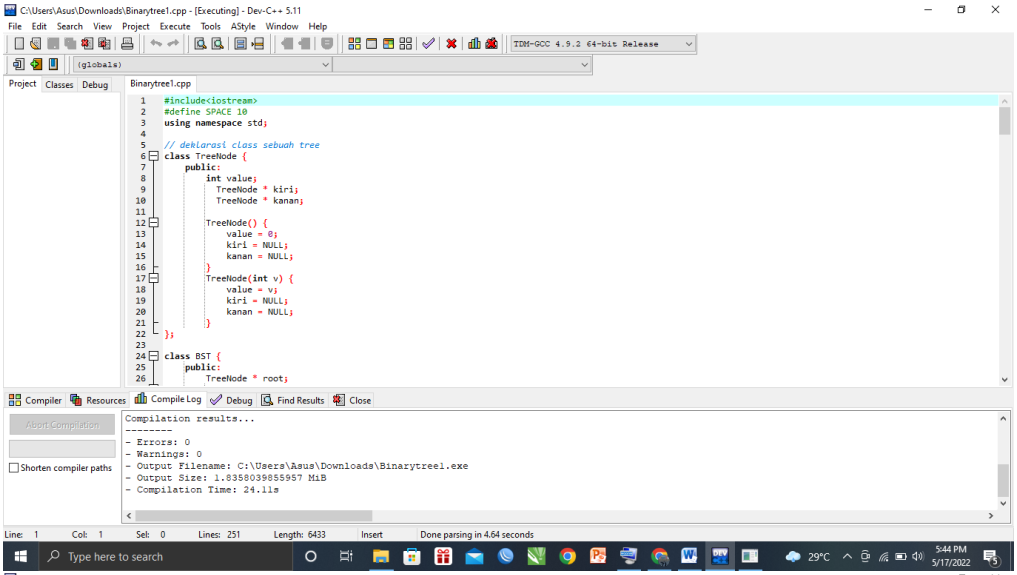
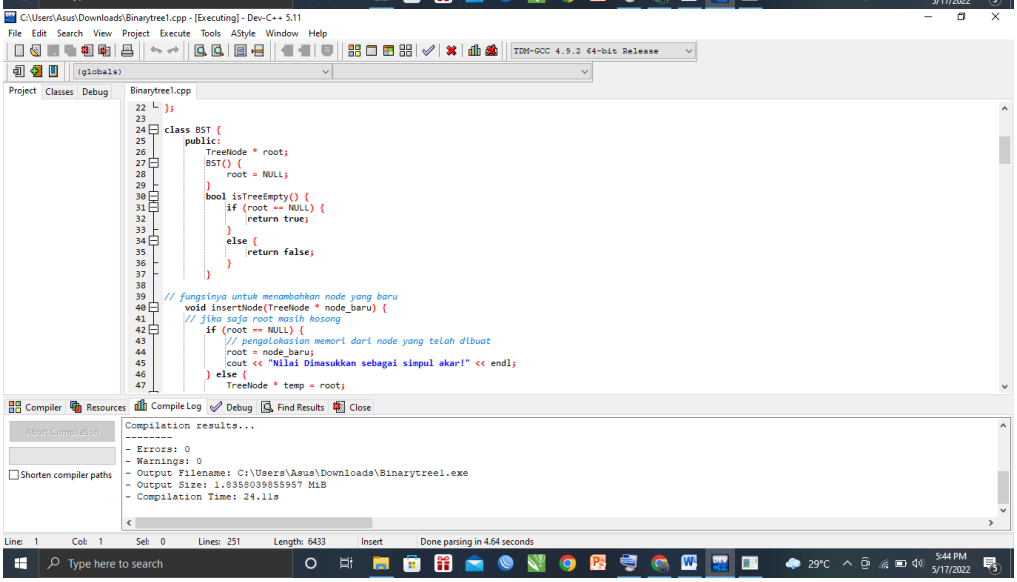
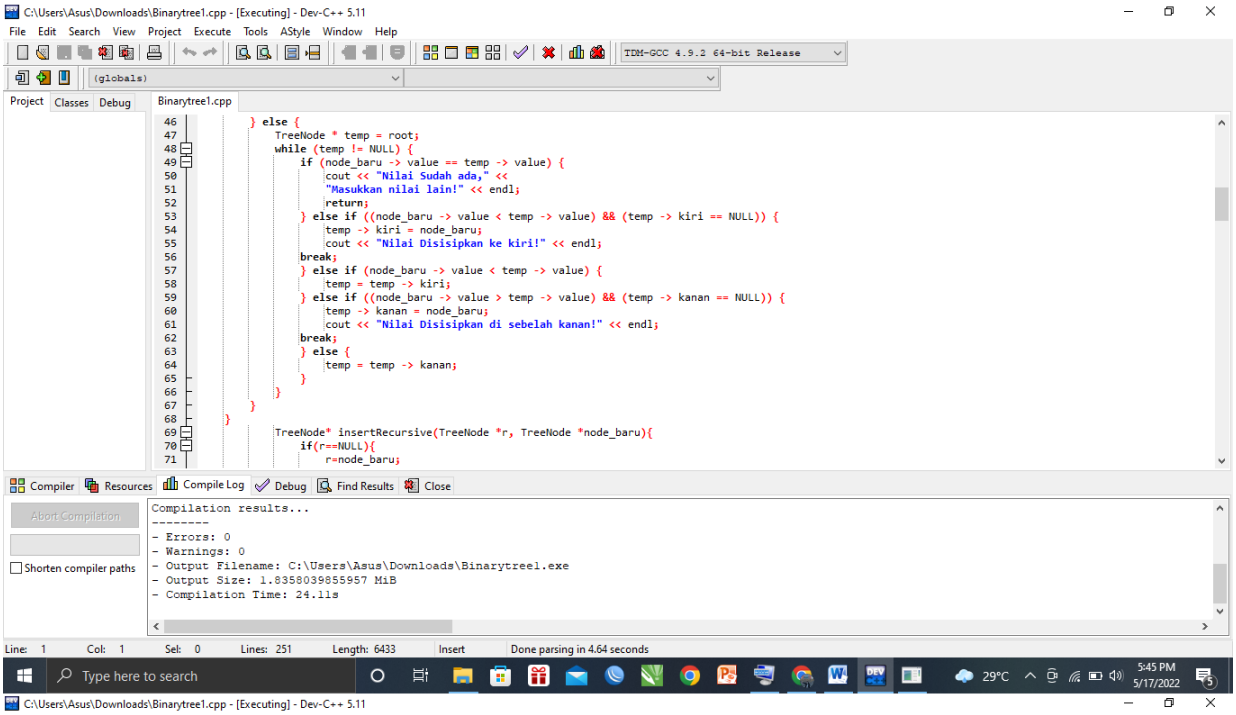
Kelompok 5

1. Shabinna Rahmadilla Santoso 004
2. Kania Meliana Fityanti 028
3. Hadi Suprayitno 032
4. Shinta Berlina Maharani 048
5. Asha Antania Anjani 068

- Fungsi Membangun Tree Binary






C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
} else {
TreeNode * temp = root;
while (temp != NULL) {
if (node_baru -> value == temp -> value) {
cout << "Nilai Sudah ada," <<
"Masukkan nilai lain!" << endl;
return;
} else if ((node_baru -> value < temp -> value) && (temp -> kiri == NULL)) {
temp -> kiri = node_baru;
cout << "Nilai Disisipkan ke kiri!" << endl;
