Basic C/C++ Programming under GNU Linux and Microsoft Windows – Part 2

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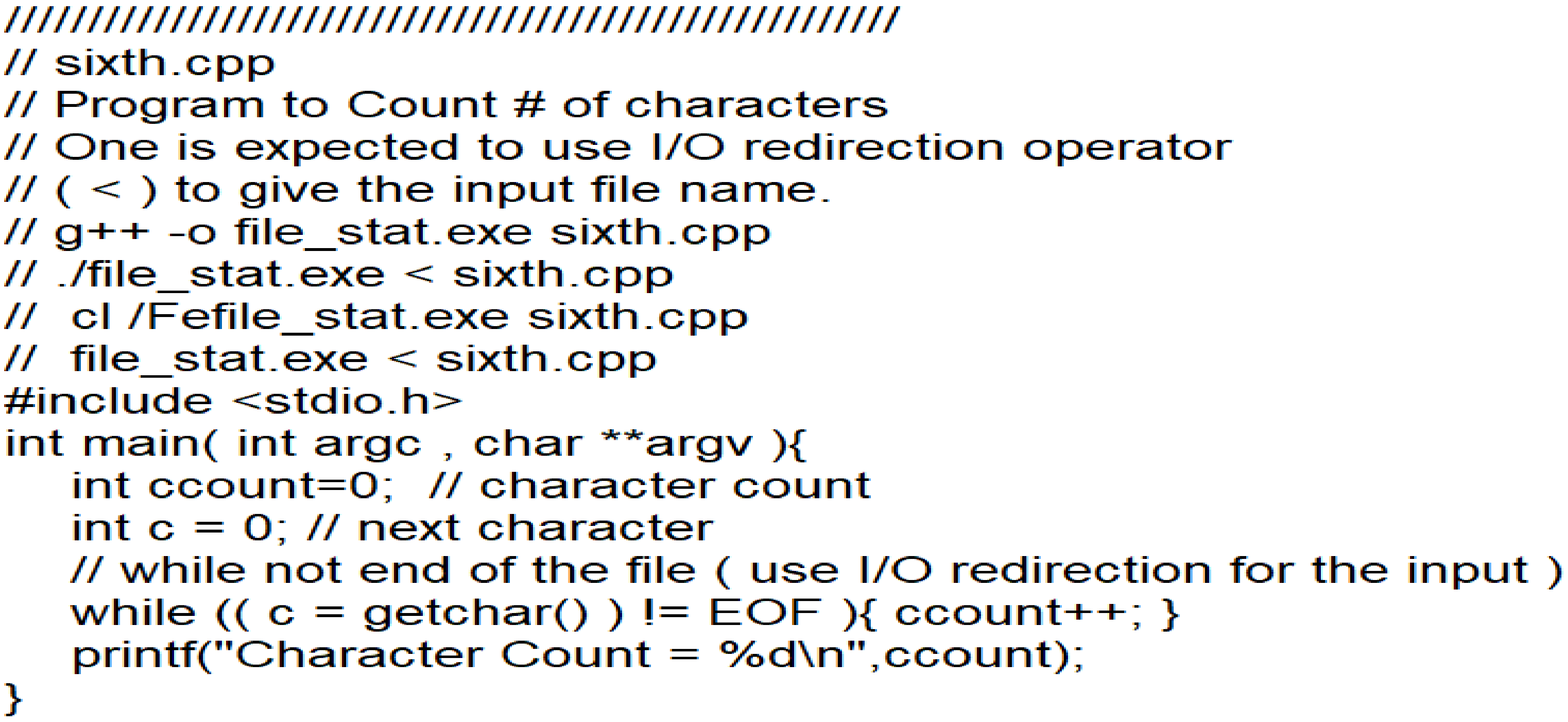
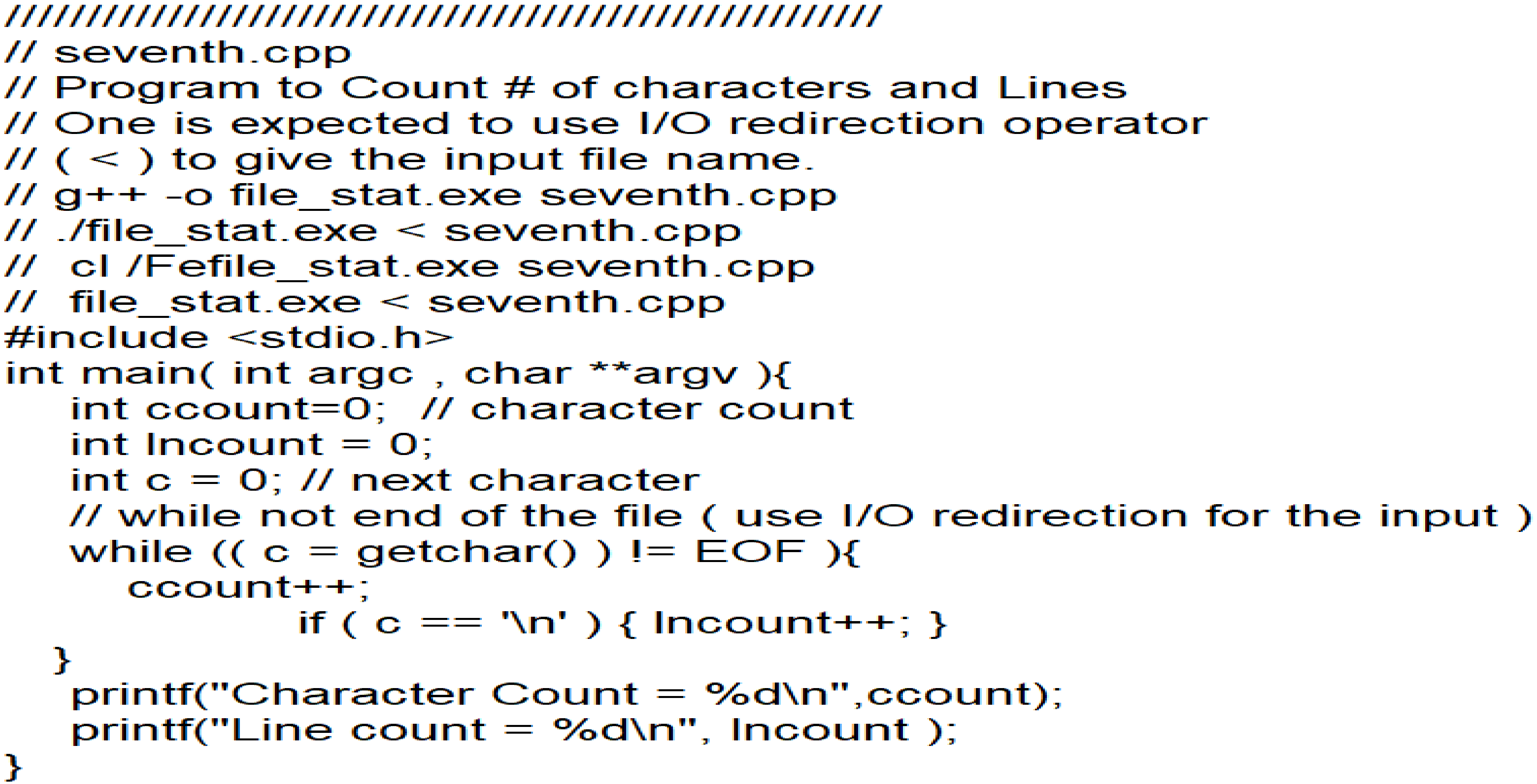
The Character Count Program (sixth.cpp)



