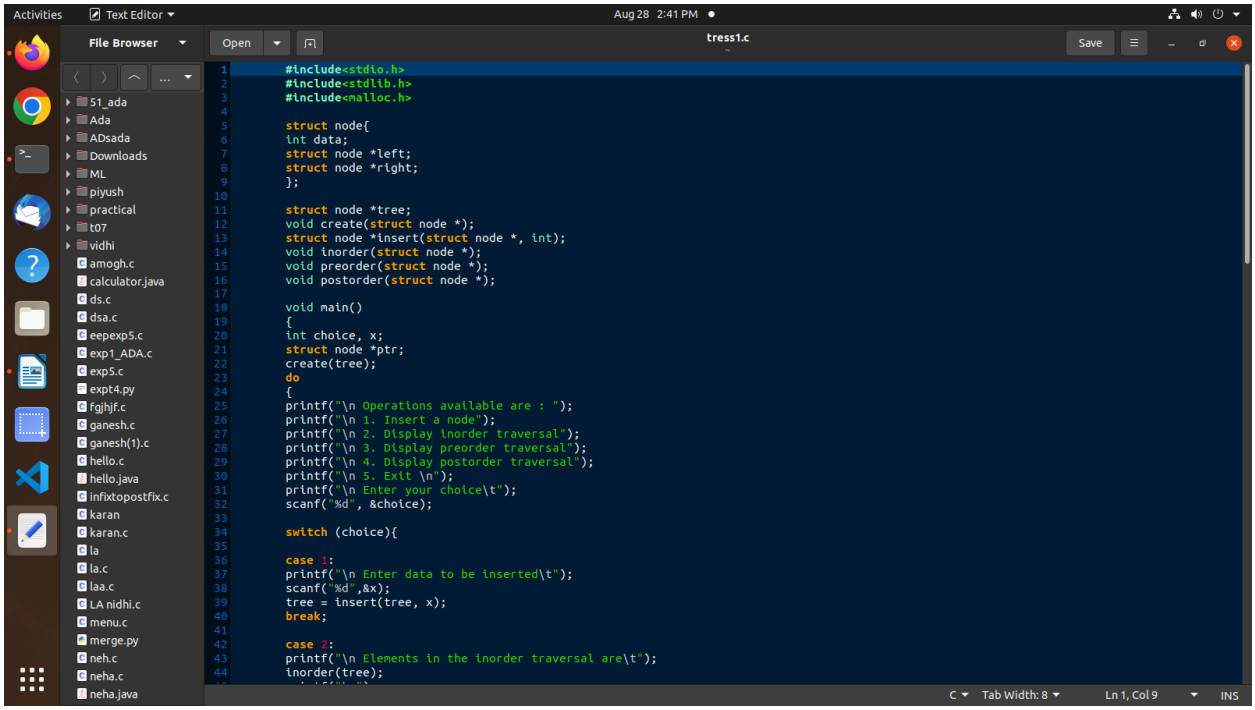
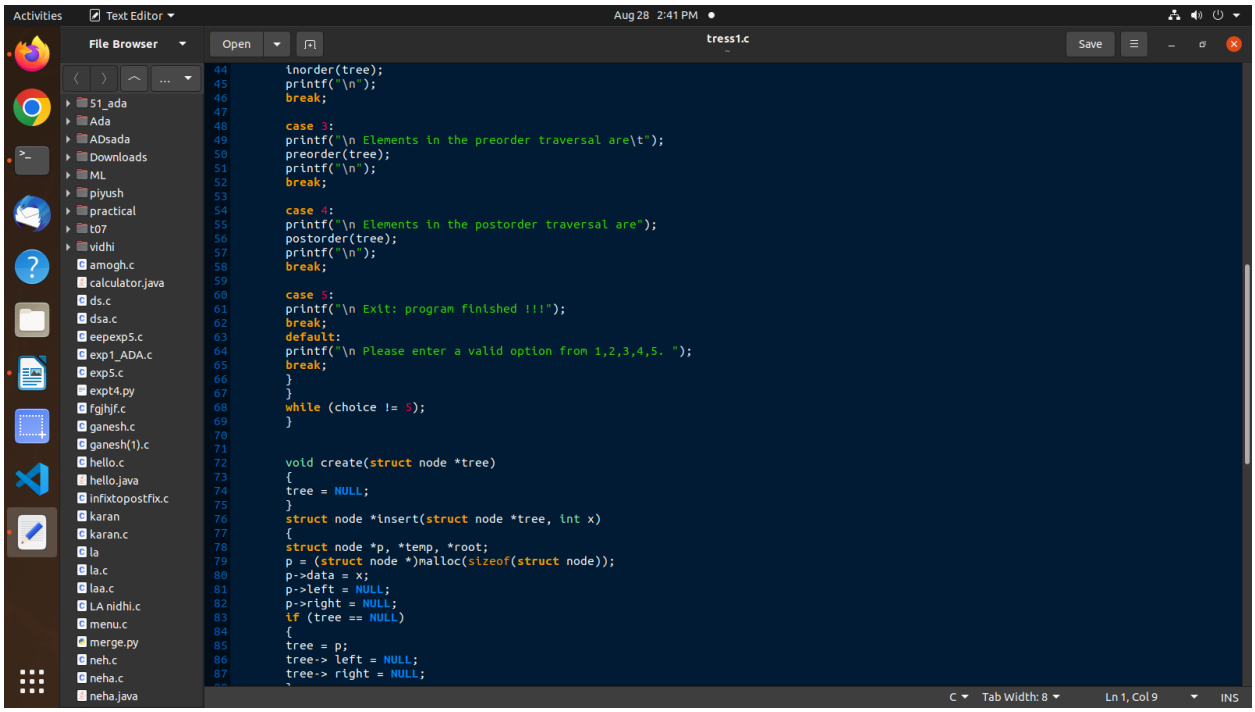