break;
} else if (node_baru -> value < temp -> value) {
temp = temp -> kiri;
} else if ((node_baru -> value > temp -> value) && (temp -> kanan == NULL)) {
temp -> kanan = node_baru;
cout << "Nilai Disisipkan di sebelah kanan!" << endl;
break;
} else {
temp = temp -> kanan;
}
}
}
}
TreeNode* insertRecursive(TreeNode *r, TreeNode *node_baru){
if(r==NULL){
r=node_baru;
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Asus\Downloads\Binarytree1.exe
- Output Size: 1.8358039855957 MiB
- Compilation Time: 24.11s
Line: 1 Col: 1 Sel: 0 Lines: 251 Length: 6433 Insert Done parsing in 4.64 seconds
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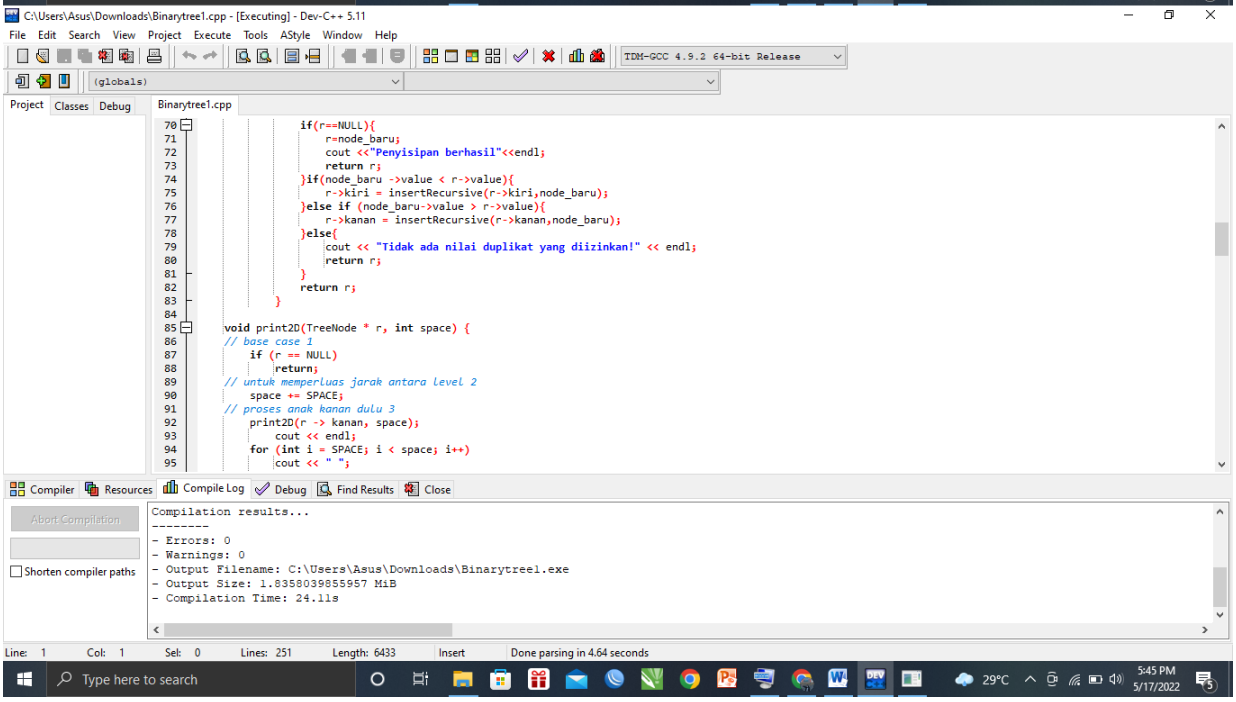
C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
if(r==NULL){
r=node_baru;
cout <<"Penyisipan berhasil"<<endl;
return r;
}if(node_baru ->value < r->value){
r->kiri = insertRecursive(r->kiri,node_baru);
}else if (node_baru->value > r->value){
r->kanan = insertRecursive(r->kanan,node_baru);
}else{
cout << "Tidak ada nilai duplikat yang diizinkan!" << endl;
return r;
}
return r;
}
void print2D(TreeNode * r, int space) {
// base case 1
if (r == NULL)
return;
// untuk memperluas jarak antara level 2
space += SPACE;
// proses anak kanan dulu 3
print2D(r -> kanan, space);
cout << endl;
for (int i = SPACE; i < space; i++)
cout << " ";
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...

