vu £lon musk file

vu £lon musk file

CS301 Quiz No.01 Solution Fall2021

For a perfect binary tree of height 4, what will be the sum of highest of node
26

If Ahmed is cousin of Ali and Ali is cousin of Asad then Ahmed is also cousin of Asad. Thisstatement has the following property
Transitivity

Suppose there are 100 elements in an equivalence class, so initially there will be 100
trees,the collection of these trees is called.
Forest

The percolate Down procedure will move the smaller value and bigger value.
Up,down

For a perfect binary tree of height h, having N nodes, the sum of height of nodes is
N-h-1

If we want to find median of 50 elements, then after applying builtHeap method, how
Manytime deleteMin method will be called?
25

The Expression
If(!heap-> isEmpty ())
Check
Heap is not empty

BY ORANGE MONKEY

Which of the following heap method increase the value if Key at position'p' by the
Amount'delta'?
Increase Key(p,delta)

Given the values are the array representation of heap;12 23 26 31 34 44 56 64 78 100
What is the 5th smallest element in the given heap?
34

Which of the following data structure linear type

All of above

in a program a reference variable with name 'x'can be declared as

int &'x;

Object (object oriented by pointers)are called anonymous object

Friend

in the perspective each process divided into……..section

4

In tree the search operation is……..as compared to the linked list

Very fast

vu £lon musk file

Level order transversal for binary tree search can be implemented……

Only through non recursive method

…….is an area in computer memory that is used to allocate memory dynamically

Stock

Suppose we want to create the right child of ‘p’and set the value x in it.which of the following statement is correct in this operation

Set Right (x,p)

In level order traversal for binary search tree of each level we visit node in……..order

Right to left

We can calculate the……..of a subtree counting the level from the bottom

Data items

A …….is a tree in which every level except possibly the last is completely filled

Complete binary tree

Which of the following calling method does not change the original value of variable passed to a function as an argument?

vu £lon musk file

Call by passing as value

The _____ of a binary tree is the maximum level of its leaves (also called the depth).
Select correct option:
Level
Width
Height
None of the above

Question # 2 of 10 (Start time: 06:40:41 PM) Total Marks: 1
If we write functions for recursive and non recursive inorder traversal method of BST, what will be the difference between its functions prototypes?
Select correct option:
Different return types
Different function names
Different arguments list
Nothing will be different

Question # 3 of 10 (Start time: 06:40:41 PM) Total Marks: 1
binary tree whose every node has either zero or two children is called _____
Select correct option:
Complete binary tree
Binary search tree
Strictly binary tree
None of above

Question # 4 of 10 (Start time: 06:40:41 PM) Total Marks: 1
Which one of the following calling method does not change the original value of the argument in the calling function?

Select correct option:
Call by passing reference of the argument
Call by passing the address of the argument
Call by passing the value of the argument
None of the given options

Question # 5 of 10 (Start time: 06:40:41 PM) Total Marks: 1
Longest path from root node to farthest leaf node is called _____ of tree
Select correct option:
Level
Length
Depth
Node level

Question # 6 of 10 (Start time: 06:40:41 PM) Total Marks: 1
Which of the following statement is false?
Select correct option:
Arrays are dense lists and static data structure
data elements in linked list need not be stored in adjecent space in memory
pointers store the next data element of a list
linked lists are collection of the nodes that contain information part and next pointer

The _____ of a node in a binary tree is defined as the height of its left subtree minus height of its right subtree.
Select correct option:
Height
Balance
Width
None of the above

A tree is an AVL tree if
Select correct option:
Any one node fulfills the AVL condition
At least half of the nodes fulfill the AVL condition
All the nodes fulfill the AVL condition
None of the given options

In a program a reference variable, say x, can be declared as
Select correct option:
int &x ;
int *x ;
int x ;
None of the given options

In which of the following functions, the value of variable cannot be changed in function body?
Select correct option:
int cube(int num)
int cube(int& num)
int cube(const int& num)
int cube(int* num)

What is the maximum depth of recursive calls a function may make?

n (where n is the argument)

Here is a small function definition:
void f(int i, int &k)
{

i = 1;
k = 2;
}

Suppose that a main program has two integer variables x and y, which are given the value 0. Then the main program calls f(x,y); What are the values of x and y after the function f finishes?

x is still 0, but y is now 2.

Write in postfix form 5 * (9 - 7)

5 9 7 - *

Which of the following is NOT true regarding the maze generation?

Remove a randomly chosen wall if the cells it separates are already in the same set

An array x of 100 integers is declared as

int x[100];

Local variables defined inside function body are _____ automatically at the end of function execution.

Created

Which of the following statement is NOT correct regarding Table ADT?

A table consists of deveral columns known as entities

In doubly linked list there is/are _____ pointer/s in each node.

Two

"new int[11]" will allocate memory for _____ integers.

11

If a tree has 20 edges/links, then the total number of nodes in the tree will be:

21

In the statement int& a=b;

b hold the address of variable a

Which of the following is NOT an open addressing technique to resolve collisions?

Double hashing

Consider the function X as under
int X (int& Value)
{
return Value;
}
Now a and b are integers in a calling function. Which one of the following is a valid call to the above function X?

a = X(*b);

For a perfect binary tree of height 4, What will be the sum of hights of nodes?

26

If unions are done by weight (size), the depth of any element is never greater than

$\log_2 n$

vu £lon musk file

Which of the following statement is NOT true for reference variable?

