SE_Kỳ 3_CSD201

Thuật ngữ trong học phần này (830)

Managing function calls, The stock span problem, Arithmetic expression evaluation.	Which one of the following is an application of Stack Data Structure?
In push operation = False.	Which of the following is true about linked list implementation of stack?
One stack is enough.	To evaluate an expression without any embedded function calls:
iserCeliF	What is written to the screen for the input "FileComp***ress**ion*** ?
3	Suppose the f(n) function is defined on the set of integer numbers as below. What is the value of f(-5)?
Recursion	An algorithm that calls itself directly or indirectly is known as
Queues	Which data structure allows deleting data elements from front and inserting at rear?
Input-restricted deque	Identify the data structure which allows deletions at both ends of the list but insertion at only one end.
(Strings, Lists, Stacks)= False.	Which of the following data structure is non-linear type?
(Strings, Lists, Stacks)= True.	Which of the following data structure is linear type?
Tree	To represent hierarchical relationship between elements, which data structure is suitable?
Extended binary tree	A binary tree whose every node has either zero or two children is called
Dn = log2n + 1	The depth of a complete binary tree is given by
the variable in E will appear as external nodes and operations in internal nodes	When representing any algebraic expression E which uses only binary operations in a 2-tree,
by replacing each ... new external node	A binary tree can easily be converted into q 2-tree
internal nodes on extended tree	When converting binary tree into extended binary tree, all the original nodes in binary tree are
ABDECF	The post order traversal of a binary tree is DEBFC. Find out the pre order traversal
Quick sort	Which of the following sorting algorithm is of divide-and-conquer type?
thread	In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called
Binary search trees	The in order traversal of tree will yield a sorted listing of elements of tree in
Values in a node is greater than every value in children of it	In a Heap tree
endpoints of e & adjacent nodes & neighbors	In a graph if e=[u, v], Then u and v are called
a tree graph & free tree & a tree	A connected graph T without any cycles is called
e begins at u and ends at v & u is processor and v is successor	In a graph if e=(u, v) means
complete	If every node u in G is adjacent to every other node v in G, A graph is said to be
7 10 6 4 2 13 8 5 3	Suppose a singly linked list of integers is given below: (head)7 10 6 4 2 13 8 3(tail)
may use a queue	Multi-programming.
The best case is 0(n). and the worst case is 0(n-2)	Select the most correct statement about the complexity of bubble sort *
True	Object dequeue() {if (isEmpty()) return(null); return(pool.remove(0));}
ToDay	What is written to the screen for the input "HowAre* **YouTo**"Day" ?
7 11 6 4 3 13 9 8 21	Suppose a singly linked list of integers is given below and p is a reference to the node with value 9 in the list (i.e. p.info=9): (head) 7 11 6 4 3 9 8 21 (tail)
True	In a linked list, the tail node is introduced for performance purpose only.
AABBBCAB	Using the Huffman code tree below. What is the result of decoding the string: 1100000001100 ?
fun(-1012);	Which call will result in the most recursive calls?
The best case is 0(n). and the worst case is 0(n-2)	Select the most correct statement about the complexity of insertion sort
Most Correct	A recursive method is a method that invokes itself directly or indirectly. For a recursive method to terminate there must be one or more base cases.
pop	The operation for removing and returning the top element of the stack is traditionally called:
2.1.4. 3. 7. 6. 8	What is the breadth-first traversal of a tree below after deleting the node 5 by merging?
True	In a singly-linked list we can insert a node after a given node with time complexity 0(1)
True	In a singly-linked list there is no efficient way to insert a node before a given node in the middle of the list (the action is considered efficient if it's complexity is 0(1)).
Saving data storage	Specify the reason for data compression (select the best answer):
AA	Suppose you are using the LZW algorithm to encode the message AABCADAB contents of the dictionary at the beginning of encoding are: (1) A (2) B (3) C (4) D What string is denoted by code word (5)7
for relatively permanent collections of data.	Linked lists are best suited
The tree is neither complete nor full.	Consider the binary tree below. Which statement is correct? (full binary tree = proper binary tree = 2-tree)
0(nlog n)	The complexity of heap sort is
7	What is the minimum number of nodes in a full binary tree with height 3? find a tree the height of root is 1. and in a full binary tree every node other than tle leaves has two children).
7	What is the minimum number of nodes in a nearly complete binary tree with heigh 4?
4F403F205F20	Given a raw message 'FFFF0000FFF00FFFFF00' (without single quote). Run the run-length encoding algorithm for that message, what is the output?
singly linked list	Fill in the blank of the statement to form the most correct one: In a every element contains some data and a link to the next element which allows to keep the structure.
...used for storing items or their addresses... i = h(x) in the table.	What is the correct definition of a hash table?
In chaining ... keys or references to keys.	Specify the correct statement about chaining method for handling collision
Auxiliary data structure for algorithms.	Which of the following applications may use a stack?
Both best and worst cases are 0(n^2)	Select the most correct statement about the complexity of selection sort
n==0&& n<35	What values of n are directly handled by the stopping (base) case?
0	6, 4, 7, 3, 5, 2 What is the balance factor of the node 4?(please note that the tree is still AVL)
35, 22, 39, 12, 32, 37, 27, 24,	Consider the AVL tree below. What is the breadth first traversal of the tree after inserting a node with value 24?
fun(-1025)	which call will result in the most recursive calls ?
The tree is full but not complete.	Consider the binary tree below. Which statement is correct?
FIFO	The Order followed by stack data structure is
0	How many stack will be needed for the evaluation of a prefix expression
top1=top2 && top1=top2-1	If the two stacks are implemented on a single array, the overflow occurs at
Keeping track & A parentheses & Syntax analyzer for a compiler.	Which of the following applications may use a stack?
O(n)	Given a search() method in a binary search tree: Node search(int x) { Node p = root; while(p!=null && p.info != x){if(p<p.info) p = p.left; else p=p.right;} return(p);} The complexity of this algorithm is:
30 5 40 10 35 25 20	What is the breadth-first traversal of a tree below after deleting the node 15 by merging?
True	void enqueue(Object x){Node p = new Node(x); p.next = null; if(isEmpty()) head = tail = p; else {tail.next = p; tail = p;}}
oGdorig	What is written to the screen for the input "Go* **odMor**ni**ng**Sir"?
True	In a singly-linked list every element contains some data and a link to the next element, which allows to keep the structure
5 1 7 4 6 8 3	What is the breadth-first traversal of a tree below after deleting the node 2 by copying?
it deletes the node p.	Node f = head; while(f.next !=p) f = f.next; f.next = p.next;