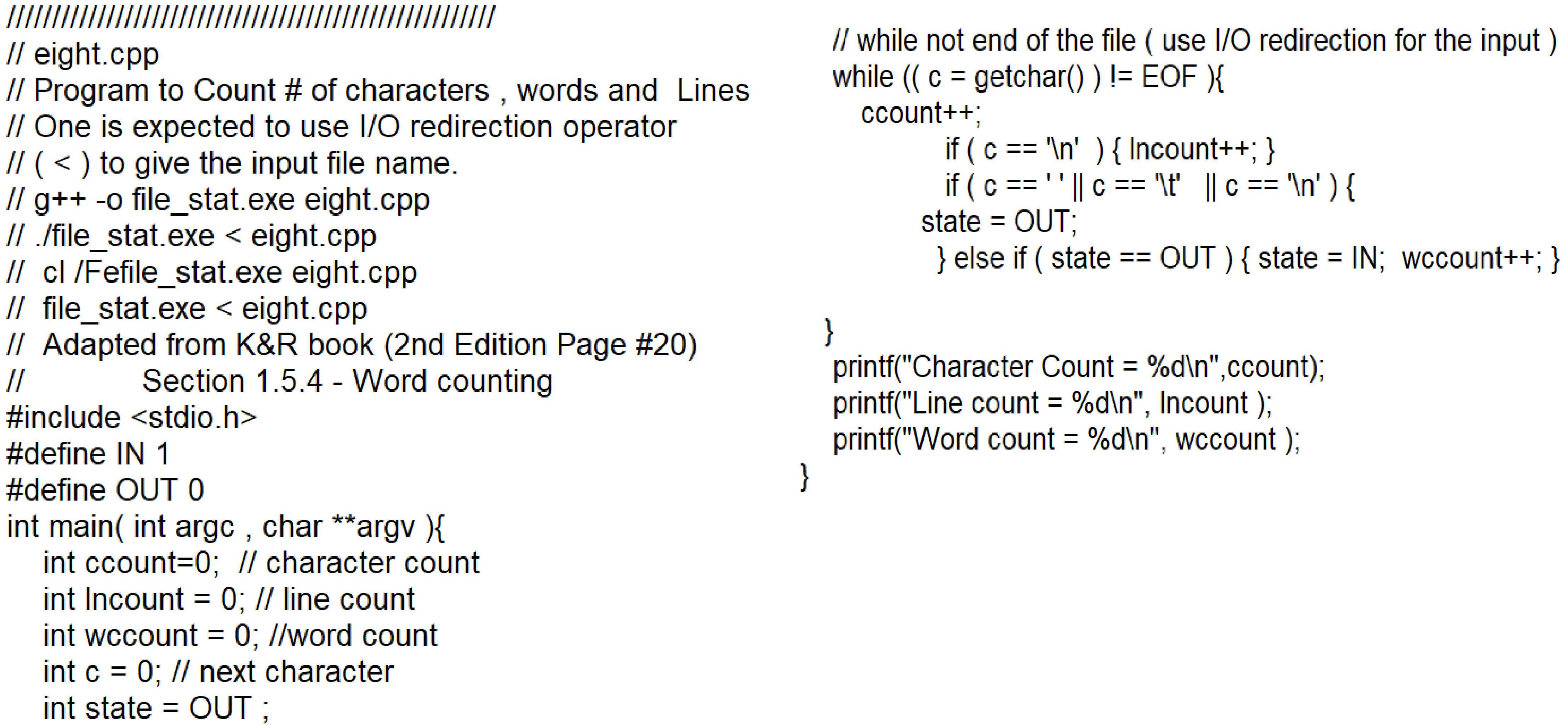
```
////////////////////////////////////////////////////////////
// sixth.cpp
// Program to Count # of characters
// One is expected to use I/O redirection operator
// ( < ) to give the input file name.
// g++ -o file_stat.exe sixth.cpp
// ./file_stat.exe < sixth.cpp
//  cl /Fefile_stat.exe sixth.cpp
//  file_stat.exe < sixth.cpp
#include <stdio.h>
int main( int argc , char **argv ){
    int ccount=0;  // character count
    int c = 0; // next character
    // while not end of the file ( use I/O redirection for the input )
    while (( c = getchar() ) != EOF ){ ccount++; }
    printf("Character Count = %d\n",ccount);
}
```