References can be uninitialized.

The tree data structure is a

Non-linear data structure

In singly linked list a node consists of two parts:

Object and pointer

The simplest case in a BST to delete a node is:

When the node, that is to be deleted is a leaf node

A binary tree with 24 internal nodes has _____ external nodes.

25

a * (b+c)-d is an example of _____ expression.

infix

given the values are the array representation of heap:
12 23 26 31 34 44 56 64 78 100
If we perform 4 deleteMin operations, the last element deleted is _____.

31

In _____, a programmer uses two pointers in the node, i.e. one to point to next node and the other to point to the previous node.

Linked list

Trying to remove an element from an empty stack is called _____ .

vu £lon musk file

Underflow of stack

For reference variables, _____ sign is used.

ampersand

Which property of equivalence relation is satisfied if we say:
Ahmad R(is related to) Ahmad

Reflexivity

Suppose there is an image segmented into pixels. Each pixel has _____ neighbour(s).

8

The most difficult case for deleting a node from Binary Search Tree is when the node to be deleted _____.

is Leaf node

When an executable program runs, it is loaded in the computer memory and becomes a _____ .

Process

If class A defines class B as its friend, then:

Class B can access private members of Class A

In the poat-order traversal of a binary search tree, nodes process as:

Left-subtree, Right-subtree, Root

The expression AB+C* is called?

Postfix expression

Binary Search can be categorized into which of following?

Divide and conquer

The main use of AVL tree is:

Storing of data

Select the one FALSE statement about binary trees:

Every binary tree has at least one node.

A table consists of several columns, known as

Fields

Each operator in a postfix expression refers to the previous _____ operand(s).

One

If there are 56 internal nodes in a binary tree then how many external nodes this binary tree will have?

57

Which of the following function don't belong to the stack class?

crash()

Which of the following statement is false?

Arrays are dense lists and static data structure

During union by size method, which data structure is used to improve the balancing of tree?

Array

Non-recursive calls are faster than which of the following calls?

vu £lon musk file

Recursive

Binary Search Tree voilates the condition of AVL tree when any node has balance equal to

0

Each node in Binary Search Tree has

2 pointers

What will be postfix expression of the following infix expression?
*Infix Expression: a+b*c-d*

abc*+d-

The balance of a node is the result of "height of left subtree" _____ "height of right subtree".

Minus

A complete binary tree having "N" nodes consists of _____ Levels.

$Log_2 (N+1) -1$

Consider a hash table of size seven, with starting index zero, and a hash function (3x + 4)mod7. Assuming the hash table is initially empty, which of the following is the contents of table when the sequence 1, 3, 8, 10 is inserted into the table using closed hashing? NOte that '_' denotes an empty location in the table.

1, 8, 10, _, _, _, 3

Which one of the following is known as "Last-In, First-Out" or LIFO Data Structure?

Stack

vu £lon musk file

Parameters in function call are passed using,

Stack

If we singly linked list to implement list, then there is an issue that it gives difficulty when we:

Move backward in the list

Which of the following is correct about AVL Tree?

It is identical to BST except height of the left and right subtrees can differ by at most 1.

Insertion in a linked list can be done at

Front, Back and somewhere in the middle

If the height of a perfect binary tree is 4. What will be the total number of nodes in it?

31

AVL tree is linear data structure.

TRUE

During the union by size method, all the array element initialized to -1 shows:

Initial condition of tree

Consider the following pseudo code
declare a stack of characters
while (there are more characters in the word to read)
{
read a character
push the character on the stack

vu £lon musk file

}
while (the stack is not empty)
{
pop a character off the stack
write the character to the screen
}
What is written to the screen for the input "apples"?

selppa

Consider the linked list having data [6, 72, 35, 65, 25] stored in it. While current pointer is pointing to memory location having 72 stored in it. After calling add(4) function on the following linked list current point will point to memory location having value?

4

One difference between a queue and a stack is

Queues use two ends of the structure, stacks use only one.

next() method of List class is used to:

Moves the current position forward one element

get(?) method of list class is used to:

Get element at the given position

If we want to find median of 50 elements, then after applying buildHeap methd, how many times deleteMin method will be called?

25

In simple or singly linked list there is/are _____ pointer/s in each node.

One

If we have 1000 sets each containing a single different person. Which of the following relation will be true on each set:

Reflexive

The total number of nodes on 10th level of a perfect binary tree are :

1024

If there are 100 elements in a heap, and 100 deleteMin operation are performed, will get _____ list.

Sorted

In simple implementation of stack, isFull() method is used due to _____.

Limitation of array

If a tree has 50 nodes, then the total edges/links in the tree will be:

49

Following is a keyword of C++ _____ .

Delete

In level-order traversal for Binary Search Tree, at each level, we visit the nodes in _____ order.

Left-to-right

To search an element in ALV tree, it takes maximum 1.88 Log2n time.

FALSE

If we want to find 3rd minimum element from an array of elements, then after applying buildHeap method, how many times deleteMin method will be called?

3

If there are N elements in an array then the number of maximum steps needed to find an element using Binary Search is _____.

log_2N

The _____ method of list data structure removes the element residing at the current position

Remove

Allocating and de-allocating memory for linked list nodes take _____ time than pre-allocated array.

More

In a tree, we link the nodes in such a way that it _____ a linear structure.

Forms

Longest path from root node to farthest leaf node is called _____ of tree.