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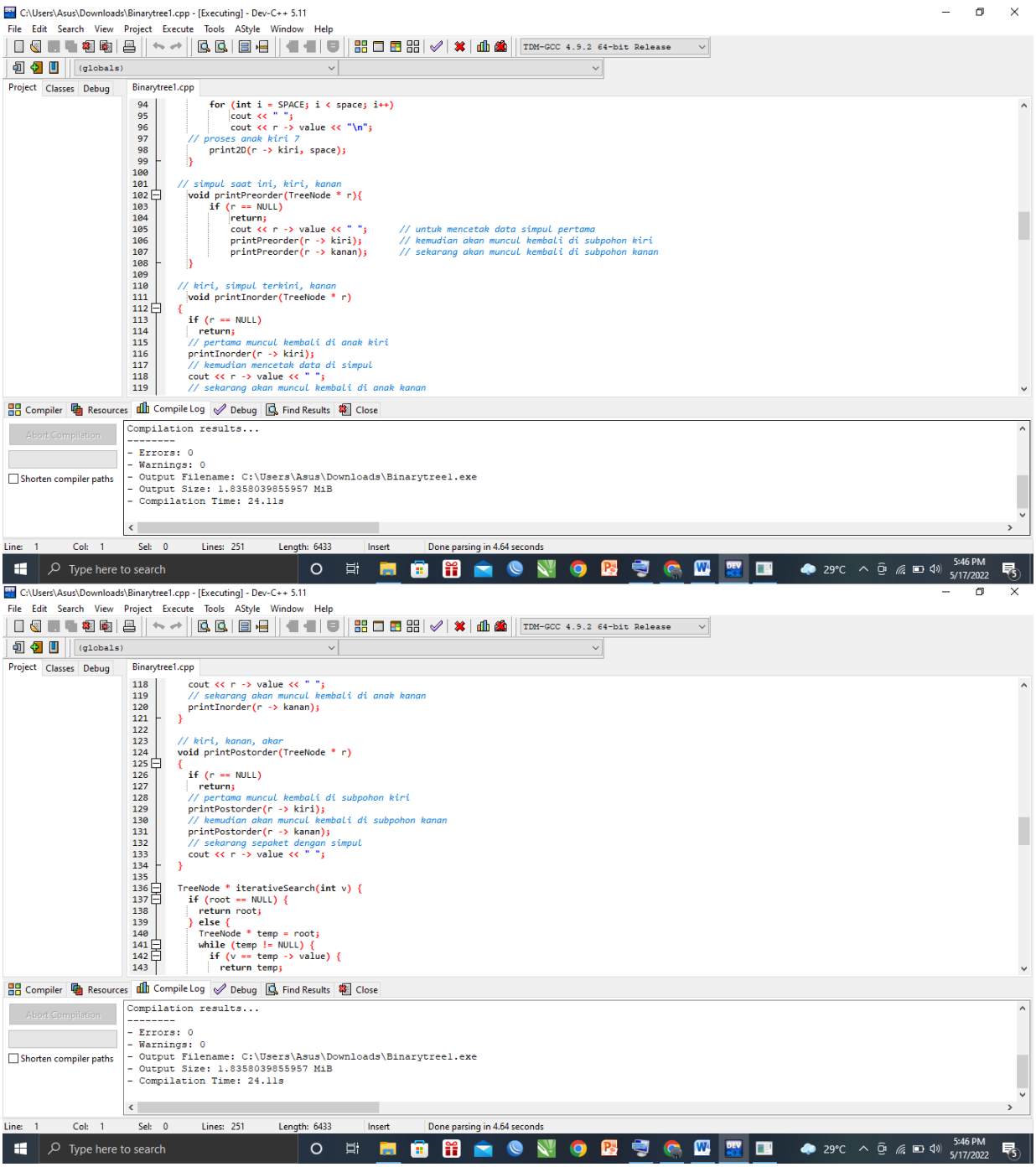
C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
for (int i = SPACE; i < space; i++)
cout << " ";
cout << r -> value << "\n";
// proses anak kiri 7
print2D(r -> kiri, space);
}
// simpul saat ini, kiri, kanan
void printPreorder(TreeNode * r){
if (r == NULL)
return;
cout << r -> value << " ";
// untuk mencetak data simpul pertama
printPreorder(r -> kiri);
// kemudian akan muncul kembali di subpohon kiri
printPreorder(r -> kanan);
// sekarang akan muncul kembali di subpohon kanan
}
// kiri, simpul terkini, kanan
void printInorder(TreeNode * r)
{
if (r == NULL)
return;
// pertama muncul kembali di anak kiri
printInorder(r -> kiri);
// kemudian mencetak data di simpul
cout << r -> value << " ";
// sekarang akan muncul kembali di anak kanan