True	void push(Integer x){ Node p = new Node(x); p.next = head; head=p; }
True	In a singly-linked list, there is no efficient way to insert a node before a given node in the middle or at the end of the list, but we can insert a node after a given node or at the beginning of the list with time complexity O(1)
pre-order traverse algorithm	void preOrder(Node p){ if(p = null) { visit(p); preOrder(p.left); preOrder(p.right); } }
base address	The memory address of the first element of an array is called
LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array	The memory address of fifth element of an array can be calculated by the formula
linear arrays	Which of the following data structures are indexed structures?
There must be mechanism to delete and/or insert elements in list	Which of the following is not the required condition for binary search algorithm?
binary search algorithm is not efficient when the data elements are more than 1000.	Which of the following is not a limitation of binary search algorithm?
tables arrays && matrix arrays	Two dimensional arrays are also called
P contains the address of an element in DATA.	A variable P is called pointer if
Arrays	Which of the following data structure can't store the non-homogeneous data elements?
Records	Which of the following data structure store the non-homogeneous data elements?
elementary items & atoms & scalars	Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called
False	pointers store the next data element of a list
sorted binary trees	Binary search algorithm cannot be applied to
overflow	When new data are to be inserted into a data structure, but there is no available space; this situation is usually called
underflow	The situation when in a linked list START=NULL is
grounded header list;circular header list;linked list_nodes=False	Which of the following is two way list?
FIFO lists	Which of the following name does not relate to stacks?
stacks	The term "push" and "pop" is related to the
Deque	A data structure where elements can be added or removed at either end but not in the middle
O(n)	The complexity of linear search algorithm is
O(log n)	The complexity of Binary search algorithm is
O(n2)	The complexity of Bubble sort algorithm is
O(n log n)	The complexity of merge sort algorithm is
Traversal	The operation of processing each element in the list is known as
riSgMdo	What is written to the screen for the input "Go*odMornin**gSir"?
7 4 8 1 6 9 3	What is the result of the breadth first traverse of the binary search tree T, after inserting the following keys into the tree sequentially(suppose T is empty before insertion): 7, 8, 4, 1, 3, 6, 9
7 11 6 4 3 12 8 5 2	Suppose a singly linked list of integers is given below. (head) 7 11 6 4 3 12 8 2 (tail) What does the list look like after the following java code snippet is run?
4	Suppose T is a binary tree with 14 nodes. What is the minimum possible height of T?
simple graph	A graph that has neither self-loops nor parallel edges are called___
B, D, C, B, A, B	ch = top element of the stack S if ch is isolated then remove it from the stack and put it to E else select the first vetex Y (by alphabet order). which is adjacent to ch.push Y to S and remove the edge (ch.Y) from the graph
A, B, C, E, D, A	(1) Put the vertex X to H (2) Check if H is a Hamilton cycle the stop, else go to (3) (3) Consider the last vertex Y in H, if there is/are vertex(es) adjacent to Y, select the first adjacent vertex Z (by alphabet order) and put it to H. if there no adjacent vertex, remove Y from H and denote it as bad selection (so you do not select it in the same way again). Go to (2)
True	void inOrder(Node p){ if(p != null){ inOrder(p.left); visit(p); inOrder(p.right);} }
n>=0 && n<15	void fun(int n){if(n < 0) {System.out.println("-"); fun(-n);} else if(n<15) System.out.println(n); else {fun(n/15); System.out.println(n%15); } }
Adoretfoo	What is writen to the screen for the input "GoodA**fter**Noo*n"?
27	Given a weighted graph below. What is the total edge-weight of the minimum spanning tree of G?
The operating system detects the infinite recursion because of the "repeated state"	void fun(int n){if(n>0) {System.out.print(" "+ n%5); fun(n); } } What will happen if the statement fun(33): is run?
inserts new node with value x at the head of the list	Node q = new Node(x); q.next = head; head = q;
HowAreYouT	What is writen to the screen for the input"H**owAre*YouTo***Day"?
pop() method of a stack of Integers.	Integer pop() { if(isEmpty()) return (null); return((Integer)pool.removeLast()); }
4 2 7 1 3 6 8	What is the breadth-first traversal of a tree below after deleting the node 5 by copying?
12, 13, 14, 15, 17, 19, 16, 18	Consider the list of eight integers (n-8) below: 15, 13, 18, 19, 17, 12, 16, 14 What is the list after it is partitioned with low = 0 and up = n-1?
94	What is value of the Boundary Folding Hash Function if K = 42-58-67 and TSize = 100?
12	int fun(int n) {if(n<0) return(fun(-n)); else if(n<5) return(2); else return(n*fun(n-2)); } What is the value of fun(6)?
01	Given the character frequencies B : 32% C : 28% D : 16% E : 6% F : 18% Using Huffman encoding, what is the code for character C?(Suppose that when constructing a sub tree from 2 nodes we always place node with higher frequency on the left, and the left branch of a node gets value 0, the right one gets value 1)
b, c, e	Consider a graph below. Cut-vertices in the graph are
fun(-1023)	void fun(int n) {if(n < 0) {System.out.println("-"); fun(-n); } else if(n<10) System.out.println(n); else {fun(n/10); System.out.println(n%10); } } Which call will result in the most recursive calls?
27 11 6 4 3 10 19 8 2	Suppose a doubly linked list of integers is given below and p is a reference to the node with value 10 in the list(i.e. p.info=10): (head) 27 11 6 4 3 10 8 2(tail) What does the list look like after the following java code sippet is run?
Undo sequence in a text editor	Which of the following applications may use a stack?
enqueue	The operation for adding an entry to a queue is traditionally called:
cursor = cursor.link;	Suppose cursor refers to a node in a linked list (using the IntNode class with instance variables called data and link). What statement changes cursor so that it refers to the next node?
The listLength() method is O(n) and the alternative is O(1).	In the linked list version of the Bag class an instance variable manyNodes is used to keep track of how long the linked list is. Why not just make a call to the IntNode method listLength()?
add	Suppose that the Bag is implemented with a linked list. Which of these operations are likely to have a constant worst-case time?
(int) (Math.random() * N) + 1;	What is the expression for generating a pseudorandom number in the range 1...N?
Lists implemented with an array.	What kind of list is best to answer questions such as "What is the item at position n?"
obj = s	Suppose that obj is an Object variable and s is a String variable. Which of the following statements is a correctly-compiling widening conversion? Don't worry about possible run-time exceptions.
The statement will compile, but there will be a run-time exception.	Suppose that obj is an Object variable and that it refers to an Integer object. If s is a String variable, then which statement is correct about the assignment "s = (String) obj;"?
Vectors grow automatically as needed.	What is a primary difference between an array and a Vector from Java's Class Libraries:
There is a first entry, a second entry, and so on.	Entries in a stack are "ordered". What is the meaning of this statement?
push	The operation for adding an entry to a stack is traditionally called:
pop	The operation for removing an entry from a stack is traditionally called:
pop	Which of the following stack operations could result in stack underflow?
3	Consider the usual algorithm for determining whether a sequence of parentheses is balanced. What is the maximum number of parentheses that will appear on the stack AT ANY ONE TIME when the algorithm analyzes: (()(()(()))) ?
data[10]	Suppose we have an array implementation of the stack class, with ten items in the stack stored at data[0] through data[9]. The CAPACITY is 42. Where does the push method place the new entry in the array?
. Both push and pop would require linear time.	Consider the implementation of the Stack using a partially-filled array. What goes wrong if we try to store the top of the Stack at location [0] and the bottom of the Stack at the last used position of the array?
At the head	In the linked list implementation of the stack class, where does the push method place the new entry on the linked list?
False=(is_empty,peek,pop,push when the stack is below capacity)	In the array version of the Stack class, which operations require linear time for their worst-case behavior?
False=(is_empty,peek,pop,push)	In the linked-list version of the Stack class, which operations require linear time for their worst-case behavior?
Something between -15 and -100	What is the value of the postfix expression 6 3 2 4 + - *:
Queues use two ends of the structure; stacks use only one.	One difference between a queue and a stack is:
DCBA	If the characters 'D', 'C', 'B', 'A' are placed in a queue (in that order), and then removed one at a time, in what order will they be removed?

