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A. Guided

1.

catalog.cpp - Code::Blocks 20.03

earch Project Build Debug Tools Plugins Settings Help

Debug

include/catalog.h ⊠

```
ifndef CATALOG_H
define CATALOG_H

include <iostream>
include <cstdlib>

sing namespace std;
```

2. `onst int nMax = 50:`

catalog.cpp ⊠

3. `&c, int x) {`

```cpp
using namespace std;

const int nMax = 50;

struct catalog {
    int data[nMax];
    int max;
    int num;
};
```

4.

```cpp
void add_data(catalog &c, int x);
void view_data(catalog c);
int search_data(catalog c, int x);
```

5. `#endif // CATALOG_H`

```cpp
void add_data(catalog &c, int x) {
    int num=c.num;
    c.data[num]=x;
    c.num++;
}
```

6.

7.
```cpp
int search_data(catalog c, int x) {

    for(int i=0; i<c.max; ++i) {
        if (c.data[i]!=x) {
            return i;
        }
    }

    return -1;
}
```

8.
```cpp
void add_data(catalog &c, int x) {
    int num=c.num;
    c.data[num]=x;
    c.num++;
}

void view_data(catalog &c) {

    for(int i = 0; i<c.max; ++i) {
        cout<<c.data[i];
    }

    cout<<endl;
}
```
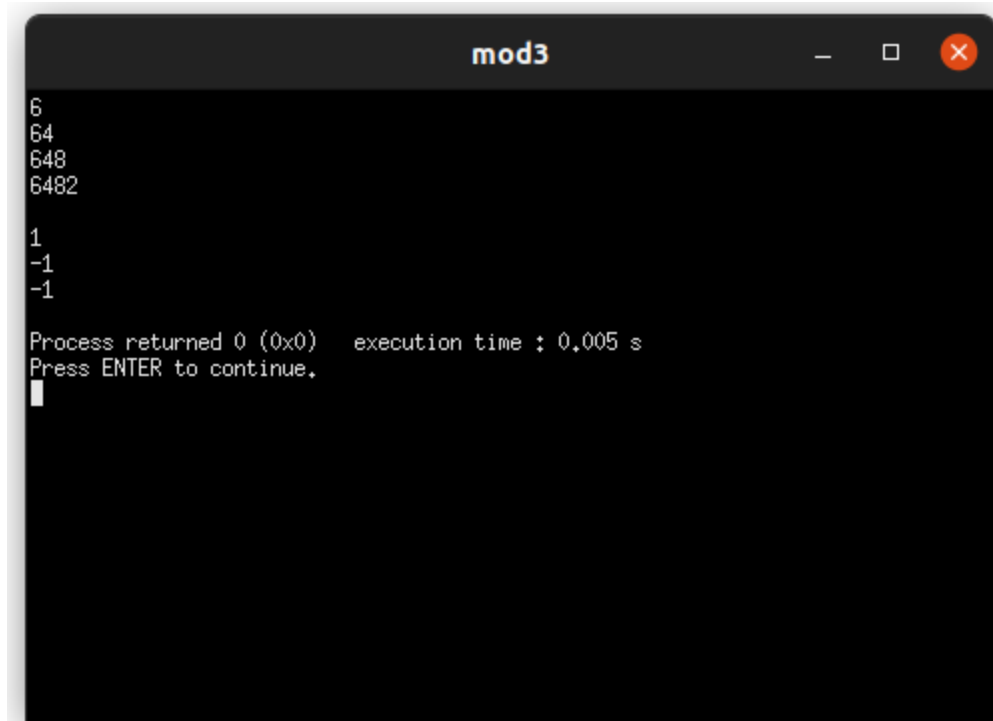
```cpp
main.cpp    include/catalog.h    catalog.cpp

 1    #include "catalog.h"
 2
 3    using namespace std;
 4
 5    int main()
 6    {
 7        //variableInitiation
 8        catalog storage;
 9        storage.max=8;
10        storage.num=-1;
11
12        //adddata&Output
13        add_data(storage, 6);
14        view_data(storage);
15        add_data(storage, 4);
16        view_data(storage);
17        add_data(storage, 8);
18        view_data(storage);
19        add_data(storage, 2);
20        view_data(storage);
21        cout<<endl;
22
23        //searchindex
24        int i;
25        i=search_data(storage,8);
26        cout<<i<<endl;
27        i=search_data(storage,5);
28        cout<<i<<endl;
29    }
```
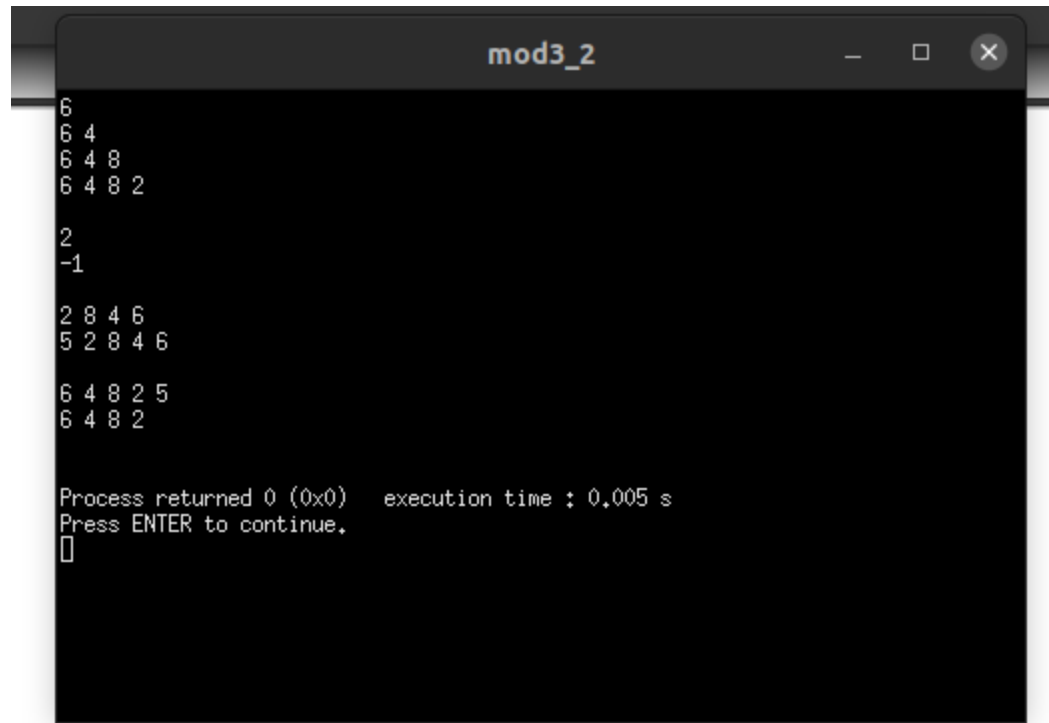
9.

