

# DATA STRUCTURE

#### LAB FILE

Department of Computer Science & Engineering

Shri Shankaracharya Institute of Professional Management & Technology, Raipur



#### CERTIFICATE

### This is to certify that Mr/Ms ABDUS SAMI KHAN

has satisfactorily completed the required number of programs in Data Stucture Lab as per the University syllabus of B.E. III Semester for the academic session 2020.

Signature of Faculty

Date:

Department of Computer Science & Engineering

Shri Shankaracharya Institute of Professional Management & Technology, Raipur



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4	Write a program to perform binary search on linear array.			
5	Write a program to perform sequential search on linear array.			
6	Write a program to perform insertion sort on input array.			
7	Write a program to perform bubble sort on input array.			

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8	Write a program to perform selection sort on input array.		
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11	Write a program to convert infix to postfix expression.		
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Subject: Date: 非非非非非非非非非非非非非非非非非非非非非非非非非非非 -3:4 4% Aim:program insertion on array -3%levi te -3% -3% # include y is by com y loode: --3% namespace -3%--3%int main ( -3% -3%--11 11 91/20 ) pos = -3%went xx James -3%cin >> n -3% coul << "Reyes ouray is -3% order: In -33 兴 tor (i=0: icn; ++i) \* cin >> a [i]: **%** \* Enter element to insert. = cin \* 1=0. = x < Ou [i+1 DOS = 1+1 breek. ntl: (7pos a [i] ali-1 91/POS.7 = of a inserting: (3 (i= 0; it ntl , ctt cont er alijec y efann 0. anand \*\*\*\*\*\*\*\*\*\*\*\*\* Cutput:

Later size of anay: 5

Enter anay in order:

1 3 4 6 9

Array after inserting:

Subject: 5% +36 4% +)(+ 4% +3% -7% 4% program 10 serform Aim: -4% +33+ deletien phone -2% +36 Code Include < iost ream -3% -3% i nelude < process. br -3% 3% -3% -3% namespare ctol -3% 3% -3% -3:4 int main ( -3% -3%--3%--3% 6 50) int (3-D -3% 3% element -3%-3% -3% -3%ain you 3% -3% array Enter elements cont-cc -3% -11: 336 -3%bur ++1") c=0. = 8 < 1; 3% -11: 33 alij -3%-33 -3%top coul < ¿ alelete: lenter elemets 1 -3%ein >> \* -3%-10 =0. 3 icn; ++i -3%-\* (ali = K) -3% \* -11: ali Ji 四十二十 cout con referment 13 not in ana 1 4% ex else (0): -3% n New Arran 01 -3%ici ; ift 0 . -3%--11: Ci JC wutech -11 seturn o -3% anand -3%-\*\*\*\*\*\*\*\*\*\*\*\*\*

enter elements of array

lenter elements of array

14 8 3 6 9

Renter element to duleti: 6

New array is 14 8 3 9

ole for Bear

144 (0)

4 5500

i paralación so

	2
1 0	
41°	
^	of anay.
w	de: - Finelade - iostream
	#include < orlgori mm >
	using namespace ofd;
U	oid print (intain [7, int n)
4	for (int i = 0; icn; it+)
	cont < ansi] << ""; }
	4
	void reverse (int our [] int n)
	f reverse (an, an +n);
	1 3
	int main ()
	[ int aur [] = {1,2,3,4,5-?
	1 1,2,3,7, 1 1
	int n = size of (arr)/size of (arr(0)).
No.	int n = size of (arr)/size of (arr(0));
	reverse ( au e n ):
	print (arr, n);
	return 0:
	3

5 4 3 2 1 would recovered one efect; conf. ce sal 1500 void never firt on [] in a inter a - of he con / six de contalle.

4	- Mary Mary
in: - Write a program to p	verfam Binary
Search en linear a	way.
vde: - # include ciodream 7	0
- using namespace std	,
int maine ()	420
contict arter 10 elements:	t, last, middle;
tor (i=0; i<10; i++)	1
in >> oru (i):	
counter in lenter element	: 1 · C
ern >> num;	01
first = 0;	eld retail
iant = 9:	the rumber
mi elelle = (6 nt + lant)/	2 ',
while (first (= last)	
f it Carr [middle ] em	um)
First = middle +1;	
else if Cour I'm dolla 7==nu	m )
fuent de "In number," es nu	m < < 'p 00 "< 5 mid
break; ?	
else	
last - mi delle	-(;
middle = (first + last)/	2; 3
if ( 6 281- 7 (ast)	
contac "number,	<< num is not fo
conf- << endl;	Com so not for return 0; 通nand 終終終終終終
2,	Dagad

enter 10 elements: 1

3

4

5

6

7

8

9

10

Enter lelement to be search: 8

The number, 8 pound at position 8.