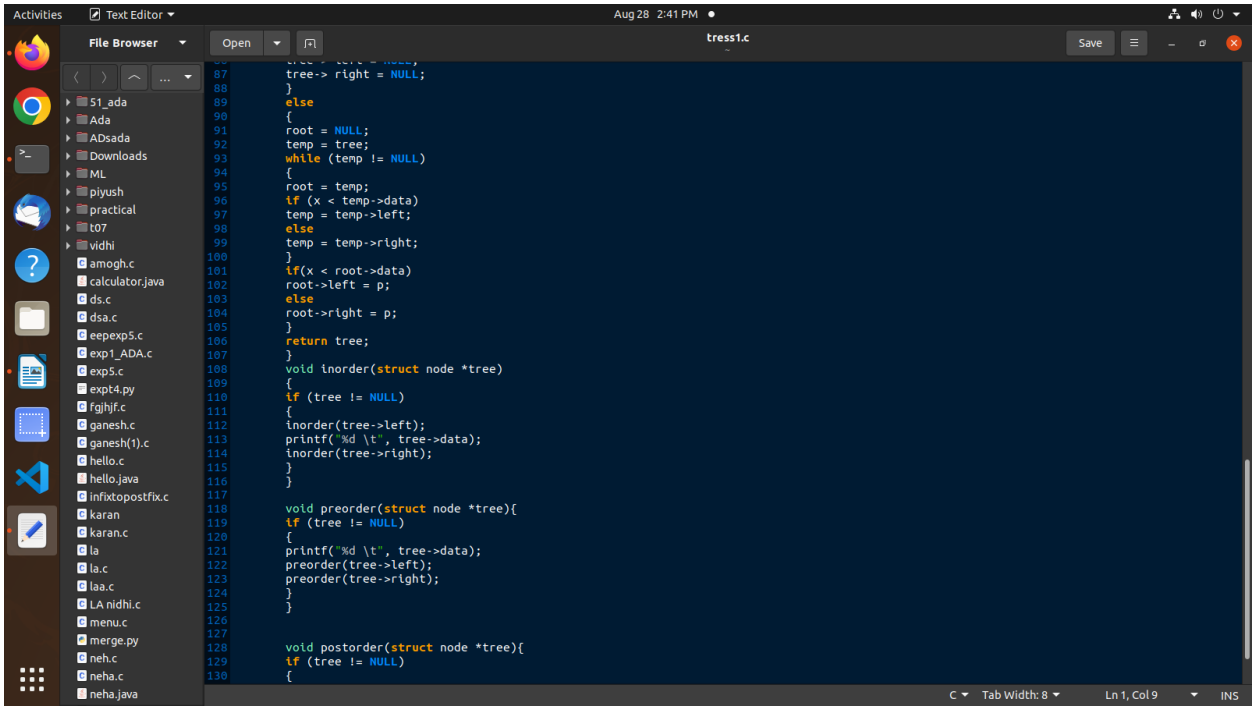
EXPERIMENT NO 6 :