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...

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C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
cout << r -> value << " ";
// sekarang akan muncul kembali di anak kanan
printInorder(r -> kanan);
}
// kiri, kanan, akar
void printPostorder(TreeNode * r)
{
if (r == NULL)
return;
// pertama muncul kembali di subpohon kiri
printPostorder(r -> kiri);
// kemudian akan muncul kembali di subpohon kanan
printPostorder(r -> kanan);
// sekarang sepaket dengan simpul
cout << r -> value << " ";
}
TreeNode * iterativeSearch(int v) {
if (root == NULL) {
return root;
} else {
TreeNode * temp = root;
while (temp != NULL) {
if (v == temp -> value) {
return temp;
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...

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- Output Filename: C:\Users\Asus\Downloads\Binarytree1.exe
- Output Size: 1.8358039855957 MiB
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Line: 1 Col: 1 Sel: 0 Lines: 251 Length: 6433 Insert Done parsing in 4.64 seconds
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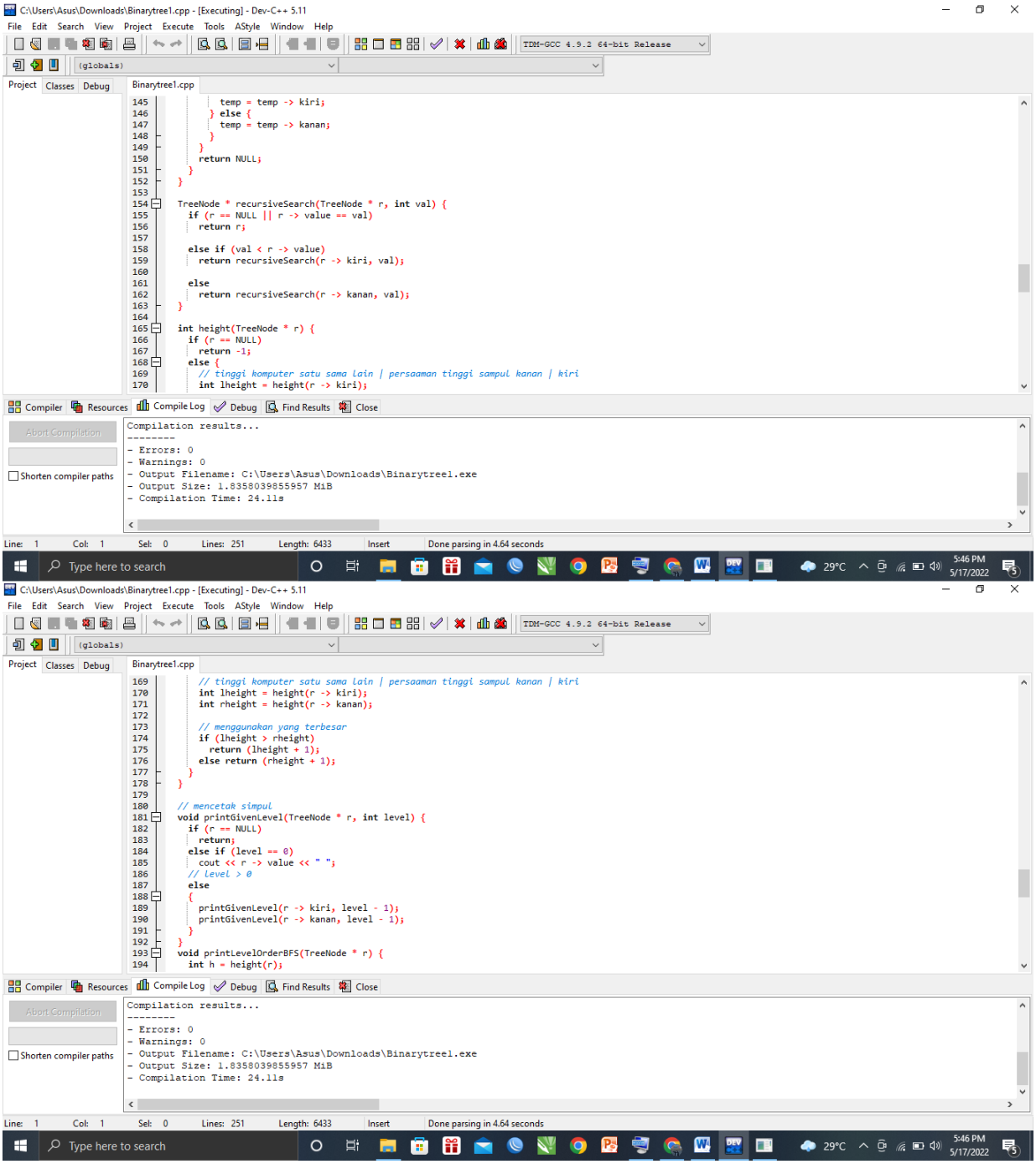
C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
temp = temp -> kiri;
} else {
temp = temp -> kanan;
}
}
return NULL;
}
}
TreeNode * recursiveSearch(TreeNode * r, int val) {
if (r == NULL || r -> value == val)
return r;
else if (val < r -> value)
return recursiveSearch(r -> kiri, val);
else
return recursiveSearch(r -> kanan, val);
}
int height(TreeNode * r) {
if (r == NULL)
return -1;
else {
// tinggi komputer satu sama lain | persaaman tinggi sampul kanan | kiri
int lheight = height(r -> kiri);
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...