SE_Kỳ 3_CSD201

Math.random() < P	Which of the following expressions evaluates to true with approximate probability equal to P? (P is double and 0 <= P <= 1).
data[12]	Suppose we have a circular array implementation of the queue class, with ten items in the queue stored at data[2] through data[11]. The current capacity is 42. Where does the insert method place the new entry in the array?
The getFront method would require linear time.	Consider the implementation of the Queue using a circular array. What goes wrong if we try to keep all the items at the front of a partially-filled array (so that data[0] is always the front).
At the tail	In the linked list implementation of the queue class, where does the insert method place the new entry on the linked list?
False=(getFront, isEmpty, insert when the capacity has not yet been reached)	In the circular array version of the Queue class, which operations require linear time for their worst-case behavior?
False=(getFront, isEmpty, insert)	In the linked-list version of the Queue class, which operations require linear time for their worst-case behavior?
(rear + 1) % CAPACITY	If data is a circular array of CAPACITY elements, and rear is an index into that array, what is the formula for the index after rear?
count could be zero or the capacity, but no other values could occur.	I have implemented the queue with a circular array, keeping track of front, rear, and manyItems (the number of items in the array). Suppose front is zero, and rear is one less than the current capacity. What can you tell me about manyItems?
Only rear changes	I have implemented the queue with a linked list, keeping track of a front node and a rear node with two reference variables. Which of these reference variables will change during an insertion into a NONEMPTY queue?
front changes., rear changes.	I have implemented the queue with a linked list, keeping track of a front node and a rear node with two reference variables. Which of these reference variables will change during an insertion into an EMPTY queue?
infinity	Give a weighted graph below and you are using the Dijkstra algorithm to find the sortest path from the vetex H to the vertex T. What is the label of the vertex D when the shortest path from H to T is determined?
strongly connected	If every node u in G is adjacent to every other node v in G, a graph is said to be
4	Suppose T is a binary tree with 14 nodes. What is the minimum possible height of T? (Note: In a tree the height of root is 1)
7 11 6 4 3 35 15 8 12	Suppose a doubly linked list of integers is given below and p is a reference to the node with value 15 in the list(i.e. p.info=15): (head)7 11 6 4 3 15 8 12(tail) What does the list look like after the following java code snippet is run?
10	int fun(int n) {if(n < 0) return(fun(-n)); else if(n<5) return(2); else return(n*fun(n/2)); } What is the value of fun(5) ?
D, C, F, B, G, A, E, H	Give a graph below. What is the output of breadth-first traversal from vetex D?(visit nodes in ABC order if there are some nodes having the same selection ability).
l n==1) return(1); else return(h(n-1)+h(n-2)); } l 3	Suppose the h(n) function is defined on the set of integer numbers as below. For the call h(3).how many calls to h will be made, including the original call? int h(int n) {if(n==0
4	Given the division hash function h(x) = x%M, where M = 10 and Collision Resolution is linear probing. How the hash table looks like after inserting the following keys sequentially? 95,33,221,204,53,243
3	Given the division hash function h(x) = x%M, where M = 10 and Collision Resolution is quadratic probing. i.e. when inserting a key x, the collision is resolved by finding an available position at (h(x) + i^2)%M), i=1, 2, ... How the hash table looks like after inserting the following keys sequentially?
Both best and worst cases are O(nlogn)	Select the most correct statement about the complexity of heapsort
risgnMog	What is written to the screen for the input "Good*Morni***ngSir"?
84	What is the value of the Shift Folding Hash Function if K = 43-65-69-7 and TSize = 100?
ABBCD	Using the Huffman code tree below. What is the result of decoding the string: 100000010011?
it deletes the node after p.	Node p1,p2; p1 = p.next; p2 = p1.next; p.next = p2; if(p2!=null) p2.prev=p;
D, C, B, A, E, G, F, H	Given a graph below. What is the output of depth-first traversal from vertex D? (visit nodes in ABC order if there are some nodes having the same selection ability).
87	What is value of the Boundary Folding Hash Function if K = 43-57-69 and TSize = 100?
fun(-1012);	int fun(int n) {if(n<0) return(fun(-n)); else if(n<5) return(2); else return(n*fun(n-2)); } Which call will result in the most recursive calls?
...	Hash function h(x) is a function which transforms a particular key x be it a string, number, record, or the like, into an index i = h(x) in the table T, where T[i] is used for storing an item having key x or its address.
7 11 6 14 5 3 9 8 12	Suppose a singly linked list of integers is given below and p is a reference to the node with value 3 in the list(i.e. p.info=3): (head)7 11 6 14 3 9 8 12(tail) What does the list look like after the following java code snippet is run?
H, A, B, D, T	Given a weighted graph below and you are using the Dijkstra algorithm to find the sortest path from the vertex H to the vertex T. What are the correct order of vertices selected into the set S until the vertex T is selected?(Each step a vertex with minimal current distance is selected into S).
7 1 6 4 3 8 2	Suppose a doubly linked list of integers is given below and p is a reference to the node with value 3 in the list(i.e. p.info=3): (head)7 1 6 4 3 9 8 2(tail) What does the list look like after the following java code sippet is run?
Singly linked list	In a ___every element contains some data and a link to the next element, which allows to keep the structure
3	Consider the following function: void quiz(int n) {if (n > 1) {quiz(n / 2); quiz(n / 2); } System.out.print("* "); } How many asterisks are printed by the function call quiz(5)?
(/n)*(/n)**(/n)That's all!	void fun(int n) {if (n <=0) System.out.println("That's all!"); else {for(int i = 1; i <= n; i++) System.out.print("*"); System.out.println(); fun(n - 2); } } What is the output when the statement fun(5); is run?
it inserts new node with value x after the node p.	Suppose we are considering a doubly linked list and p is some node in the list which has successor node. What does the java code snippet below do? Node p1, p2; p1 = new Node(x); p2 = p.next; p.next = p1; p1.prev = p; p1.next = p2; p2.prev = p1;
O(n)	Basically, the complexity of inserting new element before a given node in the middle of a singly linked lists is
may use a queue	Store a waiting list of printing jobs.
1 3 5 7 9	void fun(int n) {if(n > 0) { fun(n-2); System.out.print(" " +n); } } What is the output when the statement fun(9); is run?
it inserts new node with value x at the head of the list.	Node q = new Node(x); q.prev=null; q.next = head; head.prev = q; head = q;
doubly linked list	A ___ node contains some data and one link to its successor and one link to its predecessor in the list.
Breath-First Traversal	___will visit nodes of a tree starting from the highest (or lowest) level and moving down (or up) level by level and at a level, it visits nodes from left to right(or from right to left).
True	The keyword implements is used to specify that a class inherits from aninterface.
push	The operation for adding an entry to a stack is traditionally called:
Protected, Private	Which of the following keywords are access modifier:
True	Subclasses or derived classes inherit the fields... , An abstract datatype can be part of a program in the form of an interface.
True	An object can be saved in a life if its class type is stated, If the vectors capacity is greater than its size, then a new elem
True about singly linked list	Deleting a node at the beginning of th ...time O(1) - On the average,delete operatio... O(n) steps, There is no immediate access to the predecessorof any node in list
True about Doubly linked list	The node which is deleted from the list will ... e garbage collection, Deleting a node at the end of...ant time O(1), Processing for adding a node tothe end of list includes six steps
False about skip list	The search time is O(lgn) in the worst case , In 20-element skip lists, the node in position 3 points to the
False	In the array list, poping is executed in O(lgn) to the worst case
True about Stack	The Java implementation of the stack is potenti, Stack can be implemented by linked list
When deleting a node of a singly linked list in the average case , in the worst case	Which of the following can be executed in constant time O(n)
True	The recursive version increases program readability, improves self-documentation and simplifies coding
The brevity of program formulation lost. However, the brevity may not bean issue in Java , Program clarity can be diminished	When converting a method from a recursive version into an iterative version
True	Recursive definitions on most computers are eventually implemented using a run-time stack and this implementation is done by the operating system.
False	In all cases, nonrecursive implementation is faster recursive implementation
True about tree	The height of a nonempty tree is the maximum level of node ,The level ofa node is the length of the path from the root to the node plus 1,The level ofa node must be between 1 and height of the tree
True	For a binary tree with n nodes, there are n! different traversals, The complexity of searching depends on the shape of the tree and the,Breath-First traversal
False	Depth-first traversal can not be implemented if ,A recursive implementation of preorder tree trav,There are six possible ordered depth-first traversal
True	Polish notation eliminates all parentheses from formu, Using Polish notation, all expressions have to be brok,Expression trees do not use
VI + IEI), where IVI is number of ve, To prevent loop from happen in an algorithm for traversing a grahp I True	The complexity of DFS is O(
For label-correcting method, information of any ,The complexity of Dijkstras algorithm is O(IVI2)	Which of the following statements about finding the shortest path are true:
VI2) ,Sequential Coloring algorithm establishes the sequence of I True about Graph coloring	The complexity of sequential Coloring algorithm is O(
It depends on the problem	Which graph representation is best?
Rotation	Which operation is used in DSW Algorithm:
Traversal through tree Transformation	Which of the following methods are used to traverse a tree without using anystack or threads:
False	In the array implementation, dequeuing can be executed in O(n)
True about Stack	The most top element is the latest added element , Operations of stack based on Last in First out structure.
True	In the array implementation, enqueuing can be executed in constant time O(1)
True	Run-length encoding is very efficient for text file in which only blank character has a tendency to be repeated without using any technique
True	In shift folding method, the key is usually divided into even, The boundary folding method is applied to number data