The Character Count/Line Count Program (seventh.cpp)



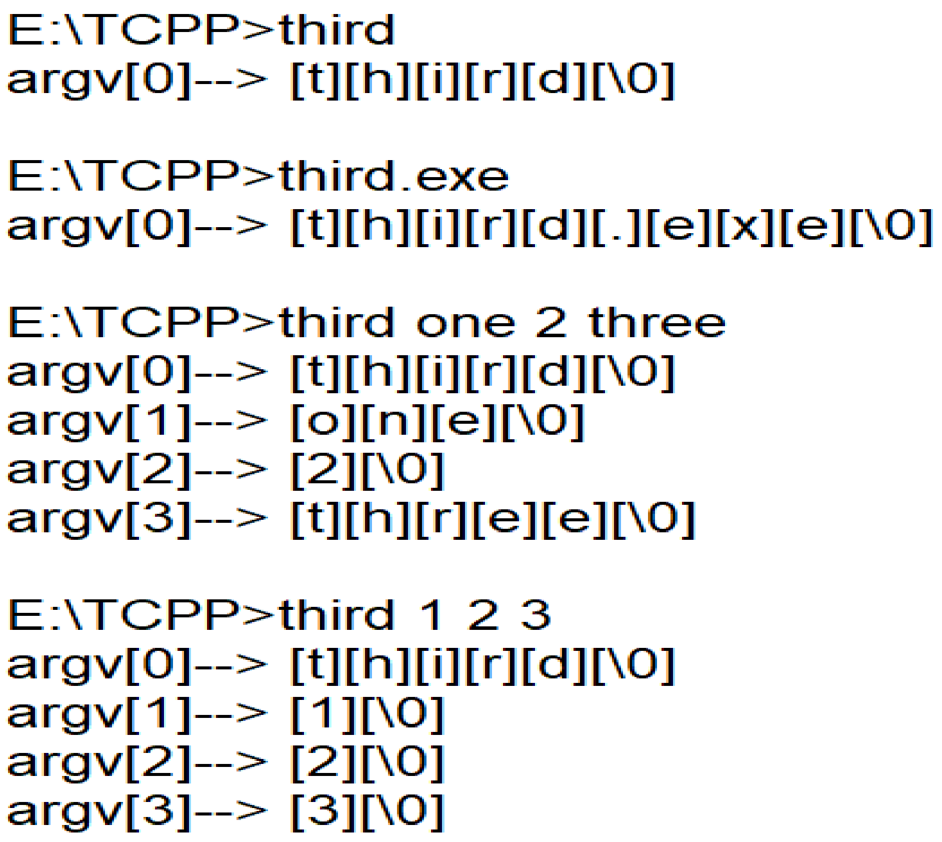
```
//////////////////////////////////////////////////////////////
// seventh.cpp
// Program to Count # of characters and Lines
// One is expected to use I/O redirection operator
// ( < ) to give the input file name.
// g++ -o file_stat.exe seventh.cpp
// ./file_stat.exe < seventh.cpp
//  cl /Fefile_stat.exe seventh.cpp
//  file_stat.exe < seventh.cpp
#include <stdio.h>
int main( int argc , char **argv ){
    int ccount=0;  // character count
    int lncount = 0;
    int c = 0; // next character
    // while not end of the file ( use I/O redirection for the input )
    while (( c = getchar() ) != EOF ){
       ccount++;
              if ( c == '\n' ) { lncount++; }
   }
    printf("Character Count = %d\n",ccount);
    printf("Line count = %d\n", lncount );
}
```

The Character/Word/Line Count (eight.cpp)