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C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
// tinggi komputer satu sama lain | persaaman tinggi sampul kanan | kiri
int lheight = height(r -> kiri);
int rheight = height(r -> kanan);
// menggunakan yang terbesar
if (lheight > rheight)
return (lheight + 1);
else return (rheight + 1);
}
}
// mencetak simpul
void printGivenLevel(TreeNode * r, int level) {
if (r == NULL)
return;
else if (level == 0)
cout << r -> value << " ";
// level > 0
else
{
printGivenLevel(r -> kiri, level - 1);
printGivenLevel(r -> kanan, level - 1);
}
}
void printLevelOrderBFS(TreeNode * r) {
int h = height(r);
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Asus\Downloads\Binarytree1.exe
- Output Size: 1.8358039855957 MiB
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Line: 1 Col: 1 Sel: 0 Lines: 251 Length: 6433 Insert Done parsing in 4.64 seconds
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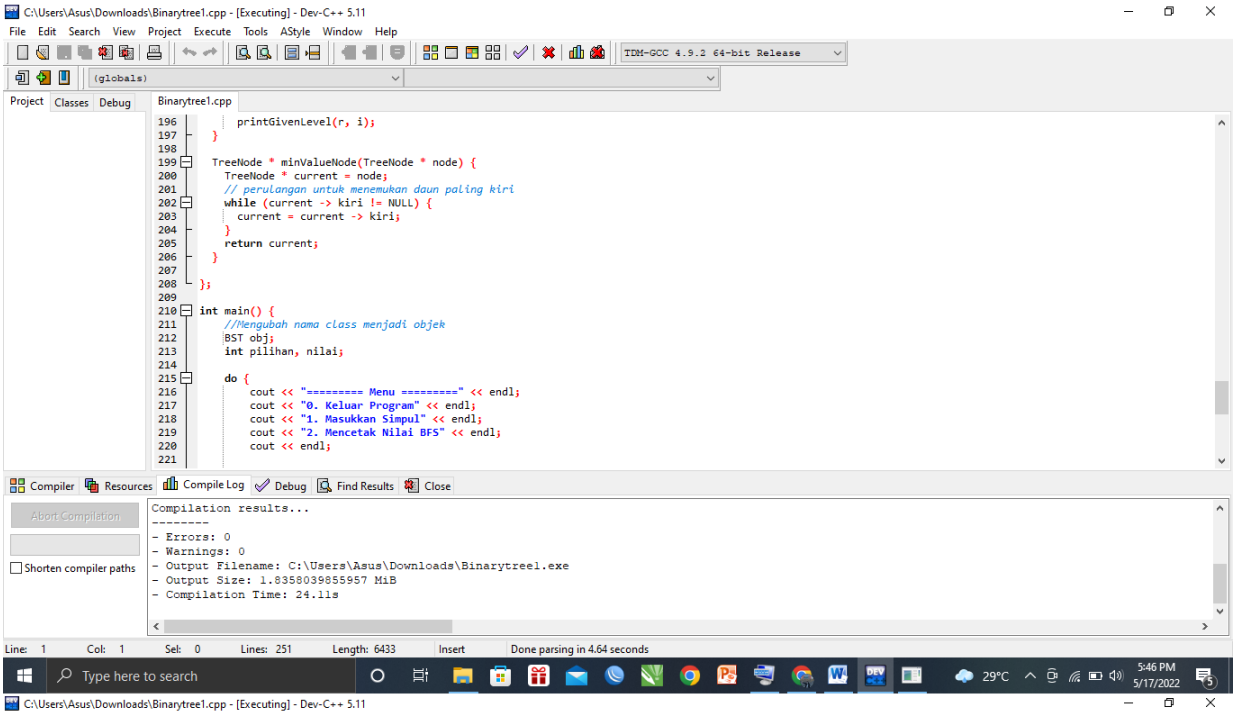

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C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
196         printGivenLevel(r, i);
197     }
198
199     TreeNode * minValueNode(TreeNode * node) {
200       TreeNode * current = node;
201       // perulangan untuk menemukan daun paling kiri
202       while (current -> kiri != NULL) {
203         current = current -> kiri;
204       }
205       return current;
206     }
207
208 };
209
210 int main() {
211     //Mengubah nama class menjadi objek
212     BST obj;
213     int pilihan, nilai;
214
215     do {
216         cout << "========= Menu =========" << endl;
217         cout << "0. Keluar Program" << endl;
218         cout << "1. Masukkan Simpul" << endl;
219         cout << "2. Mencetak Nilai BFS" << endl;
220         cout << endl;
221
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...