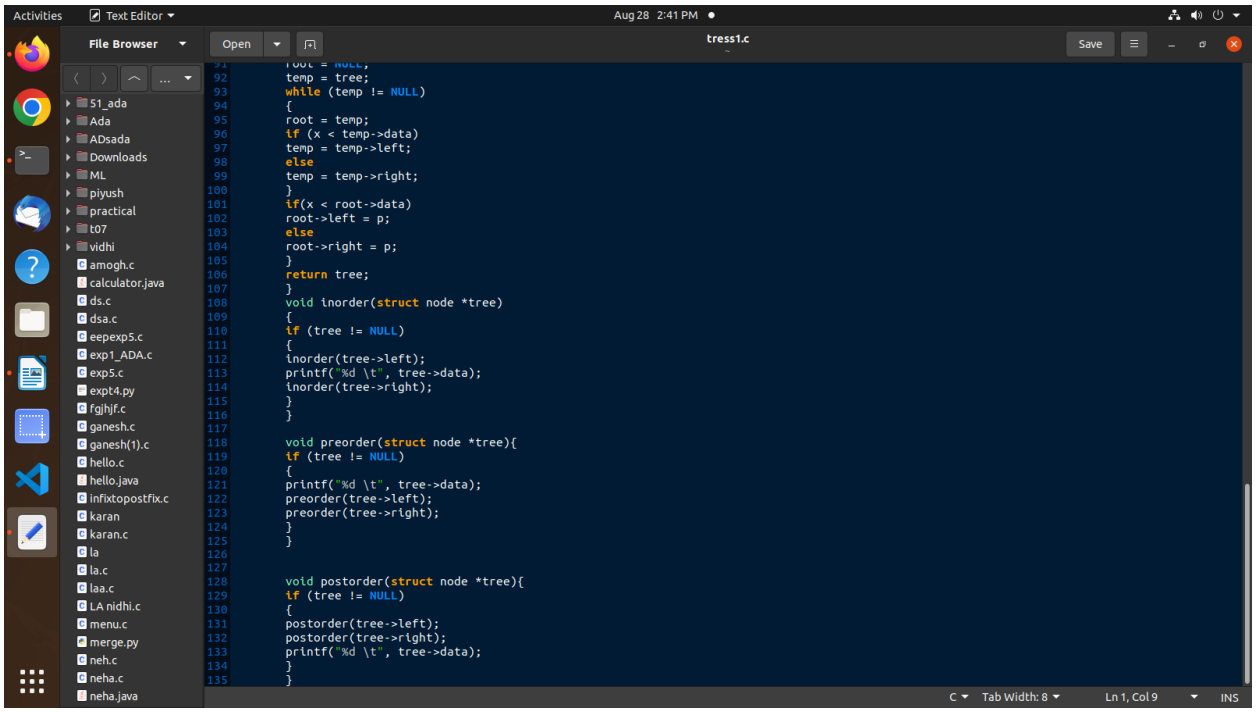
NAME : PARMESH VALA
CLASS : SY_IT
ROLL NO: 63

