



		Page 224
	0.3	2/3/1/4/5 2 comparésons.
	(2) 5	1 - 1 - 1
	<u> </u>	11131415]
	(4) fourth L	ayest at les pos.
	() 2	
		1213 1415
	() ,	
	Opcernations	Array is sorted-
	08760 A WW 01)?	<u>→</u>
1	1 N=5 2 1	3 2-463 43 -
177	Eterations	Comparisons. Genarière
	I .	4 L-) (n-1) Comp.
	II.	2 → (n-2) comp.
	Liī.	2
	lv.	$1. \qquad (n-1) \to 1 \text{ comp.}$
	Sn= 1+2	+3+ + (n-2) + (n-1)
	Sn	$= n(n-1) = n^{2}-n$
		2 2
	0 (n) = 0 (n2 - h)
		$r = 0$ $\left(\frac{n^2}{2} - \frac{h}{2}\right)$
	T,	$c = O(n^2)$
		0.01)
	. 2	c 2 0(1)

	L. Complete		Paga	74 C)
7.5	D'enner	oop (n-1)	times.	
<u>Ca</u>	de- 209	-19 40 3201	- Course to-	(A
- ,	Vold D	subblesort (reel		
24.8.5 N.MO	5 T	7/4/2/		
		+ N= Nons: Siz		
		(int i=0; ix	r-1; i++)	
- Road	x00 32 1 1 1 1 1 2 3 4			at the
		for (Ent j=0; jo	(m-(1-11-30 j++2)	<u> </u>
		<u> </u>	·	
		it (nums	[j] > nums [j	+1])
4.00	יין איבטען.	<u> </u>	el el	
		many admin) swa	4 (nows Eil u	inwi [i+
	7	-		
	(1-1) (-1	3 -		
	(1-1) (-1)	3 -0		
		3 -0	11.	
	S-47 7-3	, , , , , , , , , , , , , , , , , , ,		
- quego	3-47 /- } } ! (()-31		. 311	
- quego	3-47 /- } } ! (()-31		115.	
- quego	3-17 (- } }		. 311	
- quego	2 - + 1 - 5 +		115. 1V.	
- quego	3-47 /- } } ! (()-31		115. 1V.	
- quego	2 - 4 7 (S - 14) + - 14) + (S - 14) +		115. 1V.	

-	
	To selection cort.
(and the man of the fourth of the form
	what it, I select the minimum element
	and put it @ Rigar- position.
7	(mind a court out of the property of the prop
	/p Amay: 44/83 55 22 11.
	2 (819) 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	() 44/33/55/22/11 -> Smallest element
	in order or 1 1 11.
	21/33/55/22/44.
	Marie Carlotte Control of the Contro
	(2) 11 33 55 22 44] -> smallest element
	4 22.
1	- (
ı	
	3) 11/22/55/33/44/- smallet element
	L 33.
	11/22/33/55/44.
	4) 11/22/33/55/44 - smallest eliment
	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	11/22/33/44/55
	C) Array is corted.
	obs: for 2th Steration, Pick smallest
	element from 2 to (n-1) Endex.
1	
1	swap it with in element.
	Swap it were si
_	
	Mark the second of the second

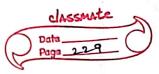
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0	Date_ Page	221	3
6	ruge_		7

	Page 221
	O Quet loop : (→ (0 → <n-1) [0,="" le="" n-1)<="" th="" {=""></n-1)>
	@ quier leap ;] - (0 -× n) { je [0, n-1)
	The state of the s
of more	node la
	roed selectionsort (vector (int) & nums) &
	Entiniz numsisfize();
	for (înt 6:0; ikn-1; i++) {
d-lan.	al 400 to 00 00 00 10 10 00 10 00 10 00 00 00 00
	- Ent reinIndex = i; // to store min val
-4.	for(log- s=i+1; 15 <n; &<="" 1++)="" th=""></n;>
	rif (nums [j'] Knums [min Index])
-1 - 3	mid Poicex = j;
	3.
	swop (nums [i] nums [mid Dodex]);
	7
+ 1554	
*	£ 13,
	Nul 32 [22] 22] 22
	the state of the s
1300);	Prime Complristy: = 0(n2)
1.	space composity: - O(1)
	22 144 88 155 56
100	x n x 2 1
	न न महार है। तार्वेशक कार्य अरह कर्ने देशक में
	Merren from 2 to (n-1) Elder.
•	- the war with the court of the decore

