**CS301 Grand Quiz Solution File**

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

1

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

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

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

                                  A

                                  Ʌ

                                                       B    C

                                                       Ʌ   ̸

                              D E F

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