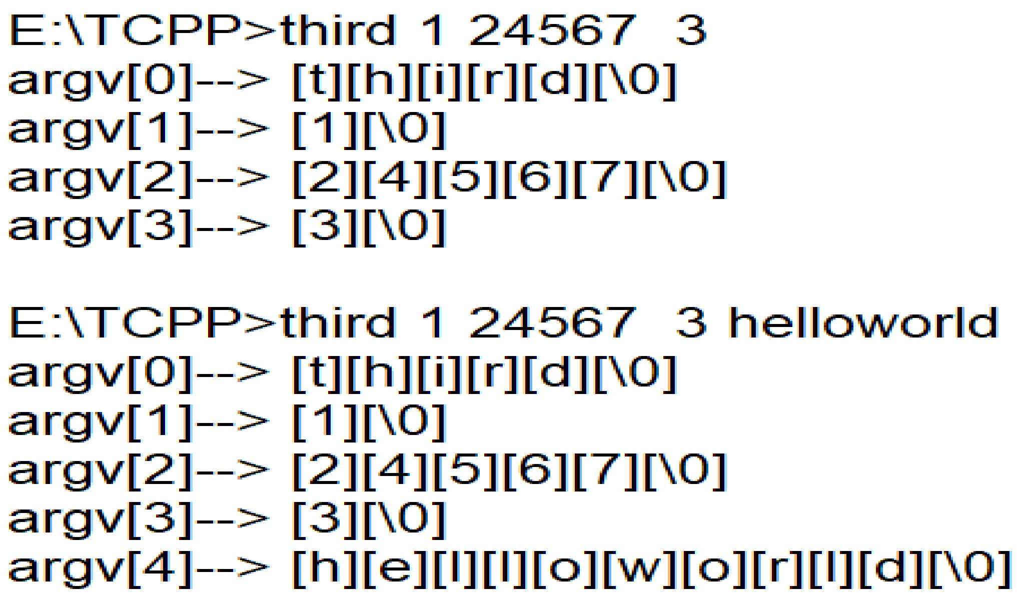


```
//////////////////////////////////////////////////////
// eight.cpp
// Program to Count # of characters , words and  Lines
// One is expected to use I/O redirection operator
// ( < ) to give the input file name.
// g++ -o file_stat.exe eight.cpp
// ./file_stat.exe < eight.cpp
//  cl /Fefile_stat.exe eight.cpp
//  file_stat.exe < eight.cpp
//  Adapted from K&R book (2nd Edition Page #20)
//            Section 1.5.4 - Word counting
#include <stdio.h>
#define IN 1
#define OUT 0
int main( int argc , char **argv ){
    int ccount=0;  // character count
    int lncount = 0; // line count
    int wccount = 0; //word count
    int c = 0; // next character
    int state = OUT ;
    // while not end of the file ( use I/O redirection for the input )
    while (( c = getchar() ) != EOF ){
       ccount++;
                if ( c == '\n'  ) { lncount++; }
                if ( c == ' ' || c == '\t'   || c == '\n' ) {
              state = OUT;
                } else if ( state == OUT ) { state = IN;  wccount++; }

   }
    printf("Character Count = %d\n",ccount);
    printf("Line count = %d\n", lncount );
    printf("Word count = %d\n", wccount );
}
```