CODE :

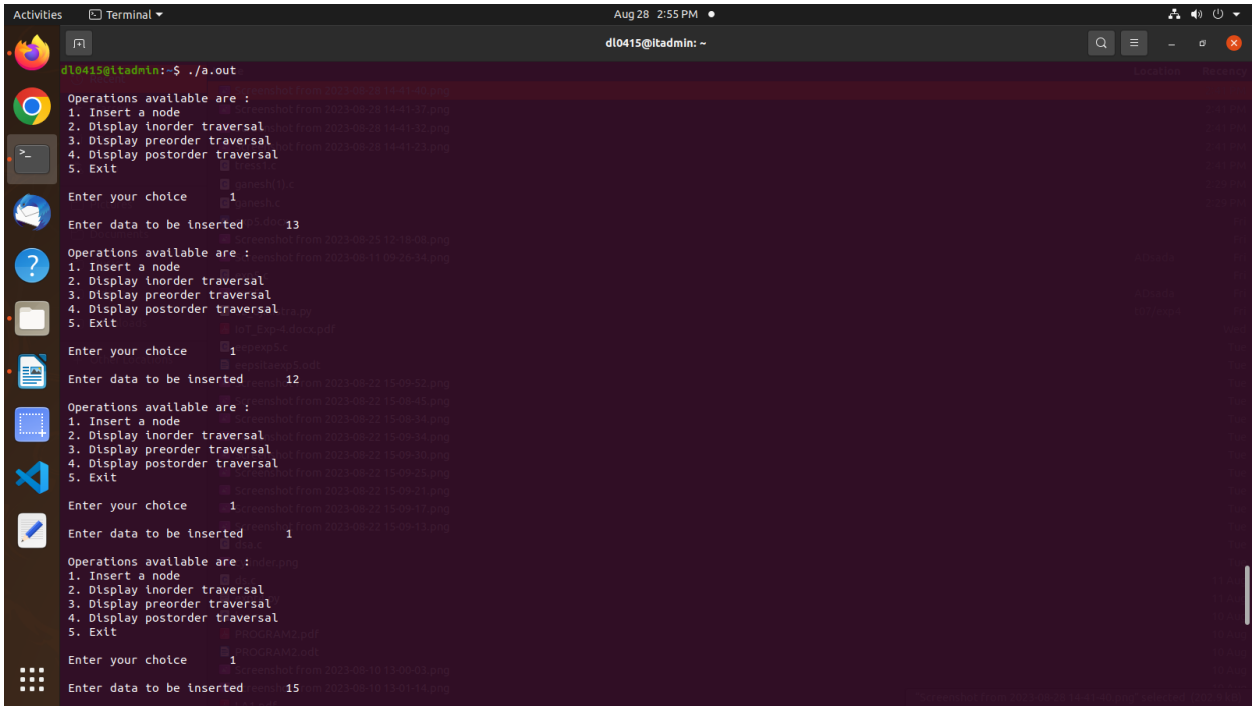

Activities
Text Editor
Aug 28 2:41 PM
File Browser
Open
tress1.c
Save
51_ada
Ada
ADsada
Downloads
ML
piyush
practical
t07
vidhi
amogh.c
calculator.java
ds.c
dsa.c
eepexp5.c
exp1_ADA.c
exp5.c
expt4.py
fgjhjf.c
ganesh.c
ganesh(1).c
hello.c
hello.java
infixtopostfix.c
karan
karan.c
la
la.c
laa.c
LA nidhi.c
menu.c
merge.py
neh.c
neha.c
neha.java
#include<stdio.h>
#include<stdlib.h>
#include<malloc.h>
struct node{
int data;
struct node *left;
struct node *right;
};
struct node *tree;
void create(struct node *);
struct node *insert(struct node *, int);
void inorder(struct node *);
void preorder(struct node *);
void postorder(struct node *);
void main()
{
int choice, x;
struct node *ptr;
create(tree);
do
{
printf("\n Operations available are : ");
printf("\n 1. Insert a node");
printf("\n 2. Display inorder traversal");
printf("\n 3. Display preorder traversal");
printf("\n 4. Display postorder traversal");
printf("\n 5. Exit \n");
printf("\n Enter your choice\t");
scanf("%d", &choice);
switch (choice){
case 1:
printf("\n Enter data to be inserted\t");
scanf("%d",&x);
tree = insert(tree, x);
break;
case 2:
printf("\n Elements in the inorder traversal are\t");
inorder(tree);
C
Tab Width: 8
Ln 1, Col 9
INS