SE_Kỳ 3_CSD201

Radix sort	bitRadixsort() can be improved by implementing array , One of techniquesradix sort uses is by looking at each
efficient sorting	Insertion sort is applied to small portions of an array, Mergesort can be made more efficient by replacing
dequeue	which of the following queue operations could result in queue underflow (become empty)?
0 4	void fun(int n) {if(n > 0) { n = n/5; fun(n); System.out.print(" " + n); } } What is the output when the statement fun(23); is run?
pop	Which of the following stack operations could result in stack underflow?
dorino	What is written to the screen for the input "Good*Morni***ng"?
complete	If every node u in G is adjacent to every other node v in G, A graph is said to be
True	In Huffman coding, both the sender and receiver must have a copy of the same code in order for the decoded file to match the encoded file.
Trees	Which of the following data structure is non linear data structure?
Arrays	Which of the following data structure is linear data structure?
Traversal	The operation of processing each element in the list is known as
Search	Finding the location of the element with a given value is:
for relatively permanent <benvung> collections of data	Arrays are best data structures
for the size of the structure and the data in the structure are constantly changing	Linked lists are best suited
the first data from the set to be stored	Each array declaration need not give, implicitly or explicitly, the information about
by this way computer can keep track only the address of the first element and the addresses of other elements can be calculated	The elements of an array are stored successively in memory cells because
base address	The memory address of the first element of an array is called
LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array	The memory address of fifth element of an array can be calculated by the formula
linear arrays	Which of the following data structures are indexed structures?
There must be mechanism to delete and/or insert elements in list	Which of the following is not the required condition for binary search algorithm?
binary search algorithm is not efficient when the data elements are more than 1000.	Which of the following is not a limitation of binary search algorithm?
matrix arrays	Two dimensional arrays are also called
P contains the address of an element in DATA	A variable P is called pointer if
Arrays	Which of the following data structure can't store the non-homogeneous data elements?
Records	Which of the following data structure store the non-homogeneous data elements?
Scalars, atoms, elementary items	Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called
difference bw linear and record	An array is suitable for homogeneous data but hte data items in a record may have different data type
difference bw linear and record	In a record, there may not be a natural ordering in opposed to linear array.
difference bw linear and record	A record form a hierarchical structure but a lienear array does not
False	pointers store the next data element of a list
True	Arrays are dense lists and static data structure
True	linked lists are collection of the nodes that contain information part and next pointer
True	data elements in linked list need not be stored in adjecent space in memory
overflow	When new data are to be inserted into a data structure, but there is no available space; this situation is usually called
underflow	The situation when in a linked list START=NULL is
doubly linked list	Which of the following is two way list?
FAEKCDHGB	When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return
Zero	Value of the first linked list index is _____
an integer	A linked list index is __ that represents the position of a node in a linked list.
bc...of the LinkedList class is ...constructor of the LinkedList class.	Why is the constructor of the LinkedList class empty?
FIFO , First In First Out	_____ form of access is used to add and remove nodes from a queue
LIFO	____ form of access is used to add and remove nodes from a stack
back	New nodes are added to the ___ of the queue.
queue linked list	A _____ is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
Array	In an array queue, data is stored in an ___ element.
isEmpty()	The pop() member function determines if the stack is empty by calling the ___ member function
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
Thread	In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called
Binary search trees	The in order traversal of tree will yield a sorted listing of elements of tree in
O(n log n)	The complexity of merge sort algorithm is a.
null case	Which of the following case does not exist in complexity theory
run time	A Linked list can grow and shrink in size dynamically at
appendNode()	What member function places a new node at the end of the linked list?
getSize()	The _____ function retrieves the value of the size member of the LinkedList class
Sequentially	Elements of an array are stored _____ in memory
Link	Each entry in a linked list is called a _____
3	How many parts are there in a declaration statement?
Stack	_____ is the way you groups things together by placing one thing on top of another and then removing things one at a time from the top
Stack , Queue, Linked list	Pushdown list means:
All operations are at one end	Which of the following is the feature of stack?
D	The five items: A, B, C, D and E are pushed in a stack,one after the other starting from A. The stack is popped four times and each element is inserted in a queue. Then two elements are deleted from the queue and pushed back on the stack. Now one item is popped from the stack.The popped item is.
delete a	To delete a dynamically allocated array named `a`, the correct statement is
pointer-variable = malloc(sizeof(struct struct-name));	To create a linked list, we can allocate space and make something point to it, by writing: struct-name *pointer-variable; Which of the following statement will correctly allocate the space
both a and b	The size of a structure can be determined by a. size of variable name b. size of (struct tag)
Accessing arrays or string elements	The reason for using pointer is ... Choose the false option from the following sentences
Trees	Which of the following data structure is non linear data structure?
Arrays	Which of the following data structure is linear data structure?
Traversal	The operation of processing each element in the list is known as
Search	Finding the location of the element with a given value is
for relatively permanent collections of data	Arrays are best data structures
for the size of the structure and the data in the structure are constantly changing	Linked lists are best suited
the first data from the set to be stored	Each array declaration need not give, implicitly or explicitly, the information about

SE_Kỳ 3_CSD201

base address	The memory address of the first element of an array is called
LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array	The memory address of fifth element of an array can be calculated by the formula
linear arrays	Which of the following data structures are indexed structures?
There must be mechanism to delete and/or insert elements in list	Which of the following is not the required condition for binary search algorithm?
binary search algorithm is not efficient when the data elements are more than 1000.	Which of the following is not a limitation of binary search algorithm?
matrix arrays	Two dimensional arrays are also called
P contains the address of an element in DATA	A variable P is called pointer if
Arrays	Which of the following data structure can't store the non-homogeneous data elements?
Records	Which of the following data structure store the non-homogeneous data elements?
all of above	Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called
All of above	The difference between linear array and a record is
pointers store the next data element of a list	Which of the following statement is false?
sorted singly linked list	Binary search algorithm can not be applied to
overflow	When new data are to be inserted into a data structure, but there is no available space; this situation is usually called
underflow	The situation when in a linked list START=NULL is
doubly linked list	Which of the following is two way list?
stacks	The term "push" and "pop" is related to the
Deque	A data structure where elements can be added or removed at either end but not in the middle
FAEKCDHGB	When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return
Queues	Which data structure allows deleting data elements from front and inserting at rear?
Input-restricted deque	Identify the data structure which allows deletions at both ends of the list but insertion at only one en
None of above	Which of the following data structure is non-linear type?
All of above	Which of the following data structure is linear type?
Tree	To represent hierarchical relationship between elements, which data structure is suitable
Extended binary tree	A binary tree whose every node has either zero or two children is called
Dn = log2n+1	The depth of a complete binary tree is given by
the variable in E will appear as external nodes and operations in internal nodes	When representing any algebraic expression E which uses only binary operations in a 2-tree,
by replacing each empty sub tree by a new external node	A binary tree can easily be converted into q 2-tree
internal nodes on extended tree	When converting binary tree into extended binary tree, all the original nodes in binary tree are
ABDECF	The post order traversal of a binary tree is DEBFC Find out the pre order traversal
Quick sort	Which of the following sorting algorithm is of divide-and-conquer type?
Recursion	An algorithm that calls itself directly or indirectly is known as
Zero	Value of the first linked list index is
an Integer	A linked list index is that represents the position of a node in a linked list.
because initialization of data members of the LinkedList class is performed by the constructor of the LinkedList class.	Why is the constructor of the LinkedList class empty?
FIFO , First In First Out	form of access is used to add and remove nodes from a queue
LIFO	form of access is used to add and remove nodes from a stack
back	New nodes are added to the of the queue.
queue linked list	A is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
both of them	A is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
isEmpty()	The pop() member function determines if the stack is empty by calling the member function
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
thread	In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called
Binary search trees	The in order traversal of tree will yield a sorted listing of elements of tree in
Values in a node is greater than every value in children of it	In a Heap tree
all of above	In a graph if e=[u, v], Then u and v are called
All of above	A connected graph T without any cycles is called
B.e begins at u and ends at v C. u is processor and v is successor	In a graph if e=(u, v) means
complete	If every node u in G is adjacent to every other node v in G, A graph is said to be
O(n)	The complexity of linear search algorithm is
O(n log n)	The complexity of merge sort algorithm is
Null case	Which of the following case does not exist in complexity theory
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
run time	A Linked list can grow and shrink in size dynamically at
appendNode()	What member function places a new node at the end of the linked list?
getSize()	The function retrieves the value of the size member of the LinkedList class
Sequentially	Elements of an array are stored in memory
Link	Each entry in a linked list is called a
3	How many parts are there in a declaration statement?
Stack	is the way you groups things together by placing one thing on top of another and then removing things one at a time from the top
All of the above	ushdown list means:
All operations are at one end	Which of the following is the feature of stack?
D	The five items: A, B, C, D and E are pushed in a stack,one after the other starting from A. The stack is popped four times and each element is inserted in a queue. Then two elements are deleted from the queue and pushed back on the stack. Now one item is popped from the stack.
delete a;	To delete a dynamically allocated array named `a`, the correct statement is
pointer-variable = malloc(sizeof(struct struct-name));	To create a linked list, we can allocate space and make something point to it, by writing: struct-name *pointer-variable; Which of the following statement will correctly allocate the space
a. size of variable name + b. size of (struct tag)	The size of a structure can be determined by
Accessing arrays or string elements	The reason for using pointer is ...
Placing a data item on top of the stack.	What is the "push"?
Removing a data item from the top of the stack.	What is "popping"?
Last-In-First-Out. A stack is a LIFO storage mechanism because the last item inserted is the first one to be removed.	Explain LIFO
It allows the user to read the value at the top of the stack with out removing it.	What is "peek"?
1. Read the characters from a string one at a time.	Explain how you would create an algorithm that matches delimiters on the stack. Include errors in your explanation.