	classnate	N
0	Page 227	\bigcirc
8		

	I Inseztion sort.
	just Engert clement at their night parition
	and move our dements.
	(1-M)
	i/p :- 514131211.
	Company Company
	(T) = + 1 4 1 3 1 2 1 1 Key = 4
	7011234.
	ignore.
	has been some souly
	415131211
	(2) insert
	214/50/3/2/14/2000 10 Rey = 3
	a con mover.
	(3) 2 1 4 1 5 1 1 1 Rey = 2
	V 3 [9] 5 [9]
	(come (the side) on the same
	70121
	2/3: /4:15:11 Dey = 1.
	off 8- 1/213/4/50 1000
	To outer loop $\rightarrow 1 \rightarrow n-1$? $i \in \{t\}$ or $[1, n)$.
	(2) Pinney loop "
	J= (-+.
	while (j° <= 0 ff num; [j] > ley) &
	nums[j+1] = nums[j]
	j ;
Allen	mm [j+1] = 10mg
	The state of the s

	Classmate Date Page 128
T- 1:1 -1 M25	5 75 15 150
25. \(\frac{\epsilon}{2} = \frac{2}{\epsilon} \)	
mid IM E-3: F-Day de dumant a destinat	17,5
Tr. 8 -4 Hardening about a soon bear	0
(n-1)	
110101019	- N
1(n-1) n2	
11 5 7 5 1 12 1 22 2	
2 3 4	
Time composity - 0000	
Time composity -, 0 (n2)	
11 21 21 1 1	
Code	
(1930)	
Told Encertion Sort (rector sintst	\$ (2mun
Ent n 2 nums : size (1)	
for (int i21; i(n); i++)	S
ine rey = nums [i];	(E)
me j = 2-1 ;	
while (j>=0 ft nums [j]	1 (cey)
£ 1000 1000 1000 1000 1000 1000 1000 10	
2 muns [] +17 = hums	TJ.
J-20	
}	
rums [j+i] = (cey;	
7	3
(1) 1/2 - 2) 3 3 1 1-10 F 7 F 400)	rows fil
: 1 42 1	1
1-3-1	77.007
Service (j <= 0 + + nor 1 () > 1 end &	
Ed Indon = [1+1] Indon	



	A .
	D Custom comparator.
	C++ -> C+L.
	b sort () (booltin functions)
	est only only only only only only on the first of the first only only only only only only only only
	in vector - sort (v. begins, v. ends)
71	ir array - sort (a, a+n)
	base address.
	base address.
	2400 271127
	o- Too C++ a custom comparator refers to a vier defend function object- user for companino element in data Character 1840 1600100 Cets maps f
	to a user deffred function object
	user for companino element in data
	structures like vector, sets maps & jard
	Prisority queues
	1.1121
	These data structures often require a
	way to compare elimente to maintain
	tuis ordes or un'quevels.
	In consider one in decreasing mades coins
	-> By acfault these data structures
	use the less - than ('<') operator
26,00	for comparison and additional and and
	powerer en some Cases, you might want
	to soot or order elements based on
	costessa offus than the default- wer than
	•
	comparison.
	This is where cutom comparators come
	En handy.
	Lie honey.
47-	

The state of the s	Classmate Date Page 210
	the way with the
	# iso clude Lios treams
	# foclude (vertor)
	# include (vertor) Header file for thing) - Header file for thing.
	Using nomespace (id; twithin tunehiers.
	11/10
	bool des cending order Cint a, int b) {
V	deturn a > b;
it	elfor reserver motion of the miles
has	103/40 05/40002 booling range 1 000
always	Eur main. C. Em main and and many
poel	and the second self to the second of the sec
retur	vector <10+> numbers = 55,2,9,1,73
type.	and have a second and and and a second a second and a second a second and a second a second and a second and a second and a second and
	// Mormal sortino in Acconding prodes
(Fo.	Sort numbers begins, numbers end ()
	102 March Clark Ander Donal
	11 COSTING DOIS IS AUGUSTO OFFICE S
, 2 23	11 coxting nois in descending order Dring
	Sort (numbers. beginc), numbers. endis, descendingorder):
	in a discorted in makers of Joseph 1
الكويداء	11 output- sorted numbers
	for (Ent num: numbers) &
ارد مدد	cont K now (< " " " bos = 2000
) - 	2
و درده	might 0;0 met mo mine 25 sing
	1
	}