Topology of the Command line

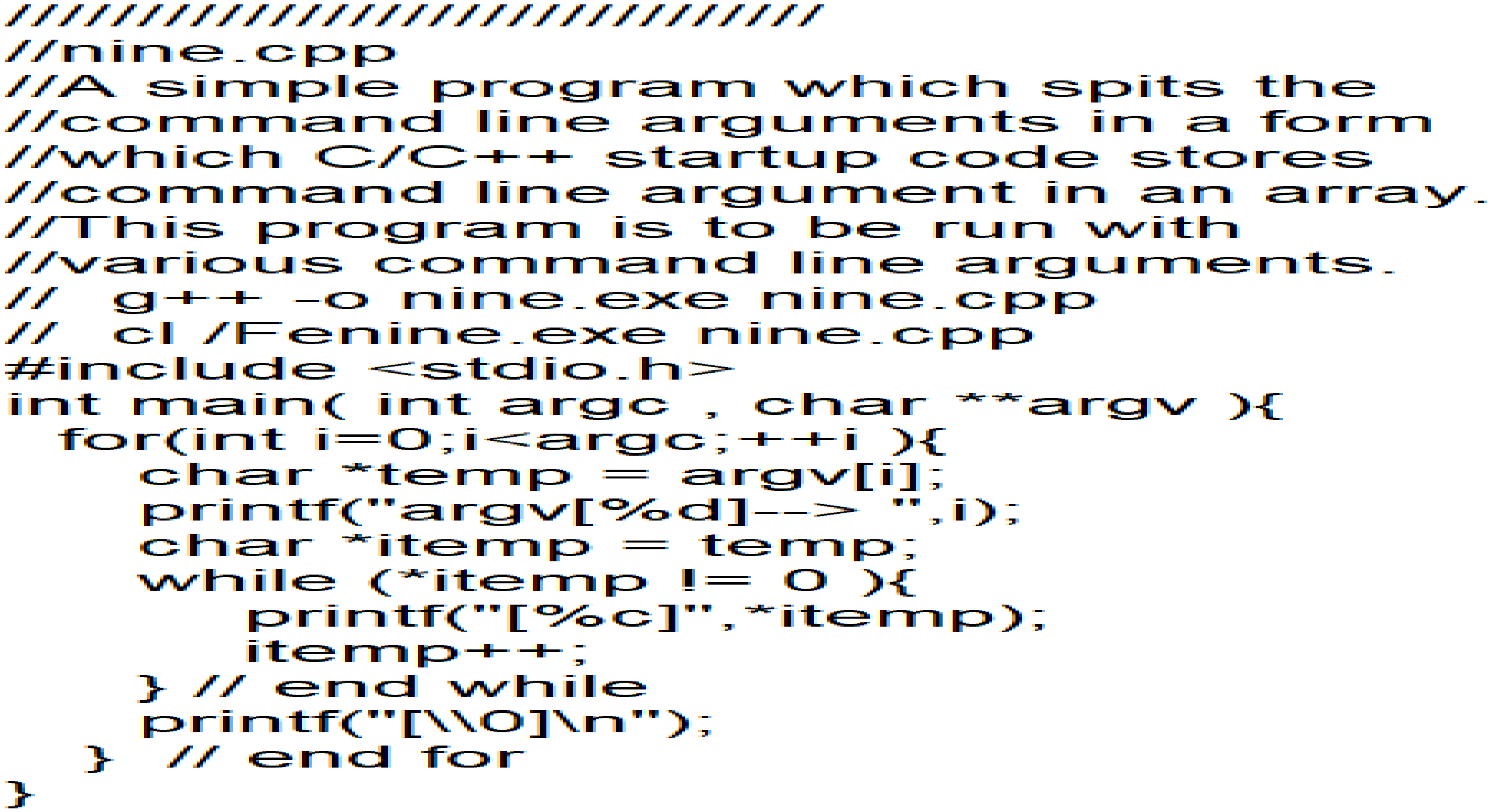


```
E:\TCPP>third
argv[0]--> [t][h][i][r][d][\0]

E:\TCPP>third.exe
argv[0]--> [t][h][i][r][d][.][e][x][e][\0]

E:\TCPP>third one 2 three
argv[0]--> [t][h][i][r][d][\0]
argv[1]--> [o][n][e][\0]
argv[2]--> [2][\0]
argv[3]--> [t][h][r][e][e][\0]

E:\TCPP>third 1 2 3
argv[0]--> [t][h][i][r][d][\0]
argv[1]--> [1][\0]
argv[2]--> [2][\0]
argv[3]--> [3][\0]
```