SE_Kỳ 3_CSD201

...	When the program reads a closing delimiter from the input, pop the corresponding opening delimiter from the top of the stack
...	If the delimiters are not of the same type an error will occur, telling us that the string is missing either an opening or closing delimiter. If there is no opening delimiter on the stack an error will occur.
They are not inserted onto the stack; they are ignored.	What happens to non delimiter characters?
Methods.	Whatever you can do to manipulate the data storage structure becomes our:
In a queue the first item inserted is the first to be removed (FIFO). In a stack the last item inserted is the first to be removed (LIFO)	What is the difference between a stack and a queue?
It is a British reference to waiting in line. Fist in, first out.	Where does the term queue come from?
extend all the way down to index 0.	Unlike a stack, the items in a queue don't always:
It "peeks" at the value of the item at the front of the queue without removing it as opposed to the last value in a stack.	How is "peek" different in a queue?
Wrapping around allows the user to fill in new items in the queue at index zero, assuming that the queue is empty at index zero. This creates a broken sequence (the items in the queue are in two different sequences in the array).	What is wrapping around? When is it useful? What is created that must be fixed?
Delete enough items so that the Fron arrow wraps around. This creates a single contiguous sequence.	How can you fix a broken sequence? What is created?
A double-ended queue. You can insert items and either end & delete items from either end.	What is a deque?
A priority queue items are ordered by key value so that the item with the lowest key (or in some implementations the highest key) is always at the front. Items are inserted in the proper position to maintain the order.	How is a priority queue different than a queue?
You insert a letter from the postman into your pile of pending letters according to priority. The higher the priority the higher the position in the pile.	How does the mail sorting analogy apply to the priority queue?
Pro: Simple and appropriate when the # of items isn't high or insertion speed isn't critical.	What are the pros and cons of using a priority queue implemented by a simple array?
T	In a singly-linked list, these is no efficient way to insert node before a given node in the middle or at the end of the list
Store a waiting list of printing	which of the following applications may use a queue
best case O(n), worst case 0(n^2)	select the most correct statement about the complexity of insertion sort
undo sequence in a text editor, auxiliary data structure for algorithms	which of following applications may use stack?
enqueue	the operator for adding an entry to a queue is traditionally called
strongly connected	if every node in G is adjiacent to every other node v in G, a graph said to be
4	T is a binary tree with 14 nodes. what is the minimum possiple height of T
4F4O3F2O5F2O	FFFFOOOOFFFOOFFFFFOO
both best and worst 0(nlogn)	select the most correct statement about the complexity of heapsort
84	what is the value of the Shift Folding Hash Function if K = 43-65-69-7 and Tsize = 100
in chaining, only some possition of the table is associated with a linked list of chain of structrures whose info fields strore keys or references to keys	specify the correct statement about chaining method for handling collision
7	what is the minimum number of nodes in a full binary tree with height 3
Hash function h(x) transform a particular key x, etc into an index i=h(x) in the table	what is the correct definition of a hash function?
both best and worst 0(n^2)	select the most correct statement about the complexity of selection sort
Multi-programming	which following applications may use a queue?
best case 0(n), worst case 0(n^2)	select the most correct statement about the complexity of bubble sort
True	in linked list, the tail node is introduced for performance purpose only
True	A recursive method is a method that invokes itself directly or indirectly. For a recursive method to terminate there must be one or more base cases
pop	A operation for moving and returning the top element of the stact is traditionally called
true	in a singly-linked list we can insert a node after a given node with time complexity O(n)
true	in a singly-linked list there is no effecient way to insert a node before a given node in the middle of the list
4	a binary tree with 14 nodes. the minimum possible height of T
simple graph	a graph that has neither self-loop nor parallel edges are called
saving data strorage	specify the reason for data compression
sorted linear array	binary tree algorithm cannot be applied to
for relatively permanent collections of data	linked list are best suited
94	what is the value of the Shift Folding Hash Function if K = 42-58-67 and Tsize = 100
singly linked list	in a every element contains some data and a link to the next element, which allow to keep the structure
is a array in memory used ... into an index i=h(x) in the table	what is the correct definition of a hash table?
some possition of the table is associated with a linked list or chain of structures whose info fields store keys or references to keys	specify thof the e correct statement about chaining method for handling collision
keeping track of local variables at run time	which of following applications may use a queue
double linked list	a node contains some data and one link to its successor and one link to its predecessor in the list
dequeue	which of following queue operations cold result in queue underflow
dequeue	the operator for removing and returning the end element of the queue is traditionally called
for relatively permanent collections of data	arrays are the best data structures
if the coalesced method is used for collision resolution, insertion and searching always take constant time 0(1)	correct statement about hasing algorithm
0(n)	the complexity of countting the number of items in a doubly-linked list
0(nlogn)	the complexity of merge sort is
88	what is the value of the Boundary Folding Hash Function if K = 45-65-79-8 and Tsize = 100
97	what is the value of the Shift Folding Hash Function if K = 45-65-79-8 and Tsize = 100
strongly connected	If every node u in G is adjacent to every other node v in G, a graph is said to be
4	suppose T is a binary tree with 14 nodes. what is the minimum possible height of T
7 11 6 4 3 35 15 8 12	7 11 6 4 3 15 8 12
7 1 6 4 3 8 2	7 1 6 4 3 9 8 2
27 11 6 4 3 10 19 8 2	27 11 6 4 3 10 8 2
undo sequence in the text editor	which of the following applications may use a stack
4F4O3F2O5F2O	Give a raw message 'FFFFOOOOFFFOOFFFFFOO'(without single quote).Run the run-length encoding algorithm for that message .what is the output?
Both best and worst cases are (nlogn)	select the most correct statement about the complexity of heapsort
Object pop(){if(isEmpty())return(null);return(pool.remove(pool.size()-1));}	specify the correct implementation of pop() method of a stack. this stack uses java.util.ArrayList for storing data and the end of the list is treated as the top of the stack.
7 10 6 4 2 13 8 5 3	7 10 6 4 2 13 8 3
84	what is the value of the shift folding hash function if K= 43-65-69-7 and Tsize = 100?
ABBCD	10000010011
100	Given the character frequencies B : 32% C : 28% D : 16% E : 6% F : 18% Using Huffman encoding, what is the code for character D?(Suppose that when constructing a sub tree from 2 nodes we always place node with higher frequency on the left, and the left branch of a node gets value 0, the right one gets value 1)
101	Given the character frequencies B : 32% C : 28% D : 16% E : 6% F : 18% Using Huffman encoding, what is the code for character E?(Suppose that when constructing a sub tree from 2 nodes we always place node with higher frequency on the left, and the left branch of a node gets value 0, the right one gets value 1)
87	what is the value of the Boundary Folding Hash Function if K = 43-57-69 and Tsize = 100
7 11 6 14 5 3 9 8 12	7 11 6 14 3 9 8 12