minter 22 1 State of

2312 Jo 1000 -

Charles Al

	5	- A. A.
		- 4
fimi - W	rite a programe to perform seguential	
sear	ils on livear array.	- 4
Corle: -	# include - stdio-hs	_ +
	# induse ( como. 4)	_ +
mai	n ()	+
(	int ans) . [12,23,78,98,67,56,45,19,65	97
-	Key, i, Klag > 0.	Y.
de	ru():	_ +
ni	intto ("In enter a number: ");	-
0 0	anf ("% d", & tey);	-
3	1500 (i=0; 12 10; i++)	-
2	+ ( Key = = an[/])	-
1	10 (10)	- •
	5104 = 1:	- :
)		
- );	(Mas==1)	
	into (" In Number 1. d exist in array",	- 7
P	into (" In Number 1. d exist in array,	Tey!
,	At Market and the state of the	_ 7).
1 Du	to C'rimber'd Does not exist in an	lay.
	Rey);	_
	getch ();	
1		
)		
	get ch ();  @nand  : ※※※※※※※※※※※※※※※※※※	T
		-

enter a number: 67
The Number 67 exists in the array

Subject: Date: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* -3% -3% -3% -Ain: - Weile nerform insertion -3%rwgram 0 -3%--3% sort on input anan -3%--Code: - # include & i ospreson -3% -3%-Med varmosp are -3% -3% -3% print array (ing array () -3% -11 for /int i=0; i size -3% itt -11%--3%contec ouragei -16 -3% cout < ende -11/4--3% -11%--11 Veid inscition sort inf array [ -11/entsize -3% -11-500 ( \$ 36 ) step ++ -3%step -11% -3%int [step] Key array -11%--3%int step -11/-->:while corray Key -3%--3% -33: array array -3%-3% -3%-兴 array +1 -3%-Ken 兴 ->:-1 -3% int main ( 1 -3% \* int data 3 -3%data Size = 81 78 a datatoj · 六 sort insertion aleya -3%cour- <5 s over -3%-Ordor: qua \*\* dorta arrar 5 3C ※ 彩 彩 -3%-彩 彩 (a) nand 

Sorted away in ascending order:

1 8 4 5 9

Date: Subject: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* -33--1/4-She she she she -3% -3% program to resporm selection Aim: - Write a -3% sort on igut array -3% Code: - # include xicostream -3% using namespace sta; -113--3% -11int main () --11%intiin, temp, min, -33 LUZ 9 (30) -1% con-con Enter no. of elements -33 1:11 - 10940 -3%--3% - - --3% coutes "In enter elements in -11--3% -17 1 = 0 . Ron itn; it+ -11 -11-Caln 77 9 [; -3% -11on ("=0; i(n-1: i++ -11 - --3% -3%min = ali -11%wc = i: -11--11 -11 -11--17 -11: -11min = ali -11 -11: temp = ali7 -11--11 -11 ) = a [wz], a [wz] = temp -11%-LOW 5 " In Sorted list as follows -11 ->:--11 -11 ton (i=0; isn; i++) -33--3% confec a [+ ]cs -33--3%--33return -11--3% -3%--11 -3%--11/2 -11% -3% -11/--33 \*

Mutput: lenter no. 9 element =: 6 Lenter the elements: Ported list is an follows

Subject: Date: 非非非非非非非非非非非非非非非非非非非非非非非非非非 -5% -3% 4/5 -11 Nout Ain: - while implement-4% mog am 4% eperation -3% push 8 pap nerferm 4% -11 Cocle: # include < iofreams 4% -17 usina namespare etd: -3% -2% class stack -11--5% -3% rublic: int top; 4% -3% 4% intony stack MAXT -11/2-4% Stack () -11--5% int pape -11--1/5 600 -11 is emply -7% -1%--1% -3%-4000 Stack: sush int -5% item -3% -7% contec stack overston -33--2% return tallye -3% -1% olse -33--3% -11 coupccitemac and -2% -1% pet orn true 2 -5% -11: -3% If act underflue return O -11: 1-13 6001 stack -3% -1%--3% main -1% -3% class It ack stack. -9% -11%-Stack Push's -9% -3% story rush -13--3% -9% storek rush -3% -3% cont M'ack -3% Pop: cc endl -3% -3% & while cont 258fort 彩 21 enall -3% ret un -3% -11: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

alatput:
8 tout Push
3 stant Pop

+	11
	Den: - Write a program to confert infor
	Code: - # include ciosse om >
	1,000
	using namespace std;
	f of-act chan) s;
	s chen ch = asi ];
-	1
	switch (oh)
	2 care
	euse - (:
	cerse + .
	case /
	cese 't' : s. push (ch)
	break;
	couse ): t=s.top();
	5- pop ();
	confict; sneat;
	4 if (is alpha (ch))
	cout cch;
	3 2 int main () (
	ahou as 7 = 1/1/04/4 (0/1)
	Postfix (9);
	return 0;
	)
	9

Dulput:

36 \* cd/+ e-1900

Subject: Date: \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 4% 4% 4% 3% -2% -5% Din: - Write -3% -3% Nevick to resterm a rugiam -3% -3% work on 33 -3% ode: # include & josto com y -3% -3% of d names pave -3% -3% -3% vero -1%--3%int -3% -3% -3% a -17 -1% 5 -3% -3% -3% vos d mint orray -11% -33 -11 -3% -1% ichze; -3% -111an on -3% -33engle -3%--3% 500 -3% -11: -3% ( = Pivol--3%--3% の一彩 array -3% -33--33-- 11 return (it -1% -111 vosid -3% quickant (TOUTH IXT man (out -3% high -3% guick sof ana -11% -3% main () -1% datas ind -3% bolata 812 e of data -3% sol quick data -3% Ordes data -3% -3% anand \*\*\*\*\*\*\*\*\*\*\*\*\*

Output:

1068792

1028796

0126798

Sorted array in arrending order:
01789