Depth

In which of the following function signatures, the value of variable "num" cannot be changed in function body?

int cube(int num)

Binary search algorithem cannot be applied to _____ .

vu £lon musk file

sortrd linked list

The expression
if (! heap ->isFull())
check

Heap is not full

Which of the following is correct statement?

An AVL tree is identical to BST expect height of the left and right subtree can differ by at most 1.

The easiest case of deleting a node from BST is the case in which the node to be deleted _____.

Is a leaf node

Every AVL is _____.

Binary Search Tree

_____ is when function is calling to itself.

Recursion

For a perfect binary tree of height h, having N nodes, the sum of hights of nodes ia _____.

N - h - 1

The binary tree is the maximum level of its leaves (also called the depth).

Height

Which one of the following is NOT true regarding the skip list?

List Sh contains only the n special keys

Suppose we have been given the following data set for a Queue.
7 5 2 4
What will be the resultant Queue if we call enqueue(3) method?
Note that 7 is the front element whereas 4 is rear element of queue.

7 5 2 4 3

If there are N external nodes in a binary tree then what will be the no. of internal nodes in this binary tree?

N -1

int htdiff = height(root->getLeft()) _____ height(root->getRight());
The above line of code is taken from AVL insert method.
Complete it by selecting an appropriate symbol.

-

Which of the following can be used to reverse a string value?

Stack

The next field in the last node of a singly-linked list is set to _____.

'NULL

If there are N internal nodes in a binary tree then what will be the no. of external nodes in this binary tree?

N +1

A hash function returns a _____ value.

Integer

vu £lon musk file

The union operation is based on size or weight but the reducing the in-between links or path compression from _____ to the _____ is done by the find method.

nodes, root

If there are 23 external nodes in a binary tree then what will be the no. of internal nodes in this binary tree?

22

_____ in AVL is logarithmic.

Searching

In case of insertion of right inner node in BST,

we need to apply single left rotation to make it AVL tree.

Consider the following infix expression.
7/8 + 9
If one converts the above expression into postfix. What would be the resultant expression?

7 8 9 / +

What are the basic things associated with data structures?

All of the given

Which of the following properties are satisfied by Equivalence relationship?

Reflexive, Symmetric and Transitive

For compiler, a postfix expression is easier to evaluate than infix expression?

vu £lon musk file

True

The expression DE+H* is called _____.

Hybrid expression

Consider the following expression:
x - y * a + b / c
Which of the following is a correct equivalent expression for the above?

x y a * - b c / +

In the call by _____ methodology, a copy of the object is passed to the called function.

Value

There are four cases of rotation is an _____ tree.

AVL

In singly linked list which node will keep track of starting position of the list.

Next Node

The depth of a binary tree is

Maximum level of a leaf

What will be the value of root of an AVL and BST if built from the same data?

Root of AVL is square of root of BST

In 1990, Bill pugh proposed an enhancement on linked lists and the new data structure was termed as

vu £lon musk file

Skip list

Avl tree takes maximum _____ time to search an element.

1.44 Log2n

Can we store elements with different data types in a single array?

Yes

The _____ of a node in a binary tree is defined as the height of its left subtree minus height of its right subtree.

Balance

What is the depth of any tree if the union operation is performed by height?

O(log N)

If a hash function returns 4 for more than one value, this condition is called _____.

Collision

Which one of the following calling methods does not change the original value of the argument in the calling function?

Call by passing the value of the argument

Every AVL tree is a binary search tree.

TRUE

The difference between a "Binary Tree (BT)" and a "Binary Search Tree (BST)" is that,

In BST nodes are inserted based on the values they contain

vu £lon musk file

The worst case of searching in binary search tree (BST) is:

When the data inserted in BST is sorted

Suppose there are 100 elements in an equivalence class, so initially there will be 100 trees. The collection of these trees is called

Forest

Factorial is an example of _____ function.

Recusive

Suppose a hash function returns 6 for the given value. At which indexof array the value will be saved?

6

A binary tree of N nodes has _____ .

Log_2 N levels

Every AVL is _____.

Binary Search Tree

If Ahmad is cousin of Ali and Ali is cousin of Asad then Ahmad is also cousin of Asad. This statement has the following property

Transitivity

What is the time complexity of binary search with iteration?

O(logn)

A solution is said to be efficient if it solves the problem within its resource constraints i.e. hardware and time.

True

vu £lon musk file

Searching an element in an AVL tree takes maximum _____ time (where n is number of nodes in AVL tree).

1.44 Log_2n

Which of the following is not a form of exoression?

Pastfix

Heap can be used to implement

Priority Queue

Sorting procedure normally takes _____ time.

NLogN

Consider we have performed the following operations on stack of size 5.
Push(10);
Push(20);
Push(30);
Pop();
Pop();
Push(40);

20

Which one of the following is NOT the property of equivalence relation?

Associative

What is the hash function used in linear probing?

hi(x)= (hash(x)+ f(i)) mod table size

Recursive call of a function use _____ data structure.

vu £lon musk file

Stack

Left, right, info, and parent are the operation of _____ data structure.

Tree

For Binary Search Tree, we call the findMax() method as _____.

findMin(tree->getLeft())

From Operating System point of view, the recursive function calls are made with the help of _____.

Stack

Which of the following is true regarding the maze generation?

All of the given

If there are 100 elements in an equivalence class then we will have _____ sets initially.