SE_Kỳ 3_CSD201

3B4Y3B2Y5B2Y	Give a raw message ' BBBYYYYBBBYYBBBBBYY'(without single quote).Run the run-length encoding algorithm for that message .what is the output?
27 11 6 4 3 10 19 8 2	What does the list look like after the following java code snippet is run? intx = 19;
Store a waiting list of printing jobs	Select the statement that is most correct.Which of the following applications may use a stack?
The best case is 0(n). and the worst case is 0(n-2)	Select the most conect statement about the complexify of insertion sort
Multi-programming	Select the statement that is most correct. Which of the following applications may use a queue?
In a linked list, the tail node is introduced for performance purpose only	Select the most correct statement:
0	To implement an AVL tree, a concept balance factor is introduced (bal = height(right)-height(left). Suppose an AVL tree is created by inserting to the tree the following keys sequentially: 6,4,7,3,5,2 What is the balance factor of the node 4? (please note that the tree is still AVL)
fun(-1023);	Consider the following function: void fun(int n) {if (n<0) {System.out.println("-"); fun(-n); } else if(n<10) System.out.println(n); else {fun(n/10); System.out.println(n%10); } } Which call will result in the most recursive calls?
Keeping track of previous choices(as in backtracking).	Which of the following applications may use a stack?
It deletes the node p	Suppose we are considering a singly linked list and p is some node in the list which has both predecessor and successor nodes. What does the java code snippet below do? Node f=head; while(f.next!=p) f=f.next; f.next=p.next;
void push(Integer x) {Node p = new Node(x); p.next=head; head=p; }	push() method of the stack
A recursive method is a method that invokes itself directly or indirectly. For a recursive method to terminate there must be one or more base cases	Select the statement that is most correct
void inOrder(Node p) {if(p != null){ inOrder(p.left); visit(p); inOrder(p.right); } }	Specify the correct implementation of in-order traverse algorithm for binary trees
n>=0 && n<15	What values of n are directly handled by the stopping (base) case?
Item is the last element in the array or item is not there at all	The worst case occur in linear search algorithm when
Selection	If the number of records to be sorted is small, then...sorting can be efficient.
running time	The complexity of sorting algorithm measures the ..... as a function of the number n of items to be sorter.
when item is somewhere in the middle of the array	The Average case occurs in linear search algorithm
pointer array\sorted linear array	Binary search algorithm cannot be applied to
Both of the above	Sorting algorithm can be characterized as
O(n2)	The complexity of bubble sort algorithm is
Insertion	is putting an element in the appropriate place in a sorted list yields a larger sorted order list.
O(n*logn)	order is the best possible for array sorting algorithm which sorts n item.
Exchange	is rearranging pairs of elements which are out of order, until no such pairs remain.
Radix sort	is the method used by card sorter.
Merge sort	Which of the following sorting algorithm is of divide and conquer type?
Insertion	sorting algorithm is frequently used when n is small where n is total number of elements.
Selection sort	Which of the following sorting algorithm is of priority queue sorting type?
quick sort	Partition and exchange sort is
In a every element contains some data and a link to the next element, which allows to keep the structure	singly linked list
Auxiliary data structure for algorithms.	What of the following applications may use a stack?
Both best and worst cases are O(n^2)	Select the most correct statement about the complexity of selection sort
Store a waiting list of printing jobs	Which of the following applications may use a stack?
enqueue	The operation for adding an entry to a queue is traditionally called
Lists implemented with an array.	What kind of list is best to answer questions such as "What is the item at position n?"
There is a first entry, a second entry, and so on.	Entries in a stack are "ordered". What is the meaning of this statement?
push	The operation for adding an entry to a stack is traditionally called:
pop	The operation for removing an entry from a stack is traditionally called:
pop	Which of the following stack operations could result in stack underflow?
steprac	What is written to the screen for the input "carpets"?
3	Consider the usual algorithm for determining whether a sequence of parentheses is balanced. What is the maximum number of parentheses that will appear on the stack AT ANY ONE TIME when the algorithm analyzes: (()(()(()))) ?
data[10]	Suppose we have an array implementation of the stack class, with ten items in the stack stored at data[0] through data[9]. The CAPACITY is 42. Where does the push method place the new entry in the array?
Both push and pop would require linear time.	Consider the implementation of the Stack using a partially-filled array. What goes wrong if we try to store the top of the Stack at location [0] and the bottom of the Stack at the last used position of the array?
At the head	In the linked list implementation of the stack class, where does the push method place the new entry on the linked list?
None of these operations require linear time.	In the array version of the Stack class, which operations require linear time for their worst-case behavior?
None of these operations require linear time.	In the linked-list version of the Stack class, which operations require linear time for their worst-case behavior?
Something between -15 and -100	What is the value of the postfix expression 6 3 2 4 + - *:
Queues use two ends of the structure; stacks use only one.	One difference between a queue and a stack is:
DCBA	If the characters 'D', 'C', 'B', 'A' are placed in a queue (in that order), and then removed one at a time, in what order will they be removed?
The getFront method would require linear time.	Consider the implementation of the Queue using a circular array. What goes wrong if we try to keep all the items at the front of a partially-filled array (so that data[0] is always the front).
At the tail	In the linked list implementation of the queue class, where does the insert method place the new entry on the linked list?
None of these operations require linear time.	In the circular array version of the Queue class, which operations require linear time for their worst-case behavior?
complete	If every node ∪ in G is adjacent to every other node v in G, a graph is said to be
Queues	Which data structure allows deleting data elements from front and inserting at rear?
Input-restricted deque	Identify the data structure which allows deletions at both ends of the list but insertion at only one end.
None of string,list,stack	Which of the following data structure is non-linear type?
All off string,list,queue	Which of the following data structure is linear type?
tree	To represent hierarchical relationship between elements, which data structure is suitable?
Extended binary tree	A binary tree whose every node has either zero or two children is called
Dn=log2n+1	The depth of a complete binary tree is given by
the variable in E will appear as external nodes and operations in internal nodes	When representing any algebraic expression E which uses only binary operations in a 2-tree,
by replacing each empty sub tree by a new external node	A binary tree can easily be converted into q 2-tree
internal nodes on extended tree	When converting binary tree into extended binary tree, all the original nodes in binary tree are
ABDECF	The post order traversal of a binary tree is DEBFCA. Find out the pre order traversal
Quick sort	Which of the following sorting algorithm is of divide-and-conquer type?
thread	In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called
Binary search trees	The in order traversal of tree will yield a sorted listing of elements of tree in
Values in a node is greater than every value in children of it	In a Heap tree
endpoints,adjacent node,neighbors	In a graph if e=[u, v], Then u and v are called
tree graph,free tree,a tree	A connected graph T without any cycles is called
e begins at u and ends at v	In a graph if e=(u, v) means
u is processor and v is successor	In a graph if e=(u, v) means

SE_Kỳ 3_CSD201

linear arrays	Which of the following data structures are indexed structures?
There must be mechanism to delete and/or insert elements in list	Which of the following is not the required condition for binary search algorithm?
binary search algorithm is not efficient when the data elements are more than 1000.	Which of the following is not a limitation of binary search algorithm?
both of above: table,matrix	Two dimensional arrays are also called
P contains the address of an element in DATA.	A variable P is called pointer if
Arrays	Which of the following data structure can't store the non-homogeneous data elements?
Records	Which of the following data structure store the non-homogeneous data elements?
all: elementary ,atom,scalar	Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called
all	The difference between linear array and a record is
sorted linked list	Binary search algorithm can not be applied to
pointers store the next data element of a list	Which of the following statement is false?
overflow	When new data are to be inserted into a data structure, but there is no available space; this situation is usually called
underflow	The situation when in a linked list START=NULL is
FIFO lists	Which of the following name does not relate to stacks?
stacks	The term "push" and "pop" is related to the
Deque	A data structure where elements can be added or removed at either end but not in the middle
FAEKCDHGB	When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return
4	Suppose T is a binary tree with 14 nodes. What is the minimum possible height of T?
7	What is the minimum number of nodes in a full binary tree with height 4?
The best case is 0(n). and the worst case is 0(n-2)	Select the most correct statement about the complexity of insertion sort
The best case is O(n^2), and The worst case is O(nlogn)	Select the most correct statement about the complexity of merge sort
dai nhat	What is the correct definition of a hash function?
Trees	Which of the following data structure is non linear data structure?
Arrays	Which of the following data structure is linear data structure?
Traversal	The operation of processing each element in the list is known as
Search	Finding the location of the element with a given value is:
for relatively permanent collections of data	Arrays are best data structures
for the size of the structure and the data in the structure are constantly changing	Linked lists are best suited
the first data from the set to be store	Each array declaration need not give, implicitly or explicitly, the information about
by this way computer can keep track only the address of the first element and the addresses of elements can be calculated	The elements of an array are stored successively in memory cells because
base address	The memory address of the first element of an array is called
LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for array	The memory address of fifth element of an array can be calculated by the formula
linear arrays	Which of the following data structures are indexed structures?
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Arrays	Which of the following data structure can't store the non-homogeneous data elements?
Records	Which of the following data structure store the non-homogeneous data elements?
all of above	Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called
All of above	The difference between linear array and a record is
pointers store the next data element of a list	Which of the following statement is false?
sorted binary trees	Binary search algorithm can not be applied to
overflow	When new data are to be inserted into a data structure, but there is no available space; this situation is usually called
underflow	The situation when in a linked list START=NULL is
doubly linked list	Which of the following is two way list?
stacks	The term "push" and "pop" is related to the
Deque	A data structure where elements can be added or removed at either end but not in the middle
FAEKCDHGB	When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return
Queues	Which data structure allows deleting data elements from front and inserting at rear?
Input-restricted deque	Identify the data structure which allows deletions at both ends of the list but insertion at only one en
None of above	Which of the following data structure is non-linear type?
All of above	Which of the following data structure is linear type?
Tree	To represent hierarchical relationship between elements, which data structure is suitable?
Extended binary tree	A binary tree whose every node has either zero or two children is called
Dn = log2n+1	The depth of a complete binary tree is given by
the variable in E will appear as external nodes and operations in internal nodes	When representing any algebraic expression E which uses only binary operations in a 2-tree,
by replacing each empty sub tree by a new external node	A binary tree can easily be converted into q 2-tree
internal nodes on extended tree	When converting binary tree into extended binary tree, all the original nodes in binary tree are
ABDECF	The post order traversal of a binary tree is DEBFC Find out the pre order traversal
Quick sort	Which of the following sorting algorithm is of divide-and-conquer type?
Zero	Value of the first linked list index is
an Integer	A linked list index is __ that represents the position of a node in a linked list.
because initialization of data members of the LinkedList class is performed by the constructor of the LinkedList class.	Why is the constructor of the LinkedList class empty?
FIFO , First In First Out	form of access is used to add and remove nodes from a queue
LIFO	form of access is used to add and remove nodes from a stack
back	New nodes are added to the ___ of the queue.
queue linked list	A _____ is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
array	In an array queue, data is stored in an ___ element.
isEmpty()	The pop() member function determines if the stack is empty by calling the ___ member function
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
thread	In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called
Binary search trees	The in-order traversal of tree will yield a sorted listing of elements of tree in