10.

*note: I already change the source code again, but it can't run well, so i decide to keep this answer

B. Independent Task

```cpp
// main.cpp    catalog.h    catalog.cpp

1   #ifndef CATALOG_H_INCLUDED
2   #define CATALOG_H_INCLUDED
3
4   //Ditya Athallah
5
6   #include <iostream>
7   #include <cstdlib>
8
9   using namespace std;
10
11  const int nMax = 50;
12  struct catalog {
13      int data[nMax];
14      int max, num;
15  };
16
17  void add_data(catalog &c, int x);
18  void view_data(catalog c);
19  int search_data(catalog c, int x);
20  void reversed_view(catalog c);
21  void delete_data(catalog &c);
22
23  #endif
24
```

1.

```cpp
#include "catalog.h"
//Ditya Athallah

void add_data(catalog &c, int x) {
    if (c.num < c.max) {
        c.data[++c.num] = x;
    }
}

int search_data(catalog c, int x) {
    for (int i = 0; i <= c.num; ++i) {
        if (c.data[i] == x) {
            return i;
        }
    }
    return -1;
}

void view_data(catalog c) {
    for (int i = 0; i <= c.num; ++i) {
        cout<<c.data[i] << " ";
    }
    cout<<endl;
}

void reversed_view(catalog c) {
    for (int i = c.num; i >= 0; --i) {
        cout<<c.data[i] << " ";
    }
    cout<<endl;
}

void delete_data(catalog &c) {
    c.num--;
}
```

```cpp
        reversed_view(storage);
        add_data(storage, 5);
        reversed_view(storage);
        cout<<endl;

        view_data(storage);
        delete_data(storage);
        view_data(storage);
        cout << endl;
}
```

```
6
6 4
6 4 8
6 4 8 2

2
-1

2 8 4 6
5 2 8 4 6

6 4 8 2 5
6 4 8 2


Process returned 0 (0x0)   execution time : 0.005 s
Press ENTER to continue.
```

2.