100

given the values are the array representation of heap: 12 23 26 31 34 44 56 64 78 100
What is the 5th smallest element in the given heap?

34

Which operation of queue data structure is used to get front element from the queue and then remove it from the queue?

enqueue()

vu £lon musk file

_____ is an area in computer memory that is allocated dynamically.

Heap

The tree structure is a

Non-linear data structure

Binary Tree traversal can be performed with the help of _____ .

Both Recursive and Non-recursive calls

New items are added at the _____ of the stack.

Top

Leaf node of binary search tree contains _____.

All of the given

Suppose there are a set of fruits and a set of vegetables. Both sets are _____ sets.

Disjoint

Which of the following operations returns "most recently entered value" from the stack?

Top

back() method of list class is used to:

Moves the "current" pointer to backward one element.

Stack and Queue can be implemented using _____.

Singly Link List

vu £lon musk file

The array in binary search is sub divided _____.

Untill a sublist is no more divisible

Which of the following heap method lowers the value of key at position 'p' by the amount 'delta'?

decreaseKey(p,delta)

What will be the postfix expression of following infix expression?
A*B/C+D-E

A B + C D / + E -

An efficient program executes faster and helps in _____ the usage of resources like memory and disk.

Maximizing

Array cells are _____ in computer memory.

Contiguous

Suppose there is an image of 7 * 7, now we will have matrix of _____ rows and _____ columns.

7, 7

An array is a group of _____ memory locations.

Consecutive

for every process executing, the last part of the memory is for _____ of the program.

Heap

vu £lon musk file

What will be the postfix expression of following infix expression?
D+E*F/G

DEF*G/+

The expression
if (! heap ->isEmpty())
checks

Heap is not empty

_____ is used for Reference variables in C++.

&

For searching a particular number in Binary Search Tree (if it is not present), the maximum number of comparisons will be _____ comparison at each level.

2

Suppose n is the number of nodes in a complete Binary Tree, then maximum steps required for a search operation are

$Log_2 (n+1) -1$

If we use array to implement list, then there is an issue that it gives difficulty when:

We will increase its size

Consider the following function:

```
void test_a(int n)
{
cout << n << " ";
if (n>0)
test_a(n-2);
```

vu £lon musk file

}
What is printed by the call test_a(4)?

4 2 0

Doubly Linked List always has _____ NULL pointer/s in a node.

Two

The percolateDown procedure will move the smaller value _____ and bigger value _____.

up, down

What will be the result of evaluation following expression?
5+3*2/(6-3)

7

_____ only removes items in reverse order as they were entered.

Stack

Linked list always contains elements that can be described as,

Self-referential

What will be postfix expression of the following infix expression?
Infix Expression: a+b*c-d

abc*+d-

In tree, the search operation is _____ as compared to the linked list.

Very fast

vu £lon musk file

Each node in doubly link list has

1 pointer

Which of the is NOT true regarding the maze generation?

Remove a randomly chosen wall if the cells it separates are already in same set

The new operation in C++ for dynamically allocating memory returns,

Pointer to the memory it has allocated

Which of the following applications may use a stack?

Parentheses balancing program

Which one of the following statement is correct?

Array size is fixed once it is created

What will be result of following postfix expression?

1 2 3 * + 2 -

4

When we compare recursive method calls and non-recursive method calls, following statement is true.

Recursion is implementted in the same way as other functioncalls are implemented

A queue where the dequeue operation does not depend upon FIFO, is called:

Priority queue

vu £lon musk file

A Linear Data Structure is the data structure in which data elements are arranged in a sequence or a linear list. Which of the following is Non Linear Data Structure?

Binary Search Trees

_____ is the stack characteristic but _____ was implemented because of the size limitation of the array.

isEmpty(), isFull()

Y = &x[0];
In the above statement, we get address of the first location of the array x and store
it in y. Here "y" is:

lvalue

Each node in singly link list has,

1 pointer

If ahmad is boss of ehsan and ehsan is boss of umer then ahmad is also boss of umer.
The above mentioned relation is _____.

Transitive

Which of the following possible operation are performed on Table ADT?

Insert, Find, Remove

Which of the following operation returns but do not removes top value of the stack?

top

vu £lon musk file

While implementing non-recusive traversal for Binary SearchTree, we need to implement _____ .

Stack

~BinarySearchTree() is a _____ .

Constructor

Which property of equivalence relation is satisfied if we say: Ahmad is cousin of Ali and Ali is also cousin of Ahmad

Symmetry

The total number of nodes on 5th level of a perfect binary tree are :

32

In C++, we place the class interface in _____ file.

.cpp

The variables which are destroyed automatically when a function's execution ends are:

Local variables defined inside function body

If the elements are 3, 5, 1,6in which order they will be removed from the queue one by one

3516

The……..of a binary tree is a maximum level of its leaves (also the depth).

height

vu £lon musk file

……of the an empty AVL tree is define to be

Height

Following is the keyword of c++

Delete

In the perspective of memory organization every process expecting the first part of memory is for…..of the program.

code

The……..of a node in a binary tree is define as the height of its left subtree minus height of its right subtree.

balance

If p is pointing to a node in an existing tree then info (p)means

Return the content of node p.

Following is a keyword of c++……

Delete

Every…….tree is a binary search tree

AVL

If a function has recursive call as last statement it is known as……

Tail recursive

vu £lon musk file

During in a order traversal call if we found a node is null it means this node will satisfy following condition

it will not have left child

In binary search tree deleting a node is easy if it is a…… node

Root

Which of the following operation returns the content of binary tree node?