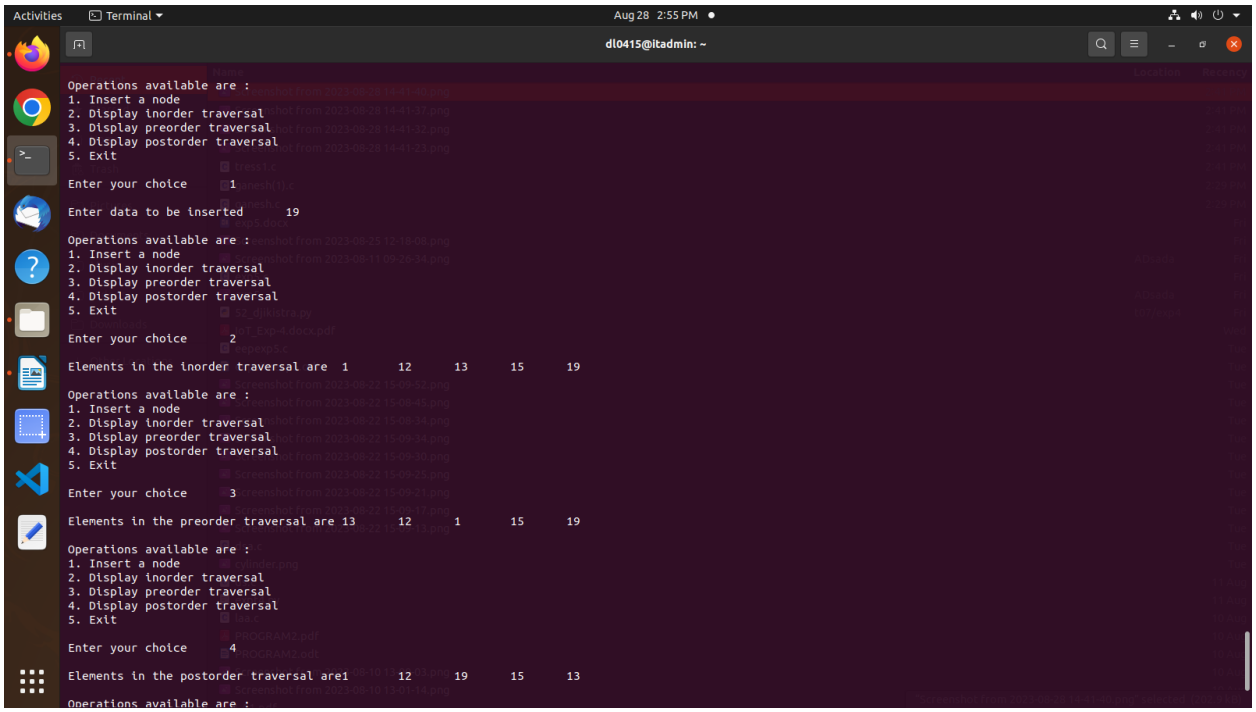

Activities
Text Editor
Aug 28 2:41 PM
File Browser
Open
tress1.c
Save
51_ada
Ada
ADsada
Downloads
ML
piyush
practical
t07
vidhi
amogh.c
calculator.java
ds.c
dsa.c
eepexp5.c
exp1_ADA.c
exp5.c
expt4.py
fgjhjf.c
ganesh.c
ganesh(1).c
hello.c
hello.java
infixtopostfix.c
karan
karan.c
la
la.c
laa.c
LA nidhi.c
menu.c
merge.py
neh.c
neha.c
neha.java
inorder(tree);
printf("\n");
break;
case 3:
printf("\n Elements in the preorder traversal are\t");
preorder(tree);
printf("\n");
break;
case 4:
printf("\n Elements in the postorder traversal are");
postorder(tree);
printf("\n");
break;
case 5:
printf("\n Exit: program finished !!!");
break;
default:
printf("\n Please enter a valid option from 1,2,3,4,5. ");
break;
}
}
while (choice != 5);
}
void create(struct node *tree)
{
tree = NULL;
}
struct node *insert(struct node *tree, int x)
{
struct node *p, *temp, *root;
p = (struct node *)malloc(sizeof(struct node));
p->data = x;
p->left = NULL;
p->right = NULL;
if (tree == NULL)
{
tree = p;
tree-> left = NULL;
tree-> right = NULL;
C
Tab Width: 8
Ln 1, Col 9
INS