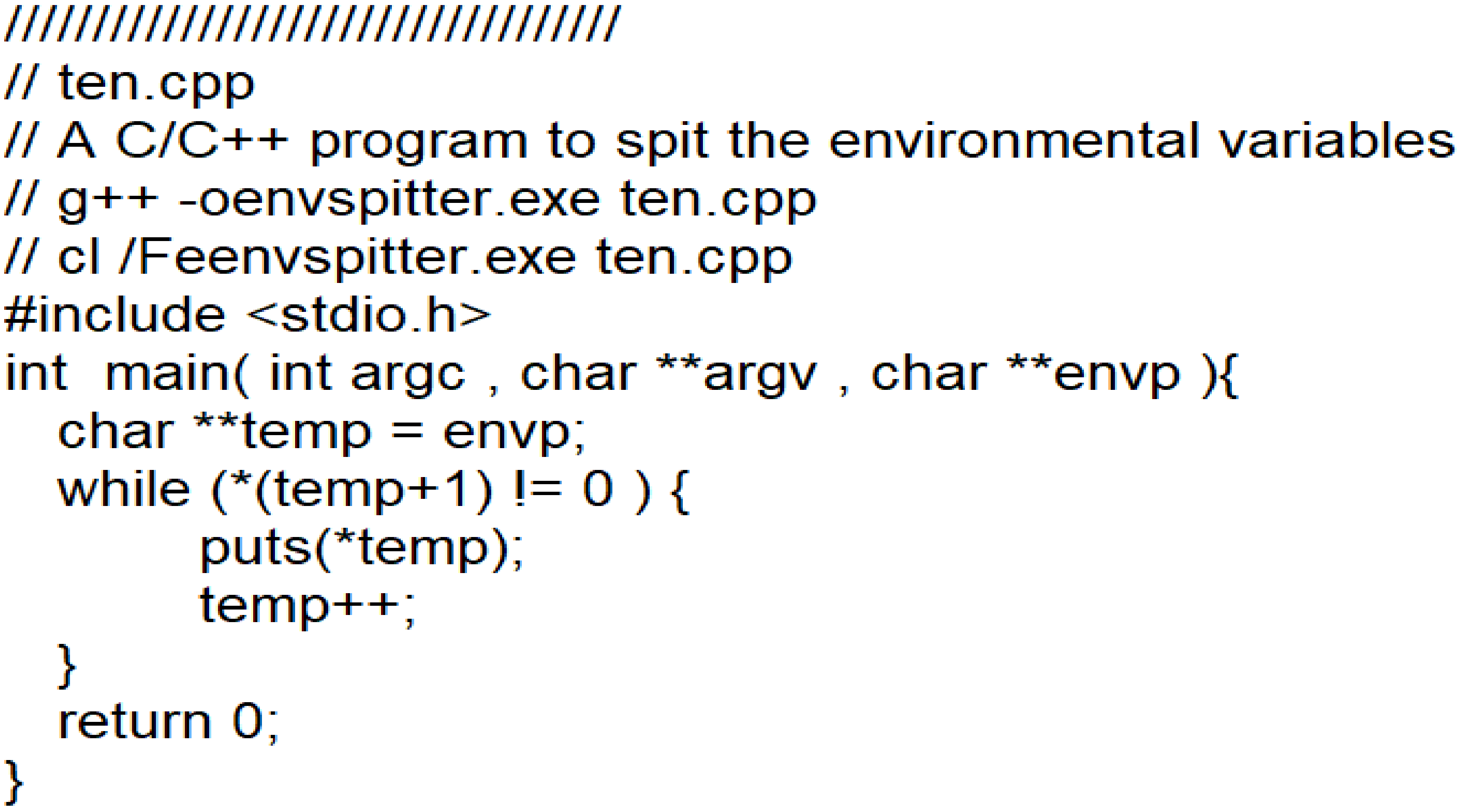
```
E:\TCPP>third 1 24567  3
argv[0]--> [t][h][i][r][d][\0]
argv[1]--> [1][\0]
argv[2]--> [2][4][5][6][7][\0]
argv[3]--> [3][\0]

E:\TCPP>third 1 24567  3 helloworld
argv[0]--> [t][h][i][r][d][\0]
argv[1]--> [1][\0]
argv[2]--> [2][4][5][6][7][\0]
argv[3]--> [3][\0]
argv[4]--> [h][e][l][l][o][w][o][r][l][d][\0]
```

Spit the Topology of the Command line arguments (nine.cpp)



```
///////////////////////////////
//nine.cpp
//A simple program which spits the
//command line arguments in a form
//which C/C++ startup code stores
//command line argument in an array.
//This program is to be run with
//various command line arguments.
//  g++ -o nine.exe nine.cpp
//  cl /Fenine.exe nine.cpp
#include <stdio.h>
int main( int argc , char **argv ){
  for(int i=0;i<argc;++i ){
     char *temp = argv[i];
     printf("argv[%d]--> ",i);
     char *itemp = temp;
     while (*itemp != 0 ){
         printf("[%c]",*itemp);
         itemp++;
     } // end while
     printf("[\\0]\n");
   }  // end for
}
```

Spit the Environment Variables (ten.cpp)



```
///////////////////////////////////
// ten.cpp
// A C/C++ program to spit the environmental variables
// g++ -oenvspitter.exe ten.cpp
// cl /Feenvspitter.exe ten.cpp
#include <stdio.h>
int  main( int argc , char **argv , char **envp ){
   char **temp = envp;
   while (*(temp+1) != 0 ) {
            puts(*temp);
            temp++;
   }
   return 0;
}
```

Questions

- The Source code is available @ https://github.com/praseedpai/BasicCppCourse/tree/main/Part2
- The Slide is also available as PDF from the Above URL
- Any?