Info (p)

14. 1 2 6
5 8
3
4

1 2 3 4 5 6 8

in a complete binary tree the number of node of level 5 are

30

One should be careful about transient…….that are stored by reference I data structure

Objects

In a tree we link the node in such a way that it……..a linear structure

does not remain

vu £lon musk file

the function call are mode with the help of……..

stack

18. 15 25 45
35 75

15 35 25 75 45

A binary is said to be a……binary tree if every non leaf node in binary tree has non empty left and right structure

Strictly

In which of the following function signature the value of variable num cannot be changed in function body

Binary search tree

Two common method of simulations are……are…….

Time based simulation and event based simulation

Generally there are case (s)to delete a node from BST

1

When a function calls another function the parameters and address of the calling function are put in…

Stock

Binary search tree ()is a…….

Destructor

We can calculate the…….of subtree by counting its level from the bottom

Nodes

If there is a strictly complete binary tree of depth 3 the total number of nodes it will be

7

A …….model attempt to model real word phenomenon

Simulation

The process of getting the value of a variable using a pointer is called

Dereferencing

When a function calling itself is called as……..

Recursion

A……is a tree in which every except possibly the last, is completely filled

Strict binary tree

In AVL tree during insertion, a single rotation can fix the balance in cases _____ and 4.

1

vu £lon musk file

If a node is inserted in outer side of a node in binary search tree then to make it AVL tree,

We may have to apply single rotation

A zigzag rotation is performed. In Left-Left case of rotation in AVL tree.

False

The principal benefit of a linked list over a conventional array is that the order of the linked items may be_____ from the order that the data items are stored in memory.

Same

Stack.push(15) will push 15 on _____.

Top of the stack

Suppose we have the following values to be inserted in constructing AVL tree,

10,13,15,5,7,8

Tell when first rotation will take place,

After inserting the node 15

All the objects created using _____ operator have to be explicitly destroyed using the delete operator.

New

During the execution of a process, operating system constructs four things for that process. Which of the following is not part of that process?

Linked list

There are _____cases of Rotation in AVL tree.

4

Which of the following line of code is incorrect?

Float *I = float new (not confirmed)

In simple or singly linked list there is/are _____ pointer/s in each node.

One

Suppose there are three nodes tree with three numbers 14, 4, 15. Following is not a permutation, or combination for output them.

(4, 4, 15)

The type of expression in which operator succeeds its operands is_____expression.

Postfix

The _____ of a node in a binary tree is defined as the height of its left subtree minus height of its right subtree.

Balance

If both left and right nodes of a node are NULL then this type of node is called a _____ node.

Non leaf (not confirmed)

The function calls are made with the help of_____.

Stack

Which data structure is needed to convert infix expression to postfix expression?

Stack

In case of insertion of right inner node in BST,

Left rotation then right to make AVL

A BST generated from the data in ascending order is _____.

Linear

Which operation of queue data structure is used to get front element from the queue and then remove it from the queue?

Remove ()

In _____ various cells of memory are not located continuously.

Linked list

The _____ method of list will position the currentNode and lastCurrentNode at the start of the list.

Start

Which operation of queue data structure is used to insert an element into the Queue?

Enqueuer ()

From Operating System point of view, the recursive function calls are made with the help of _____.

Queue

vu £lon musk file

We can make a lexicographic order of characters based on their _____.

ASCII values

What are the basic things associated with data structures?

All of the above

Consider the following push operations of a Stack:

Stack.push(4);

Stack.push(6);

Stack.push(5);

Stack.push(8);

If a user calls a pop() operation, then which value will be returned?

8 (stack is last in fist out)

~BinarySearchTree( ) is a _____.

Destructor

Array cells are _____ in computer memory.

Contiguous

Leaf node of binary search tree contains _____

One Null Pointer

dequeue() operation of queue data structure is used to_____

remove an element from the front and return it

vu £lon musk file

The depth of a binary tree is

Maximum level of a leaf

Which of the following operation returns but do not removes top value of the stack?

Top

Which of the following data structure is linear type?

All of above

In doubly linked list a node consists of three parts:

2 pointers and 1 object

Last node in circular linked list contains

No null pointer

A_____ model attempts to model a real-world phenomenon

Simulation

Factorial is an example of _____function.

Recursive

The balance of a node in a binary tree is defined as the height of its _____ sub tree minus height of its right sub tree.

Left

In case of insertion of left outer node in BST,

We first apply left rotation and then rotation to make it an AVL Tree.

int htdiff = height(root->getLeft()) height(root->getRight()); The above line of code is taken from AVL insert method. Complete it by selecting an appropriate symbol.

Minus (-)

Each operator in a postfix expression refers to the previous _____ operand(s).

Two

For making Binary Search Tree for Strings we need, _____ data type.

Int

A _____model attempts to model a real-world phenomenon

Simulation

The lifetime of a transient object cannot exceed that of the application.

True

Which one of the following calling method does not change the original value of the argument in the calling function?

Call by passing the value of the argument

In level-order traversal for Binary Search Tree, we visit the nodes at each level before proceeding to the next level, in a _____ order.

Left-to-right

In doubly linked list a node consists of three parts:

1 pointer and 2 objects

Binary Search Tree voilates the condition of AVL tree when any node has balance equal to

1 or -1

To search an element in ALV tree, it takes maximum 1.88 Log 2n time

True

HOW many cases of rotation are there in AVL tree?