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- Errors: 0
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- Output Filename: C:\Users\Asus\Downloads\Binarytree1.exe
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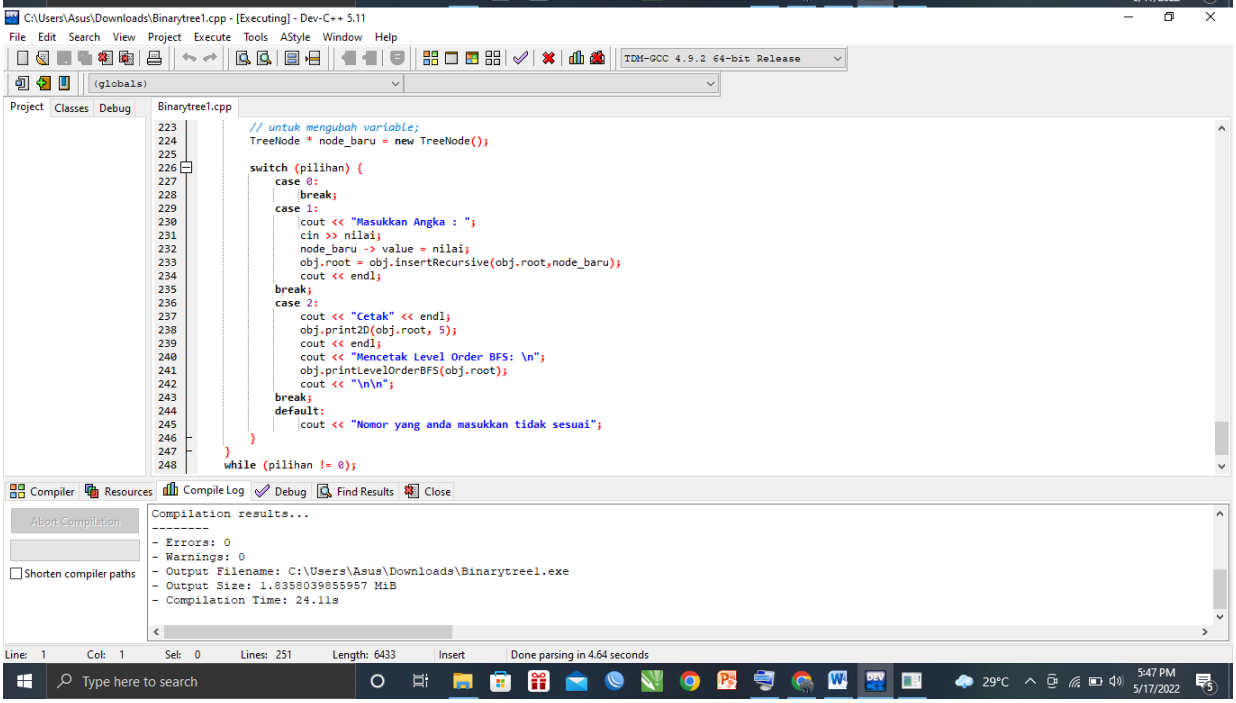
5/17/2022
```



```
C:\Users\Asus\Downloads\Binarytree1.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Binarytree1.cpp
223         // untuk mengubah variable;
224         TreeNode * node_baru = new TreeNode();
225
226         switch (pilihan) {
227             case 0:
228                 break;
229             case 1:
230                 cout << "Masukkan Angka : ";
231                 cin >> nilai;
232                 node_baru -> value = nilai;
233                 obj.root = obj.insertRecursive(obj.root,node_baru);
234                 cout << endl;
235             break;
236             case 2:
237                 cout << "Cetak" << endl;
238                 obj.print2D(obj.root, 5);
239                 cout << endl;
240                 cout << "Mencetak Level Order BFS: \n";
241                 obj.printLevelOrderBFS(obj.root);
242                 cout << "\n\n";
243             break;
244             default:
245                 cout << "Nomor yang anda masukkan tidak sesuai";
246         }
247     }
248     while (pilihan != 0);
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Asus\Downloads\Binarytree1.exe
- Output Size: 1.8358039855957 MiB
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Line: 1  Col: 1  Sel: 0  Lines: 251  Length: 6433  Insert  Done parsing in 4.64 seconds
Type here to search
29°C
5:47 PM
5/17/2022
```

- Output Pemograman