SELECTION SORT

1) Theory: 86 # 21-138 08 12210900913 - let us assume the elements that needs to be Sorted are 20 35 1-15 7 55 0101+22) Last Unsorted Index is a variable used to track till Where the array has been sorted I is a traversal variable from left to right of largest is a variable that will consist of largest element, which is initially assumed to be at Atithis point, betrozouted the isoprak gowe the last Unsorted Index = 6, i= 0, largest = 90 Now, 35>-15, largest = 35, i=1; i+t 0 of 1000 35 > 7 , largest = 35 , = 1=31, 1++ Now, 35 K 55 , largest = 55 , 1=4; itt Now, 55 > 1 largest = 55 l=5; i++
Now, 55 > -99, largest = 55 i=6; i++ I has reached HILLEN OBE HEADING Last Unsorted Index HT 6=1 : 06 = 139 pt with largest and .. Swap Lost Unsorted Index Last Unsorted Index -- 1 66 COB WOW Now, list is as follows 20 35 - 15 7 - 29 1 55 Lost Unsorted Index = 5, i is reinitialized to o largest is reassigned to element in 11=0; Largest = 2010+ 20 21 fell work

Elements: 20 35 -15 7 -22 1 55 (1 Now, 20<35; largest = 35, 1210; 1++0 Now, 350-15; largest = 35, 1=2; 1+ NOW, 354>7; largest = 35, 1= 3; itt Now, 350>-28; largest = 35, 124; itt Now, 35 > 10) dargest -35 , 125 ; itt terapest is a variable that will consist a of bornueso pulotion of Norwihas reached to Last Unsorted Indon : Swap largest with last Unsorted Index and last unsorted Index - - 2 = mobile themen Now, list is as follows 20 12-15 7-22 35 55 last Unsorted Index = 4, 1 is reinitialized to 0, largest is reassigned to the element at index o i=0; largest = 20 Elements: 30 1-15 7 - 22 35 55 Now, 20>1; Jargest = 20; 1=1; itt Now, 30 > -15; largest = 30; i=3; i+1Now, 30 > 7; largest = 30; i=3; i+7. Now, 30 > -32; largest = 30; i=4; i+1now list the de follows of 35 i has reached to or besubitings si i e room last Unsorted Inden and Last Unsorted Index -NOW, List is as follows -29 1 - 15 7 90

DELECTION SORT

7	Last Unsorted andex = 3, i is reinitialized to 0,
	Invocat is reinitialized to the element at index o
	: largest = 0 - 22 10 -15 7 20 35 55 Trements: -22 10 -15 7 20 35 55 Ormo 0 39 09 20 3 4 5 16
-	Tiements: - 22 10 -15 7 20 35 53
	OYANO O BONDON 2006/3 14 105/16
	Now, - 22 < 1 ,0 dargest = 10, i=0; i+++
	Now, 1>-15, largest = 1, 1=2; itt
1	NOW, 1 27, largest = 7, 1=39) it t
	NOW, 1 27, largest = 70,1=39) HT at t
ma	fill troz of 29th ool givenas reached to
41)	angti out troe of last unsorted Index
	Swoo largest with a last Unsorted Index and
	locations or ted Index) last unsorted in acres
	Now, list is as follows -23 11-15 7 30 35 53
	0 1 2 3 4 5
	Now, - 22 Eliphargest = 1 points it sont
	Now, 1>-15, largest =1, 1272; it bomi
	410CUG140203C 5900
	i has reached to
	Goro []printe nion biol last Unsorted Indea
	Swap largest with Last Unsor reathdeat and
	1 acilla carla Madon - Thomas of acilla sila
94	NOW, list is 05 follows - 220 - 15 17 7 30 35 53
	These these comments
	1 colling over Tindex 3
	Variable 15 Valles (Wed TU West City)
11 -111	inden Dit vatad " altaling to 0 marered
6	largest = - 89, ni= On al = a tal
	System but printly ("Enter Genems");

	Elements: -92 -15 1 7 80 35 55 0 1 8 3 4 5 6
	a manala art of the la
	Now, I has reached to on the
	condition is as follows if
	last Unsorted Index reaches of Control
	breaks out of the loop. > 68- work
	tti (6=1, 1 = tseprol (21- < 1) (4001)
	In place algorithm political
	Time complexity (O(n2) & Buadradic
)	It will take 100 steps to sort 10 items,
4	10,000 steps to sort 100 items
>5	Does not require as much swapping as
9	bubble Losontivitari i Maput bancantieri
)	unstable Algorithm 20010) as a fall wou
-	TIEL & 10 0
	Implementation of Selection Sort wou
	import java util Scanner; of 21- 21 wou
	Class SelectionSort
-	i has reached
21	Public static void main(String[] args)
0	Snow fordest may fost near 169 tudes
	11 Conection of data- Mabrillo troe action
1	1x to collection the data as an input from the
7	user, remove these comments
0	subject to interest = rewalinterestiminalization
1	Scanner in = new scanner (System in)
	System. Out println("Enter the size of gray:");
	int n=in.nextInt();
	System out print In ("Enter Elements");

```
forlint i=0; i<n; i++)+9x ? (==1)+1

& company = gment + m

array[i] = in next Int(): = company

3

gment = company
 A/
1/ Hard - code tooksond sood 1/5
int array[] = 220, 35, -15, 7, 55, -1, -223;

Il For Selection Sort logic refer to notes

for lint last Unsorted Index = array. Length -1; last Unsorted Index >0;
 last Unsorted Index - -) &
 for lint i=1; iK= last unsorted Index; itt)
    if (array[i] > array[larges+])
     largest = i;
    swap (array, largest, last Unsorted Inden)
 1/ Printing elements Using for-each loop
for lint element: array)
   System. out. println (element);
  Public Static Void Swap (int[] array, int i, int)
```

if(i = = j) { return; } (>) () = i + (i)) int temp = array(i); array(i) = array(i) array(i) = temp; 3 115wap 311 class selectionsort 9000-by 11 For Sciention Sort Logic for lint last Unsorted Index = array, length -1; last unsorted Index >0 (05+Unsorted Index - -) & orray[i] > orray[larges+]) Swap (array lorgest, costunsorted Index) 1/ Printing elements Using for-each loop for (int's Element; array) this i this word [) this gowe biox siture silder