4

_____ tree has been named after two persons Adelson-Velskii and Landis.

AVL

Which of the following is a nonlinear data structure?

Tree

AVL tree is nonlinear data structure.

True

_____ is when function is calling to itself.

Recursion

Which of the following function don't belongs to the stack class?

Crash ()

Which one is the cored function call for the following function of calculating cube?

int cube(int& num)

cube (num)

Binary search algorithm cannot be applied to ____

None of the given

copy() method of list data structure _____

Set one list to be a copy of another

While implementing non-recursive traversal for Binary Search Tree, we need to implement

Stack

Following is true in case of using Recursive method calls

The code becomes very short

_____is a self-balancing tree.

Binary Search Tree

While implementing stack with an array and to achieve LIFO behavior, we used push and pop elements at

The start of the array

Generalized code written for a class is called

Structure

Army cells are _____ in computer memory

Contiguous

In singly linked list a node comprises of _____ field/s.

Two

Which of the following statement is false?

Pointers store the next data element of a list

Leaf node of binary search tree contains _____

One null Pointer

What will be the result of evaluating following expression?
5+3*2/(6-3)

7

Want and de-allocatmg memory for linked lest nodes does take hrne than pre-allocated array

MORE

Suppose you are writing a class for Node class and forgot to write the constructor of the class, then

Compiler will automatically generate a default constructor

Factorial is an example of _____function.

Recursive

A binary tree is said to be a _____ binary tree if every non-leaf node in a binary tree has non-empty left and right subtrees.

Strictly

Memory address is stored in

Pointer

In level-order traversal for Binary Search Tree, _____ data structure is used.

Queue

Which of the following is the correct option for priority Queue?

The type of queues that is FIFO i.e. the person who comes first should leave first.

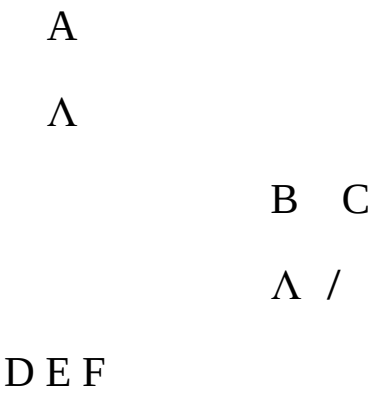
AVL tree is linear data structure.

False

AVL tree is a binary search tree

True

The post order traversal of a binary tree is DEBFCA. Find out the pre order traversal



ABDCEF

In a tree, we link the nodes in such a way that it _____ a linear structure.

Does not remain

add(12) method of linked list class will:

Add 12 as value in linked list

Which of the following is the correct conversion of infix to postfix expression?

Z+B-(D-H)/K

ZB+DH-K/-

In singly linked list “next” field of node contains:

Address of next node

Which of the following line of code is incorrect?

The lifetime of a transient object can exceed that of the application which is accessing it.

A list is the collection of items of the _____

same type

back() method of List class is used to:

Moves the “current” pointer to backward one element.

Suppose you are writing a class for Node class and forgot to write the constructor of the class, then

_____ is the maximum height of the AVL tree.

1.44log2n

length() method of List class is used to:

Return the length of the list

There are four cases of rotation in an _____ tree.

AVL

Allocating and de-allocating memory for linked list nodes does take _____ time than pre-allocated array.

More

_____ is utilized at the time of memory allocation in dynamic manner.

Heap

In which case of insertion we require double rotation to make the AVL tree balance.

None

The back() method decreases the value of variable current by _____.

One

In array list the worst case of removing an element is

To remove the item from start

Left, right, info, and parent are the operations of _____ data structure.

Tree

Which of the following is TRUE for search operations in a binary tree as compared to linked list or an array?

It increase the number of comparison

Which of the following is a correct statement?

An AVL tree is identical to BST except the height of left and right subtree can differ by at least 1

length() method of List class is used to:

Return the length of the list

Whenever we call a function, the compiler makes a stack, the top element of the stack is _____ of the function.

Return Address

Whenever we call a function, the compiler makes a _____ that it uses to fulfill this function call.

Stack

_____ is the major factor to see the efficiency of a program.

Time

_____ rule applies for evaluating operators of same precedence in an expression

None

The postfix form of the expression A + B * C and (A + B) * C will be _____.

Same

If we use array to implement list, then there is an issue that it gives difficulty when:

We will access value randomly

During in-order traversal using recursive calls, if we found a node is NULL. It means this node will satisfy following condition.

It will not have left child

Which one the following is more closer to AVL tree, (chose the best option)

Binary Search Tree

start() method of List class is used to:

Move the current pointer to first element

Consider the following infix expression.7/8 + 9

If one converts the above expression into postfix, what would be the resultant expression?

78/9+

In internal memory organization of a process, there is some area of memory for static data that holds _____ variables.

Both Static and Global

In Left-Right case of rotation in _____ tree. A double rotation is performed.

AVL

If numbers 5, 222, 4, 48 are inserted in a queue, which one will be removed first?

5

Which one is not the property of binary tree?

Sibling node should be same parent (Not Sure)

Each node in singly linked list contains_____

One Pointers

What's wrong with following loop? while((i < 10) && (i > 24)) { }

The Condition is always false

Which one of the following is TRUE about recursion?

