



EE6094 CAD for VLSI Design



PA1 File Processing

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8.5 Reading Data from a Sequential File (cont.)



```

1 // Fig. 8.6: Fig08_06.cpp
2 // Reading and printing a sequential file.
3 #include <iostream>
4 #include <fstream> // file stream
5 #include <iomanip>
6 #include <string>
7 #include <cstdlib>
8 using namespace std;
9
10 void outputLine( int, const string, double ); // prototype
11
12 int main()
13 {
14     // ifstream constructor opens the file
15     ifstream inClientFile( "clients.txt", ios::in );
16
17     // exit program if ifstream could not open file
18     if ( !inClientFile )
19     {
20         cerr << "File could not be opened" << endl;
21         exit( 1 );
22     } // end if
23

```



Fig. 8.6 | Reading and printing a sequential file. (Part 1 of 3.)

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8.5 Reading Data from a Sequential File (cont.)

```

24  int account; // customer's account number
25  string name; // customer's name
26  double balance; //amount of money customer owes company
27
28  cout << left << setw( 10 ) << "Account" << setw( 13 )
29      << "Name" << "Balance" << endl << fixed << showpoint;
30
31  // display each record in file
32  while ( inClientFile >> account >> name >> balance )
33      outputLine( account, name, balance );
34  } // end main
35
36  // display single record from file
37  void outputLine( int account, const string name, double balance )
38  {
39      cout << left << setw( 10 ) << account << setw( 13 ) << name
40          << setw( 7 ) << setprecision( 2 ) << right << balance << endl;
41  } // end function outputLine

```

Account	Name	Balance
100	Jones	24.98
200	Doe	345.67
300	White	0.00
400	Stone	-42.16
500	Rich	224.62

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8.4 Creating a Sequential File (cont.)

```

1  // Fig. 8.3: Fig08_03.cpp
2  // Create a sequential file.
3  #include <iostream>
4  #include <string>
5  #include <fstream> // file stream
6  #include <cstdlib>
7  using namespace std;
8
9  int main()
10 {
11     // ofstream constructor opens file
12     ofstream outClientFile( "clients.txt", ios::out );
13
14     // exit program if unable to create file
15     if ( !outClientFile ) // overloaded ! operator
16     {
17         cerr << "File could not be opened" << endl;
18         exit( 1 );
19     } // end if
20
21     cout << "Enter the account, name, and balance." << endl
22         << "Enter end-of-file to end input.\n? ";
23

```

Fig. 8.3 | Creating a sequential file. (Part I of 2.)

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8.4 Creating a Sequential File (cont.)

```

24  int account; // customer's account number
25  string name; //customer's name
26  double balance; // amount of money customer owes company
27
28  // read account, name and balance from cin, then place in file
29  while ( cin >> account >> name >> balance )
30  {
31      outClientFile << account << ' ' << name << ' ' << balance << endl;
32      cout << "? ";
33  } // end while
34 } // end main

```

Enter the account, name, and balance.
Enter end-of-file to end input.

```

? 100 Jones 24.98
? 200 Doe 345.67
? 300 White 0.00
? 400 Stone -42.16
? 500 Rich 224.62
? ^Z

```

Fig. 8.3 | Creating a sequential file. (Part 2 of 2.)

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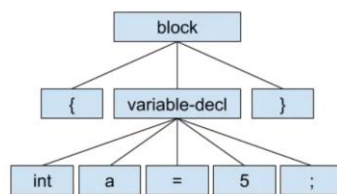
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Concept of A Parser

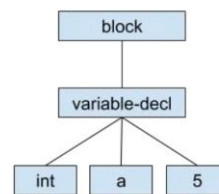
```

{
    int a = 5;
}

```



parse-tree / syntax tree



abstract syntax tree (AST)

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How to get a string from a file



- ◆1. cin
- ◆2. cin.get()
- ◆3. cin.getline()
- ◆4. getline()
- ◆5. gets()
- ◆6. getchar()



Source: https://blog.csdn.net/Lee_Shuai/article/details/53313988

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How to get a string from a file



◆cin

```
#include <iostream>
using namespace std;
main ()
{
    int a,b;
    cin>>a>>b;
    cout<<a+b<<endl;
}
```

Input: 2△3△
Output: 5

```
#include <iostream>
using namespace std;
main ()
{
    char a[20];
    cin>>a;
    cout<<a<<endl;
}
```

Input : jkljkljkl
Output : jkljkljkl

Input : jkljkl△jkljkl
Output : jkljkl



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How to get a string from a file



◆ cin.get

```
#include <iostream>
using namespace std;
main ()
{
    char ch;
    ch=cin.get(); //cin.get(ch);
    cout<<ch<<endl;
}
```

Input: jljkljkl
Output: j



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```
#include <iostream>
using namespace std;
main ()
{
    char a[20];
    cin.get(a,20);
    cout<<a<<endl;
}
```

Input : jkl jkl jkl
Output : jkl jkl jkl

Input : abcdeabcdeabcdeabcdeabcde (25)
Output : abcdeabcdeabcdeabcd (19+'\0')

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How to get a string from a file



◆ cin.getline()

```
#include <iostream>
using namespace std;
main ()
{
    char m[20];
    cin.getline(m,5);
    cout<<m<<endl;
}
```

Input: jkljkljkl
Output: jklj



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```
#include<iostream>
#include<string>

using namespace std;

main ()
{
    char m[3][20];

    for(int i=0;i<3;i++){
        cout<<"\nPlease enter"<<i+1<<"string : "<<endl;
        cin.getline(m[i],20);
    }
    cout<<endl;

    for(int j=0;j<3;j++)
        cout<<"Output m["<<j<<"] value:"<<m[j]<<endl;
}
```

Please enter 1 string: test1
Please enter 2 string: test2
Please enter 3 string: test3

Output m[0] value: test1
Output m[1] value: test2
Output m[2] value: test3

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How to get a string from a file



◆getline()

```
#include<iostream>
#include<string>
using namespace std;
```

```
main ()
{
    string str;
    getline(cin,str);
    cout<<str<<endl;
}
```

Input: abc def ghi
Output: abc def ghi



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◆Note

- cin.getline() belongs to istream
- getline() belongs to string



How to get a string from a file



◆gets()

```
#include<iostream>
#include<string>
using namespace std;
```

```
main ()
{
    char m[20];
    gets(m); //m=gets();
    cout<<m<<endl;
}
```

Input: abc def ghi
Output: abc def ghi



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```
#include<iostream>
#include<string>
using namespace std;
```

```
main ()
{
    char m[3][20];
    for(int i=0;i<3;i++){
        cout<<"\n nPlease enter"<<i+1<<"string :
"<<endl;
        gets(m[i]);
    }
    cout<<endl;
    for(int j=0;j<3;j++){
        cout<<"Output m["<<j<<"] value:"<<m[j]<<endl;
    }
}
```

Please enter 1 string: test1
Please enter 2 string: test2
Please enter 3 string: test3

Output m[0] value: test1
Output m[1] value: test2
Output m[2] value: test3



How to get a string from a file



◆getchar()

```
#include<iostream>
#include<string>

using namespace std;
main ()
{
    char ch;
    ch=getchar(); //getchar(ch);
    cout<<ch<<endl;
}
```

Input: jkljkl
Output: j



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