C++ Input/Output

- Standard Input/Output:

```
#include <iostream>

cin  - "standard input"
cout - "standard output"
cerr - "standard error"

cin.get(ch);
cout.put(ch);
```


C++ Input/Output

- Streams:

```
#include <fstream>
```

- Input:

```
ifstream ifs;

ifs.open(filename);
ifs.close();
ifs.fail();
ifs.eof();

ifs.get(ch);
ifs >> a >> b >> c;
```

- Output:

```
ofstream ofs;

ofs.open(filename);
ofs.close();
ofs.fail();

ofs.put(ch);

ofs << a << b << c;
```

Attaching a stream to a File

```
#include <fstream>
ifstream infile;

infile.open("inputfile");
if(infile.fail())
  {
   cerr << "Error opening file\n";
   exit(1);
  } // END if


infile >> a >> b >> c;

infile.close();
```

FILE0030

Reading to end-of-file

```
#include <fstream>
ifstream ins;

ins.open("numfile");
if(ins.fail())
  {
   cerr << "Error opening file\n";
   exit(1);
  } // END if

sum = 0.0;
ins >> a;
while(!ins.eof())
  {
   sum += a;
   ins >> a;
  } //END while

ins.close();
```

FILE0040

File Copy Example

```
#include <fstream>
ifstream ins;
ofstream outs;

ins.open("oldfile");
outs.open("newfile");

ins.get(ch);
while(!ins.eof())
  {
   outs.put(ch);
   ins.get(ch);
  } // END while

ins.close();
outs.close();
```


C-Style I/O

```
#include <stdio.h>

scanf("%d %f %c", &intval, &fltval, &charval);

printf("This is output %d %f %c\n",
          intval, fltval, charval);
```