1. Recursive function calls consume a lot of memory.
2. Recursion extensively uses stack memory.
3. Recursion extensively uses stack memory.
4. Iteration is more efficient than iteration.

Which of the following is not a data structure ?

1. Linked list
2. Queue
3. stack
4. Memory cell

"+" is a _____operator.

1. Unary
2. Binary
3. Ternary
4. None of the above

When an executable program run, it is loaded in the memory and becomes a_____.

1. Thread
2. .h file
3. Process
4. None of the above

www.vustudents.ning.com

vu £lon musk file

In array list the worst case of removing an element is
1. To remove an element from the end of the list
2. To remove an element from the middle of the list
3. To remove an element from the start of the list
4. We cannot remove element from an array list

The tree data structure is a

1. Linear data structure
2. Graphical data structure
3. Non-linear data structure (Not Confirm)
4. Data structure like queue

In_____, a programmer uses two pointers in the node, i.e. one to point to next node and the other to point to the previous node.

1. Linked list
2. doubly-link list
3. array
4. Structure

Each operator in a postfix expression refers to the previous _____ operand(s)

1. one
2. two
3. three
4. four

Which of the following operations returns top value of the stack?

vu £lon musk file

1. push
2. pop
3. top
4. First

In the calling function, after the execution of the function called, the program continues its execution form the _____after the function call.

1. Previous line
2. Next line
3. Beginning
4. None of the above

_____ only removes items in reverse order as they were entered.

1. Queue
2. Stack
3. Both of these
4. None of these

In the linked list implementation of the stack class, where does the push member function places the new entry on the linked list?

1. After all other entries that are greater than the new entry.
2. At the head
3. After all other entries that are smaller than the new entry.
4. At the tail

Which of the following is known as "Last-In, First-Out" or LIFO Data Structure?

1. Linked List
2. Stack
3. Queue
4. Tree

A queue is a _____data structure, whereas a stack is a _____data structure.

1. FIFO, LIFO

Each node in doubly link list has

1. 2
2. 3
3. 4

Whenever we call a function, the compiler makes a stack, the top element of the stack is _____ of the function

1. First argument
2. Return address
3. Last argument
4. none of the obove

_____ is the stack characteristic but _____was implemented because of the size limitation of the array.

BY ORANGE MONKEY

1. isFull(),isEmpty()
2. pop(), push()
3. isEmpty() , isFull()

Stack and Queue can be implemented using _____,

1. Singly Link List
2. Binary Tree
3. Binary Search Tree
4. AVL Tree

The _____ method of list will position the currentNode and lastCurrentNode at the start of the list.

1. Remove
2. next
3. start
4. back

In array list the worst case of removing an element is

1. To remove an element from the end of the lis
2. To remove an element from the middle of the list
3. To remove an element from the start of the list
4. We cannot remove element from an array list

STL is a _____ that is a part of the official standard of C++.

1. C program file
2. .h file

When an executable program run, it is loaded in the memory and becomes a_____.

vu £lon musk file

1. Thread
2. .h file
3. Process
4. None of the above

Each node in doubly link list has,

1. pointer
2. pointers
3. pointers
4. pointer

A queue is a _____data structure, whereas a stack is a _____data structure.

1. FIFO, LIFO
2. LIFO,FIFO
3. both of these
4. none of these

Which one of the following is TRUE about recursion?

1. Recursive function calls consume a lot of memory.
2. Recursion extensively uses stack memory.
3. Recursion extensively uses stack memory.
4. Iteration is more efficient than iteration.

To create a _____ we link the last node with the first node in the list.

vu £lon musk file

1. Double linked list
2. Circularly-linked list
3. Linked list
4. None of the above

_____ is the stack characteristic but _____was implemented because of the size limitation of the array.

1. isFull(),isEmpty()
2. pop(), push()
3. isEmpty() , isFull()
4. push(),pop()

The principal benefit of a linked list over a conventional array is that the order of the linked items may be_____ from the order that the data items are stored in memory.

1. Same
2. Identical
3. Different
4. Equivalent

In_____ the ‘next’ returns false when it reaches to the last node due to the fact that the next field of the last node is set to NULL.

1. Circular linked list
2. Triple linked list
3. Singly linked list

vu £lon musk file

4. None of the above

If numbers 5, 222, 4, 48 are inserted in a queue, which one will be removed first?

1. 48
2. 4
3. 333
4. 5

Which boolean expression indicates whether the numbers in two nodes (p and q) are the same. Assume that neither p nor q is null.

1. p == q
2. p.data == q.data
3. p.nextNode == q. nextNode
4. p.data == q

Local variables of a function are stored in,

1. Binary Search Tree
2. Stack
3. Queue
4. AVL Tree

A queue is a data structure where elements are

1. inserted at the front and removed from the back.
2. inserted and removed from the top.
3. inserted at the back and removed from the front.

vu £lon musk file

4. inserted and removed from both ends.

A kind of expressions where the operator is present between two operands called _____expressions.

1. Infix
2. Postfix
3. Prefix
4. None of the above

A template is a function or class that is written with a _____data type.

1. Specific
2. Definite
3. Generic
4. None of the above.

Whenever we call a function, the compiler makes a stack, the top element of the stack is _____ of the function.

1. First argument
2. Return address
3. Last argument
4. None of the above

Which of the following can be used to reverse a string value,

vu £lon musk file

1. Stack
2. Queue
3. Both of these
4. None of these

A queue is a _____data structure, whereas a stack is a _____data structure.

