	9
	Static void swap ("int[] and, int II, int I2)
	int temp = autindex 1];
	arr [index1] = arr [index2];
	our [index 2] = temp;
	4
	4
(11)	Find the Max and him element of an
	annay:-
	$\rightarrow \rightarrow$

W BI	Sa(0
*	import java util x i public class main i public Athric wid main (String [] angs) int [] ann = [10, 5, 16, 12, 33; int max = an [0]; int min = an [0];
	for (int i=0; ikannolength; i++) if (ann[i]>max)
	max = arm [i];
	if (confil min)
	min = antiji
	Sout (min);
	3

-44-	Annay list:
	modified but we can modify arraylist whenever we want we can take as many input as we want.
	* Syntax :-
	Annaylist (Integer > list = new Annaylist <> ();
	Example program:
	impont java. util. * i public class Main
	public static void main (String [] angs)
	Annaylist (Integer) list = new Annaylist <> (10);
121	list add (60);
	Sout (List);
	3

	Page Per.
>	Scanner SC = new Scanner (System in);
	Annaylist < Integer > list = men Annaylist <> (10); for (int i=0) i<10; i++)
	y ton that be of the
	1At-add (Sc. nent Int ());
	Sout (List);
	3 - 18 2 millioning
*	In amaylist we can take as many inputs
	as we want but the logic helind this is - In the above program we have
	taken to at finitial capacity AD when
	the size of the array means 10
	be converted in 20. then 40 and
	Multidimentional Annaylist:
	Annaylist of
	annaylist is known as multiclinewional
*	Example Program :-
	\rightarrow \rightarrow
Marie Town	

	import java util * i
	public class main
4	Vacco Co.
	public static usid male (String (I args)
	Scanner SC = new Scanner (System = in);
A	and the source that of Thetoproper I like a more Atmosphilist <7 (10)
1	I define has many annaylist
	define has many annaylist for (int i= 0; i<3; i++)
	P
	1 list add (new Annaylisto());
	for ("int "=0; i(3; i++) //adding elements
	fon (int j=0; j(3; j++)
	lut.get (i) - add (sc. neset Int ())i
	Sout (List);
	Sout (List) i
	1
	V
E	