The code consist of 3 part:

1. Global variables

Name	Type	Role
token	string	Hold the value of the current token
State	Short int	Hold a value representing the current state
Start, num, id, ..	Short int	Hold values representing different states
ofile	ofstream	The output file

2. Main () Function

The main function mainly does 3 things

1. read the input file and stores the input data into 1 string called input

```
        ifstream myReadFile;
        myReadFile.open("tiny_sample_code.txt");
        string input, line;

        //some other code

        if (myReadFile.is_open()) {
               while (!myReadFile.eof()) {
                       myReadFile >> line; input += " ";
                       input+=line;
               }
        }
```

2. For Loop that loops over every char in the string and decide whether to add this char to the current token and advance to the next char or to call the done method and start new token

   Also this loop decide which state should the loop advance the next iteration with

```
 for ( int i = 0; i < input.size(); i++ ) {...}
```

3. Opening the output file in the beginning and closing it after the above for loop

```
        ofile.open("scanner_output.txt");
        ofile << "Scanner Output for file \"tiny_sample_code.txt\" : \n";

        //some code

        ofile.close();
```

3. Done () Function

This function is called when the code in main decide that the token is complete and should be printed into the file.

It consist of simple condition as per the current state

```
void done() {

        if (state == start ) {
                ofile << "unexpected output at token \n"<< token;
        }
        else if (state == num) {
                ofile << token << " : Number \n";
        }
        else if (state ==id ) {
                ofile << token << " : Identifier \n";
        }
        else if (state ==comment ) {
                ofile << token << " : Comment \n";
        }
        else if (state ==special ) {
                ofile << token << " : Special Symbol \n";
        }
        else if (state == reserved) {
                ofile << token << " : Reserved Word \n";
        }
        else if (state = error) {
                ofile << "ERROR, unexpected output at :" << token;
        }

}
```