Values in a node is greater than every value in children of it	In a Heap tree
All of above	A connected graph T without any cycles is called
e begin, u is profe	In a graph if e=(u, v) means
Null case	Which of the following case does not exist in complexity theory
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
run time	A Linked list can grow and shrink in size dynamically at
appendNode()	What member function places a new node at the end of the linked list?
getSize()	The _____ function retrieves the value of the size member of the LinkedList class
Sequentially	Elements of an array are stored _____ in memory
Link	Each entry in a linked list is called a
3	How many parts are there in a declaration statement?
Stack	is the way you groups things together by placing one thing on top of another and then removing things one at a time from the top
All	Pushdown list means:
All operations are at one end	Which of the following is the feature of stack?
D	The five items: A, B, C, D and E are pushed in a stack,one after the other starting from A. The stack is popped four times and each element is inserted in a queue. Then two elements are deleted from the queue and pushed back on the stack. Now one item is popped from the stack.The popped item is.
delete a;	To delete a dynamically allocated array named `a`, the correct statement is
pointer-variable = malloc(sizeof(struct struct-name));	To create a linked list, we can allocate space and make something point to it, by writing: struct-name *pointer-variable; Which of the following statement will correctly allocate the space
Both a and b	The size of a structure can be determined by a. size of variable name b. size of (struct tag)
Accessing arrays or string elements	The reason for using pointer is ... Choose the false option from the following sentences
for relatively permanent collections of data	Arrays are the best data structures
Trees	Which of the following data structure is non linear data structure?
Arrays	Which of the following data structure is linear data structure?
Traversal	The operation of processing each element in the list is known as
Search	Finding the location of the element with a given value is
for relatively permanent collections of data	Arrays are best data structures
for the size of the structure and the data in the structure are constantly changing	Linked lists are best suited
the first data from the set to be stored	Each array declaration need not give, implicitly or explicitly, the information about
by this way computer can keep track only the address of the first element and the addresses of other elements can be calculated	The elements of an array are stored successively in memory cells because
base address	The memory address of the first element of an array is called
LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array	The memory address of fifth element of an array can be calculated by the formula
linear arrays	Which of the following data structures are indexed structures?
There must be mechanism to delete and/or insert elements in list	Which of the following is not the required condition for binary search algorithm?
binary search algorithm is not efficient when the data elements are more than 1000.	Which of the following is not a limitation of binary search algorithm?
matrix arrays	Two dimensional arrays are also called
P contains the address of an element in DATA	A variable P is called pointer if
Arrays	Which of the following data structure can't store the non-homogeneous data elements?
Records	Which of the following data structure store the non-homogeneous data elements?
all of above	Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called
All of above	The difference between linear array and a record is
pointers store the next data element of a list	Which of the following statement is false?
sorted singly linked list	Binary search algorithm can not be applied to
overflow	When new data are to be inserted into a data structure, but there is no available space; this situation is usually called
underflow	The situation when in a linked list START=NULL is
doubly linked list	Which of the following is two way list?
stacks	The term "push" and "pop" is related to the
Deque	A data structure where elements can be added or removed at either end but not in the middle
FAEKCDHGB	When inorder traversing a tree resulted E A C K F H D B G; the preorder traversal would return
Queues	Which data structure allows deleting data elements from front and inserting at rear?
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None of above	Which of the following data structure is non-linear type?
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Extended binary tree	A binary tree whose every node has either zero or two children is called
Dn = log2n+1	The depth of a complete binary tree is given by
the variable in E will appear as external nodes and operations in internal nodes	When representing any algebraic expression E which uses only binary operations in a 2-tree,
by replacing each empty sub tree by a new external node	A binary tree can easily be converted into q 2-tree
internal nodes on extended tree	When converting binary tree into extended binary tree, all the original nodes in binary tree are
ABDECF	The post order traversal of a binary tree is DEBFC Find out the pre order traversal
Quick sort	Which of the following sorting algorithm is of divide-and-conquer type?
Recursion	An algorithm that calls itself directly or indirectly is known as
Zero	Value of the first linked list index is
an Integer	A linked list index is that represents the position of a node in a linked list.
because initialization of data members of the LinkedList class is performed by the constructor of the LinkedList class.	Why is the constructor of the LinkedList class empty?
FIFO , First In First Out	form of access is used to add and remove nodes from a queue
LIFO	form of access is used to add and remove nodes from a stack
back	New nodes are added to the of the queue.
queue linked list	A is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
both of them	A is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
isEmpty()	The pop() member function determines if the stack is empty by calling the member function
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
thread	In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called
Binary search trees	The in order traversal of tree will yield a sorted listing of elements of tree in

SE_Kỳ 3_CSD201

all of above	In a graph if e=[u, v], Then u and v are called
All of above	A connected graph T without any cycles is called
B.e begins at u and ends at v C. u is processor and v is successor	In a graph if e=(u, v) means
complete	If every node u in G is adjacent to every other node v in G, A graph is said to be
O(n)	The complexity of linear search algorithm is
O(n log n)	The complexity of merge sort algorithm is
Null case	Which of the following case does not exist in complexity theory
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
run time	A Linked list can grow and shrink in size dynamically at
appendNode()	What member function places a new node at the end of the linked list?
getSize()	The function retrieves the value of the size member of the LinkedList class
Sequentially	Elements of an array are stored in memory
Link	Each entry in a linked list is called a
3	How many parts are there in a declaration statement?
Stack	is the way you groups things together by placing one thing on top of another and then removing things one at a time from the top
All of the above	ushdown list means:
All operations are at one end	Which of the following is the feature of stack?
D	The five items: A, B, C, D and E are pushed in a stack,one after the other starting from A. The stack is popped four times and each element is inserted in a queue. Then two elements are deleted from the queue and pushed back on the stack. Now one item is popped from the stack.

delete a;	To delete a dynamically allocated array named `a`, the correct statement is
pointer-variable = malloc(sizeof(struct struct-name));	To create a linked list, we can allocate space and make something point to it, by writing: struct-name *pointer-variable; Which of the following statement will correctly allocate the space
a. size of variable name + b. size of (struct tag)	The size of a structure can be determined by
Accessing arrays or string elements	The reason for using pointer is ...
Placing a data item on top of the stack.	What is the "push"?
Removing a data item from the top of the stack.	What is "popping"?
Last-In-First-Out. A stack is a LIFO storage mechanism because the last item inserted is the first one to be removed.	Explain LIFO
It allows the user to read the value at the top of the stack with out removing it.	What is "peek"?
1. Read the characters from a string one at a time.	Explain how you would create an algorithm that matches delimiters on the stack. Include errors in your explanation.
...	Find and place the opening delimiters on the stack one at a time
...	When the program reads a closing delimiter from the input, pop the corresponding opening delimiter from the top of the stack
...	If the delimiters are not of the same type an error will occur, telling us that the string is missing either an opening or closing delimiter. If there is no opening delimiter on the stack an error will occur.
They are not inserted onto the stack; they are ignored.	What happens to non delimiter characters?
Methods.	Whatever you can do to manipulate the data storage structure becomes our:
In a queue the first item inserted is the first to be removed (FIFO). In a stack the last item inserted is the first to be removed (LIFO)	What is the difference between a stack and a queue?
It is a British reference to waiting in line. Fist in, first out.	Where does the term queue come from?
extend all the way down to index 0.	Unlike a stack, the items in a queue don't always:

It "peeks" at the value of the item at the front of the queue without removing it as opposed to the last value in a stack.	How is "peek" different in a queue?
Wrapping around allows the user to fill in new items in the queue at index zero, assuming that the queue is empty at index zero. This creates a broken sequence (the items in the queue are in two different sequences in the array).	What is wrapping around? When is it useful? What is created that must be fixed?
Delete enough items so that the Fron arrow wraps around. This creates a single contiguous sequence.	How can you fix a broken sequence? What is created?
A double-ended queue. You can insert items and either end & delete items from either end.	What is a deque?
A priority queue items are ordered by key value so that the item with the lowest key (or in some implementations the highest key) is always at the front. Items are inserted in the proper position to maintain the order.	How is a priority queue different than a queue?
You insert a letter from the postman into your pile of pending letters according to priority. The higher the priority the higher the position in the pile.	How does the mail sorting analogy apply to the priority queue?
Pro: Simple and appropriate when the # of items isn't high or insertion speed isn't critical.	What are the pros and cons of using a priority queue implemented by a simple array?
T	In a singly-linked list, these is no efficient way to insert node before a given node in the middle or at the end of the list
Store a waiting list of printing	which of the following applications may use a queue
best case O(n), worst case 0(n^2)	select the most correct statement about the complexity of insertion sort
undo sequence in a text editor, auxiliary data structure for algorithms	which of following applications may use stack?
enqueue	the operator for adding an entry to a queue is traditionally called
strongly connected	if every node in G is adjiacent to every other node v in G, a graph said to be
4	T is a binary tree with 14 nodes. what is the minimum possiple height of T
4F4O3F2O5F2O	FFFFOOOOFFFOOFFFFFOO
both best and worst 0(nlogn)	select the most correct statement about the complexity of heapsort
84	what is the value of the Shift Folding Hash Function if K = 43-65-69-7 and Tsize = 100
in chaining, only some possition of the table is associated with a linked list of chain of structrures whose info fields strore keys or references to keys	specify the correct statement about chaining method for handling collision
7	what is the minimum number of nodes in a full binary tree with height 3

