

DSA Assignment No.01

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) <u>v</u> 1	Title: Searching & sorting
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1	Aim: To implement searching and sorting
Charles Jak	Aim: To implement searching and sorting on Array as linear data structure
	Problem Statement: consider student database
	of SEIT class. Database contains different
	ffelds of every student like name, Roll No.2
recommendation to	SG-PA.
a);	Design a roll No list of student accordingly
zahot, v ja	Design a roll No list of student accordingly
b)	Amange 11st of students alphabetically using
	insertion Sort
<u>c)</u>	Amange list of students to find out first ten
e an A p see	to from a class use quick sort
<u>d)</u>	gearch students according to SGPA if more
247.32	than one students howing same so-pa then
	print list of all students having same SCPA
e)	
1177	using search without recursion
	the supplied by the state of the supplied of t
	Objective: To study the concepts of Amay
	of structure, know the concepts, algorithms
	and applications of Borting. Understand the
	of structure. know the concepts, algorithms and applications of Borting. Understand the concepts, algorithms and application of Secretion





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	Outcome: understand linear datas	tructure
	goray of structure. Apply differen	+ sorting
	Sorting techniques on amony of.	structurie
	Apply different searching technique	es on amony
	garray of structure. Apply different Sorting techniques on amony of a Apply different searching technique of structure and eo calculate time	complexity
	Theory:	
	Linear Data structure: Those data stru	ecture where
	data îtems are organized sequential	14 Ororgani
	linearly one offer another is called	tinear data
	Structures	
	Stuck	2.7
	Great Data structure:	
	queu	ey
A A Second	Elements can be transversed one at	t a time.
	and only element is reached while	tranversing
	These are easy to implement as co	mputer
	memory is designed in same fashion	
	Data struture	
	Unevar	ton-linear
	Amory	Graph
	Stuck	Trees
	Queue	
	Unked list	
	[이 보다] 이 발생 경기인이 기업적인 생각으로 전하여 있는 사람들은 사람들이 하고 있다면 살아가는 사람들이 되었다면 했다.	



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2	Examples!
	Stacks: A LIFO (Last is first out) data
	structure where element that added at least
	coill be treated as first
	Addition and deletion is allowed at only one
networts a	end le ontob
07.10	plate of the second of the sec
	push item popilem
	Stack
	queues: It is data structure in which adolition
	is allowed is out one end 'ream' and deletion
	is allowed at 'front'.
	It is fifo Data structure: First in first out
***	It is fire bank stray are . First in Fristout
	Front (-1)
	rear (-1)





	Amoy:
	Arrow is collection of items stored at cont-
A refer	layous memory locations and elements can be
l passion for the	accessed randomly using Indice of an army
	They are used to stored similar type of elements
pro	as in data type must be some for all elements
	They can be used to store collection of minitive
	data types such as int, float, double, char
	ete of any particular type
	It can also store derived data types such as
	Structure pointors etc
	1 2 3 4 5
	0 1 2 3 4 4 Amay indices
	Amay length: 5
my fall Ly	First index: 0
· objetlyko	lost index: 4
	Need of Amou: coe can normal variables
jary I.	cohen coe have small of objects, but if
	coe coant to store a large number of instances
	it becomes difficult to manage them with
	normal variables. The idea of an among is to
	represent many instance in one variable. To
	Store multiple-values.
	되다 보장하다 하나 내용 가장 하는데 하는데 하는데 보는데 되었다. 그는데 얼굴하다는데 하는데 하지만 하는데 하장에 하고 하나왔다. 그리는데 하는데



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	Abstract desta types: (ADT)
7	
Harry	It is type whose behaviour is designed by a
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Set of value and set of operations.
kraj I	The proporties of ADT one its data (prosecutation
	"internal state of the each object) and the behavis
	et an ADT are its operations of functions
16	Coperation on each instances
1-11-1	the Way of the part of green well because the many of the control of
	Editor to reinel temporal full punishing hard
10.2 = 6 ± 5	
	the service of the contract life the
	Structure of ADT:
	Name of ADT
	Types represented in collection of data
	type carled of Data object.
	Fuch Data Object has previously been defin
	in an ADT
1.1	functions that operate on Data!
	pre conditions for any function
	post conditions for any function.
	The result for an in the real field the
A STATE OF THE PARTY OF THE PAR	그 아이들은 아이들은 아이들은 아이들이 되었다. 그는 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은





	Application of Amony:
	Amongs are used to implement vectors and lists
	which are important of CFT STL
	Array are also used to implement stack and
	queues
	Trees also use away implementation
**************************************	Matrices which are an important part of
	mathematical Kibrary is implemented using
	amays
	A lia langu list implementation of graphs uses
	vectors which are implemented using array
	vectors which are implemented using array All sorting algorithm use arrange as
	Basic of Seameling and Sorting:
	그래 그 것도 없는데 그리고 그는 그는 그 이 그는 그는 그리고 그는 그를 모르는 것도 없었다. 그 그를 하는 것은 그를 하는데 그를 그를 하는데 그를 그를 하는데 그를 그를 하는데 그를 하는
	Searching - Searching actors to finding an item in an list given contain conditions
	Item in an list given contain conditions
	Types of Searching techniques:
	1) Linear dos search or sequentional search
(2) Binary Search
	3) Fibornacei Search
	Recurssive Binony Search
	Sub- lit Sublis + search
	(E) Expontial Search (P) Jump search
	1 June search
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COOC TO STORY OF A STO	
AND THE PROPERTY OF THE PARTY O	sorting: sorting refers to reamange all the elements in among in either ascending or
	elements in armay in either ascending or
	descending order
	Types of sorting Techniques:
0	
	Ensertion sort
<u> </u>	Bubble sort
4)	quek sort
(B)	Merge sort Heap sort
©	selection sort
(1)	Radin Sort
®	Bucket Sost
	Application of segniliana & sorting:
	Sosting: Commercial computing
	Sosting: Commercial computing prepared helps in efficiently
	Searching
	Mumerical computations
	Operations Research
	Searching: Dictionary Clients
	Indexing clients
	Indexing clients Sparse rectors & modrices
	system symbol teuble
	J
	있다. 보면 보면 보다 보다 보다 하는데 하는데 되었다. 그는데 하는데 보다 되었다면 보다 하는데 보다 보다 되었다. 그리다 보다 하는데 보다 보다 되었다면 보다면 보다 되었다면