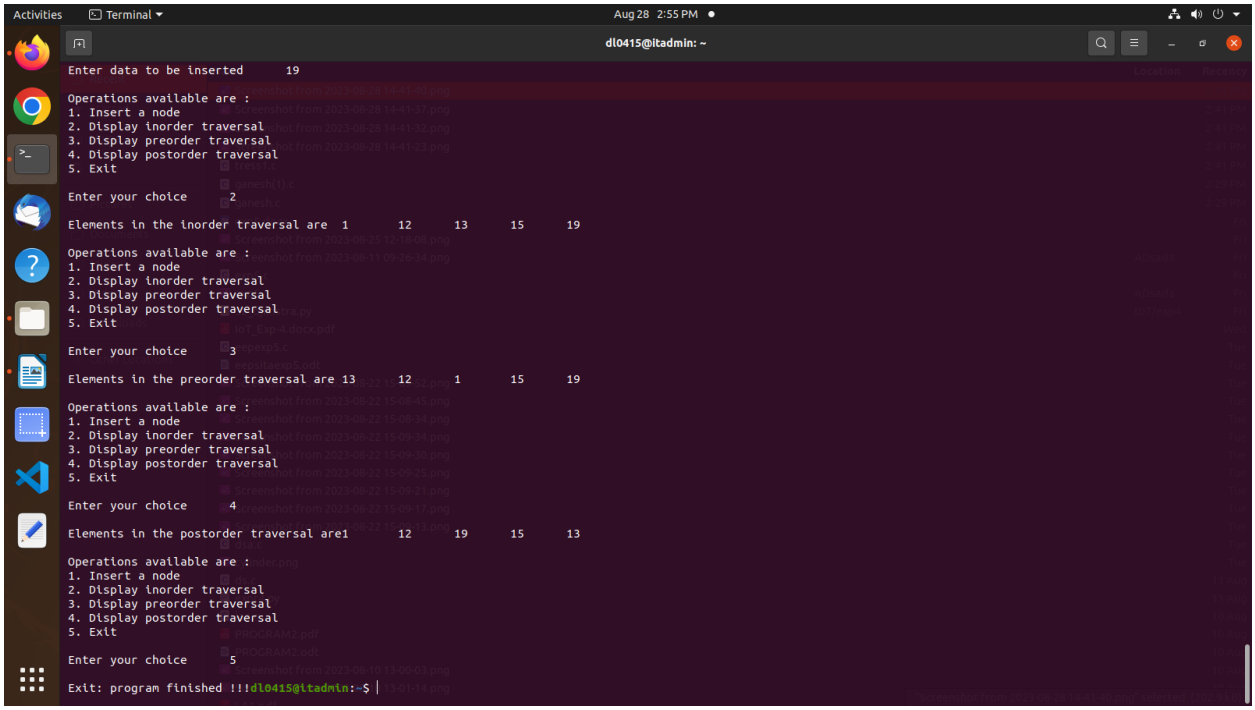

Activities
Text Editor
Aug 28 2:41 PM
File Browser
Open
tress1.c
Save
51_ada
Ada
ADsada
Downloads
ML
piyush
practical
t07
vidhi
amogh.c
calculator.java
ds.c
dsa.c
eepexp5.c
exp1_ADA.c
exp5.c
expt4.py
fgjhjf.c
ganesh.c
ganesh(1).c
hello.c
hello.java
infixtopostfix.c
karan
karan.c
la
la.c
laa.c
LA nidhi.c
menu.c
merge.py
neh.c
neha.c
neha.java
87 tree-> right = NULL;
88 }
89 else
90 {
91 root = NULL;
92 temp = tree;
93 while (temp != NULL)
94 {
95 root = temp;
96 if (x < temp->data)
97 temp = temp->left;
98 else
99 temp = temp->right;
100 }
101 if(x < root->data)
102 root->left = p;
103 else
104 root->right = p;
105 }
106 return tree;
107 }
108 void inorder(struct node *tree)
109 {
110 if (tree != NULL)
111 {
112 inorder(tree->left);
113 printf("%d \t", tree->data);
114 inorder(tree->right);
115 }
116 }
117
118 void preorder(struct node *tree){
119 if (tree != NULL)
120 {
121 printf("%d \t", tree->data);
122 preorder(tree->left);
123 preorder(tree->right);
124 }
125 }
126
127
128 void postorder(struct node *tree){
129 if (tree != NULL)
130 {
C
Tab Width: 8
Ln 1, Col 9
INS


Activities
Text Editor
Aug 28 2:41 PM
File Browser
Open
tress1.c
Save
51_ada
Ada
ADsada
Downloads
ML
piyush
practical
t07
vidhi
amogh.c
calculator.java
ds.c
dsa.c
eepexp5.c
exp1_ADA.c
exp5.c
expt4.py
fgjhjf.c
ganesh.c
ganesh(1).c
hello.c
hello.java
infixtopostfix.c
karan
karan.c
la
la.c
laa.c
LA nidhi.c
menu.c
merge.py
neh.c
neha.c
neha.java
92 temp = tree;
93 while (temp != NULL)
94 {
95 root = temp;
96 if (x < temp->data)
97 temp = temp->left;
98 else
99 temp = temp->right;
100 }
101 if(x < root->data)
102 root->left = p;
103 else
104 root->right = p;
105 }
106 return tree;
107 }
108 void inorder(struct node *tree)
109 {
110 if (tree != NULL)
111 {
112 inorder(tree->left);
113 printf("%d \t", tree->data);
114 inorder(tree->right);
115 }
116 }
117