Hash function h(x) transform a particular key x, etc into an index i=h(x) in the table	what is the correct definition of a hash function?
both best and worst 0(n^2)	select the most correct statement about the complexity of selection sort
Multi-programming	which following applications may use a queue?
best case 0(n), worst case 0(n^2)	select the most correct statement about the complexity of bubble sort
True	in linked list, the tail node is introduced for performance purpose only
True	A recursive method is a method that invokes itself directly or indirectly. For a recursive method to terminate there must be one or more base cases
pop	A operation for moving and returning the top element of the stact is traditionally called
true	in a singly-linked list we can insert a node after a given node with time complexity O(n)
true	in a singly-linked list there is no effecient way to insert a node before a given node in the middle of the list
4	a binary tree with 14 nodes. the minimum possible height of T
simple graph	a graph that has neither self-loop nor parallel edges are called
saving data strorage	specify the reason for data compression
sorted linear array	binary tree algorithm cannot be applied to
for relatively permanent collections of data	linked list are best suited
94	what is the value of the Shift Folding Hash Function if K = 42-58-67 and Tsize = 100
singly linked list	in a every element contains some data and a link to the next element, which allow to keep the structure
is a array in memory used ... into an index i=h(x) in the table	what is the correct definition of a hash table?

SE_Kỳ 3_CSD201

some possition of the table is associated with a linked list or chain of structures whose info fields store keys or references to keys	specify thof the e correct statement about chaining method for handling collision
keeping track of local variables at run time	which of following applications may use a queue
double linked list	a node contains some data and one link to its successor and one link to its predecessor in the list
dequeue	which of following queue operations cold result in queue underflow
dequeue	the operator for removing and returning the end element of the queue is traditionally called
for relatively permanent collections of data	arrays are the best data structures
if the coalesced method is used for collision resolution, insertion and searching always take constant time 0(1)	correct statement about hasing algorithm
0(n)	the complexity of countting the number of items in a doubly-linked list
0(nlogn)	the complexity of merge sort is
88	what is the value of the Boundary Folding Hash Function if K = 45-65-79-8 and Tsize = 100
97	what is the value of the Shift Folding Hash Function if K = 45-65-79-8 and Tsize = 100
Trees	Which of the following data structure is non linear data structure?
Arrays	Which of the following data structure is linear data structure?
Traversal	The operation of processing each element in the list is known as
Search	Finding the location of the element with a given value is
for relatively permanent collections of data	Arrays are best data structures
for the size of the structure and the data in the structure are constantly changing	Linked lists are best suited
the first data from the set to be stored	Each array declaration need not give, implicitly or explicitly, the information about
by this way computer can keep track only the address of the first element and the addresses of other elements can be calculated	The elements of an array are stored successively in memory cells because
base address	The memory address of the first element of an array is called
LOC(Array[5]=Base(Array)+w(5-lower bound), where w is the number of words per memory cell for the array	The memory address of fifth element of an array can be calculated by the formula
linear arrays	Which of the following data structures are indexed structures?
There must be mechanism to delete and/or insert elements in list	Which of the following is not the required condition for binary search algorithm?
binary search algorithm is not efficient when the data elements are more than 1000.	Which of the following is not a limitation of binary search algorithm?
matrix arrays	Two dimensional arrays are also called
P contains the address of an element in DATA	A variable P is called pointer if
Arrays	Which of the following data structure can't store the non-homogeneous data elements?
Records	Which of the following data structure store the non-homogeneous data elements?
all of above	Each data item in a record may be a group item composed of sub-items; those items which are indecomposable are called
All of above	The difference between linear array and a record is
pointers store the next data element of a list	Which of the following statement is false?
sorted singly linked list	Binary search algorithm can not be applied to
overflow	When new data are to be inserted into a data structure, but there is no available space; this situation is usually called
underflow	The situation when in a linked list START=NULL is
doubly linked list	Which of the following is two way list?
stacks	The term "push" and "pop" is related to the
Deque	A data structure where elements can be added or removed at either end but not in the middle
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Quick sort	Which of the following sorting algorithm is of divide-and-conquer type?
Recursion	An algorithm that calls itself directly or indirectly is known as
Zero	Value of the first linked list index is
an Integer	A linked list index is ___ that represents the position of a node in a linked list.
because initialization of data members of the LinkedList class is performed by the constructor of the LinkedList class.	Why is the constructor of the LinkedList class empty?
FIFO , First In First Out	form of access is used to add and remove nodes from a queue
LIFO	form of access is used to add and remove nodes from a stack
back	New nodes are added to the ___ of the queue.
queue linked list	A _____ is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
both of them	A _____ is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.
isEmpty()	The pop() member function determines if the stack is empty by calling the ___ member function
the new node is placed at the front of the linked list.	What happens when you push a new node onto a stack?
thread	In a binary tree, certain null entries are replaced by special pointers which point to nodes higher in the tree for efficiency. These special pointers are called
Binary search trees	The in order traversal of tree will yield a sorted listing of elements of tree in
Values in a node is greater than every value in children of it	In a Heap tree
all of above	In a graph if e=[u, v], Then u and v are called
All of above	A connected graph T without any cycles is called
B.e begins at u and ends at v C. u is processor and v is successor	In a graph if e=(u, v) means
complete	If every node u in G is adjacent to every other node v in G, A graph is said to be
O(n)	The complexity of linear search algorithm is
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appendNode()	What member function places a new node at the end of the linked list?
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Sequentially	Elements of an array are stored ____ in memory
Link	Each entry in a linked list is called a ____
3	How many parts are there in a declaration statement?
Stack	is the way you groups things together by placing one thing on top of another and then removing things one at a time from the top
All of the above	ushdown list means:
All operations are at one end	Which of the following is the feature of stack?
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delete a;	To delete a dynamically allocated array named `a`, the correct statement is
pointer-variable = malloc(sizeof(struct struct-name));	To create a linked list, we can allocate space and make something point to it, by writing: struct-name *pointer-variable; Which of the following statement will correctly allocate the space
a. size of variable name + b. size of (struct tag)	The size of a structure can be determined by
Accessing arrays or string elements	The reason for using pointer is ...
Placing a data item on top of the stack.	What is the "push"?
Removing a data item from the top of the stack.	What is "popping"?
Last-In-First-Out. A stack is a LIFO storage mechanism because the last item inserted is the first one to be removed.	Explain LIFO
It allows the user to read the value at the top of the stack with out removing it.	What is "peek"?
1. Read the characters from a string one at a time.	Explain how you would create an algorithm that matches delimiters on the stack. Include errors in your explanation.
...	Find and place the opening delimiters on the stack one at a time
...	When the program reads a closing delimiter from the input, pop the corresponding opening delimiter from the top of the stack
...	If the delimiters are not of the same type an error will occur, telling us that the string is missing either an opening or closing delimiter. If there is no opening delimiter on the stack an error will occur.
They are not inserted onto the stack; they are ignored.	What happens to non delimiter characters?
Methods.	Whatever you can do to manipulate the data storage structure becomes our:
In a queue the first item inserted is the first to be removed (FIFO). In a stack the last item inserted is the first to be removed (LIFO)	What is the difference between a stack and a queue?
It is a British reference to waiting in line. Fist in, first out.	Where does the term queue come from?
extend all the way down to index 0.	Unlike a stack, the items in a queue don't always:
It "peeks" at the value of the item at the front of the queue without removing it as opposed to the last value in a stack.	How is "peek" different in a queue?
Wrapping around allows the user to fill in new items in the queue at index zero, assuming that the queue is empty at index zero. This creates a broken sequence (the items in the queue are in two different sequences in the array).	What is wrapping around? When is it useful? What is created that must be fixed?
Delete enough items so that the Fron arrow wraps around. This creates a single contiguous sequence.	How can you fix a broken sequence? What is created?
A double-ended queue. You can insert items and either end & delete items from either end.	What is a deque?
A priority queue items are ordered by key value so that the item with the lowest key (or in some implementations the highest key) is always at the front. Items are inserted in the proper position to maintain the order.	How is a priority queue different than a queue?
You insert a letter from the postman into your pile of pending letters according to priority. The higher the priority the higher the position in the pile.	How does the mail sorting analogy apply to the priority queue?
Pro: Simple and appropriate when the # of items isn't high or insertion speed isn't critical.	What are the pros and cons of using a priority queue implemented by a simple array?
T	In a singly-linked list, these is no efficient way to insert node before a given node in the middle or at the end of the list
Store a waiting list of printing	which of the following applications may use a queue
sort is 0(n^2), best case it is O(n)	select the most correct statement