# Information Storage & Management

"Lab 2"

# Agenda

- How to read from file (word by word)
- How to read from file (char by char)
- How to read from file (line by line)
- Some functions “eof ()  , fail() , get()  ”

```
char ch;
while (file>>ch)
{
      cout << ch;
}
```

read char

```
string s;
while (getline(file,s))
{
       cout << s <<endl;
}
```

Read line

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
      ifstream file;
      file.open("fileName.txt");
      string s;
      while (file>>s)
      {
            cout << s <<" ";
      }
      file.close();
      system("pause");
      return 0;
}
```

Read word

# Reading from files Word by word

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
        ifstream file;
        file.open("fileName.txt");

        string s;
        while (file>>s)
        {
                cout << s <<" ";
        }

        file.close();
        system("pause");
        return 0;
}
```

# Reading from files
# Word by word
# Using eof function

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
        ifstream file;
        file.open("fileName.txt");

        string s;
        while (!(file.eof()))
        {
              file>>s;
              cout << s << " ";
        }
        file.close();
        system("pause");
        return 0;
}
```

# Reading from files
# Char by char

```cpp
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
	ifstream file;
	file.open("fileName.txt");

	char ch;
	while (file>>ch)
	{
		cout << ch;
	}

	file.close();
	system("pause");
	return 0;
}
```

# Reading from files
## Char by char
## With spaces

```cpp
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
	ifstream file;
	file.open("fileName.txt");

	char ch;
	while (file>>ch)
	{
		file>>noskipws;
		cout << ch ;
	}
	file.close();
	system("pause");
	return 0;
}
```

noskipws
No skip white spaces

# Reading from files
## Char by char
## With spaces

```cpp
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
        ifstream file;
        file.open("fileName.txt");

        char ch;
        while (file.get(ch))
        {
            cout << ch;
        }
        file.close();

        system("pause");
        return 0;
}
```

# Reading from files Line by line

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
        ifstream file;
        file.open("fileName.txt");

        string s;
        while (getline(file,s))
        {
                cout << s <<endl;
        }

        file.close();
        system("pause");
        return 0;
}
```

# Some file functions "flags"

All of these functions has no parameters

+

Return type (bool) true/false

## Checking state flags

In addition to `good()`, which checks whether the stream is ready for input/output operations, other member functions exist to check for specific states of a stream (all of them return a bool value):

bad()
: Returns true if a reading or writing operation fails. For example in the case that we try to write to a file that is not open for writing or if the device where we try to write has no space left.

fail()
: Returns true in the same cases as bad(), but also in the case that a format error happens, like when an alphabetical character is extracted when we are trying to read an integer number.

eof()
: Returns true if a file open for reading has reached the end.

good()
: It is the most generic state flag: it returns false in the same cases in which calling any of the previous functions would return true.

In order to reset the state flags checked by any of these member functions we have just seen we can use the member function `clear()`, which takes no parameters.

# good function

```
// writing on a text file
#include <iostream>
#include<string>
#include <fstream>
using namespace std;
void main() {
    ifstream myfile;
    myfile.open("aya.txt");
    string str;
    while (myfile.good())
    {
        getline(myfile, str);
        cout << str << endl;
        }
        system("pause");}
```

# To avoid infinity Loop in the previous code

```
while (myfile.good())
{
    if(myfile.eof())
        break;
    getline(myfile, str);
    cout << str << endl;
    }
```

# Fail function

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main()
{
        ifstream file;
        file.open("fileName.txt");
        string s;
        while (!(file.eof()))
        {
              file>>s;
              if(file.fail())
                break;
              cout << s << " " ;
        }
        file.close();
        system("pause");
        return 0; }
```

# Is_open Function

```cpp
#include <iostream>
#include <fstream>
using namespace std;
int main() {
        ofstream myfile;
        myfile.open("aya.txt");
        if (myfile.is_open())
        {
                myfile << "This is a line.\n";
                myfile << "This is another line.\n";
                 myfile.close();
        }
        else cout << "Unable to open file";
        return 0;
}
```

# Assignment

- Write C++ Program read data from file character by character with spaces.
- Write C++ Program to read and count some words
- Write C++ Program to read and count some lines.


THANKS!