118 void preorder(struct node *tree){
119 if (tree != NULL)
120 {
121 printf("%d \t", tree->data);
122 preorder(tree->left);
123 preorder(tree->right);
124 }
125 }
126
127
128 void postorder(struct node *tree){
129 if (tree != NULL)
130 {
131 postorder(tree->left);
132 postorder(tree->right);
133 printf("%d \t", tree->data);
134 }
135 }
C
Tab Width: 8
Ln 1, Col 9
INS

OUTPUT :


Activities
Terminal
Aug 28 2:55 PM
dl0415@itadmin: ~
dl0415@itadmin:~$ ./a.out
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 1
Enter data to be inserted 13
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 1
Enter data to be inserted 12
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 1
Enter data to be inserted 1
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 1
Enter data to be inserted 15


Activities
Terminal
Aug 28 2:55 PM
dl0415@itadmin: ~
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 1
Enter data to be inserted 19
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 2
Elements in the inorder traversal are 1 12 13 15 19
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 3
Elements in the preorder traversal are 13 12 1 15 19
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 4
Elements in the postorder traversal are1 12 19 15 13
Operations available are :


Activities
Terminal
Aug 28 2:55 PM
dl0415@itadmin: ~
Enter data to be inserted 19
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 2
Elements in the inorder traversal are 1 12 13 15 19
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 3
Elements in the preorder traversal are 13 12 1 15 19
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 4
Elements in the postorder traversal are1 12 19 15 13
Operations available are :
1. Insert a node
2. Display inorder traversal
3. Display preorder traversal
4. Display postorder traversal
5. Exit
Enter your choice 5
Exit: program finished !!!dl0415@itadmin:~$