1. FIFO, LIFO
2. LIFO,FIFO
3. both of these
4. none of these

Stack and Queue can be implemented using _____,

1. Singly Link List
2. Binary Tree
3. Binary Search Tree
4. AVL Tree

Which of the following is not a data structure ?

1. Linked list
2. Stack
3. Queue
4. Memory cell

Compiler uses which one of the following in Function calls,

1. Stack

vu £lon musk file

2. Queue
3. Binary Search Tree
4. AVL Tree

The principal benefit of a linked list over a conventional array is that the order of the linked items may be_____ from the order that the data items are stored in memory.

1. Same
2. Identical
3. Different
4. Equivalent

Doubly Linked List always has one NULL pointer.

1. True
2. False

We cannot remove items randomly from _____

1. Stack
2. Queue
3. Both of these
4. None of these

_____ is the maximum number of nodes that you can have on a stack-linked list ?

1. Zero
2. 2n (where n is the number of nodes in linked list)
3. Any Number
4. None of these

vu £lon musk file

"+" is a _____operator.

1. Unary
2. Binary
3. Ternary
4. None of the above

In_____, a programmer uses two pointers in the node, i.e. one to point to next node and the other to point to the previous node.

1. Linked list
2. doubly-link list
3. array
4. structure

A queue is a data structure where elements are

1. inserted at the front and removed from the back.
2. inserted and removed from the top.
3. inserted at the back and removed from the front.
4. inserted and removed from both ends.

_____ is the stack characteristic but _____was implemented because of the size limitation of the array.

1. isFull(),isEmpty()
2. pop(), push()
3. isEmpty() , isFull()
4. push(),pop()

The _____ method of list will position the currentNode and lastCurrentNode at the start of the list.

1. Remove
2. Next
3. Start
4. Back

Parameters in function call are passed using,

1. Stack
2. Queue
3. Binary Search Tree
4. AVL Tree

If numbers 5, 222, 4, 48 are inserted in a queue, which one will be removed first?

1. 48
2. 4
3. 333
4. 5

For a perfect binary tree of height 4, what will be the sum of highest of node

1. 31
2. 30
3. 27
4. 26

If Ahmed is cousin of Ali and Ali is cousin of Asad then Ahmed is also cousin of Asad. Thisstatement has the following property

1. Reflexivity

vu £lon musk file

2. Symmetry
3. Transitivity
4. All of the above

Which one of the following is NOT the property of equivalence relation?

1. Reflexive
2. Symmetric
3. Transitive
4. Associative

The main reason of using heap in priority queue is

1. Improve performance
2. Code readable
3. Less code
4. Heap can’t be used in priority queues

The total numbers of nodes on 10th level of perfect binary tree are

1. 256
2. 512
3. 1024
4. Can’t be determined

Suppose there are 100 elements in an equivalence class, so initially there will be 100 trees,the collection of these trees is called _____.

1. Cluster
2. Class
3. Forest
4. Bunch

The percolate Down procedure will move the smaller value and bigger value.

1. Left, right
2. Right, left
3. Down, up
4. Up, down

For a perfect binary tree of height h, having N nodes, the Sum of height of nodes is

1. N - h -1
2. N - 1
3. N - 1 + h
4. N - (h - 1)

Which of the following method is helpful in creating the heap at once?

1. Insert
2. Add
3. Update
4. percolateDown

If ahmad is boss of ehsan and ehsan is boss of umer then ahmad is also boss of
umer, theabove-mentioned relation is_____ .

1. Reflexive
2. Symmetry
3. Transitive
4. None of given

If we want to find median of 50 elements, then after applying builtHeap method, how manytime deleteMin method will be called?

vu £lon musk file

1. 5
2. 25
3. 35
4. 50

Which of the following properties are satisfied by equivalence relationship?

1. Reflexive, symmetric
2. Reflexive, transitive
3. Symmetric, transitive
4. Reflexive, symmetric and transitive

Sorting procedure normally takes___ time.

1. NlogN
2. 2N
3. N*N*N
4. N

15. The Expression
if (! heap->isFull())
Check

1. Heap is empty
2. Heap is full
3. Heap is not empty
4. Heap is not full

The Expression
if (! heap->isEmpty())
Check

1. Heap is empty
2. Heap is full

vu £lon musk file

3. Heap is not empty
4. Not a valid expression

Given the values are the array representation of heap:12 23 26 31 34 44 56 64 78
100 If we perform 4 deleteMin operation, the last element deleted is_____ .

1. 31
2. 34
3. 44
4. 56

Which of the following heap method increase the value if key at position ‘p’ by the amount‘delta’?

1. increaseKey(p, delta)
2. decreaseKey(p, delta)
3. percolateDown(p, delta)
4. remove(p, delta)

Which of the following heap method lowers the value if key at position ‘p’ by the amount ‘delta’?

1. increaseKey(p, delta)
2. decreaseKey(p, delta)
3. percolateDown(p, delta)
4. remove(p, delta)

Which property of equivalence relation is satisfied if we say: Ahmad R(is related to)Ahmad

1. Reflexivity
2. Symmetry
3. Transitivity
4. All of Above

vu £lon musk file

Given the values are the array representation of heap;12 23 26 31 34 44 56 64 78 100 What is the 5th smallest element in the given heap?

1. 31
2. 34
3. 44
4. 56

vu £lon musk file