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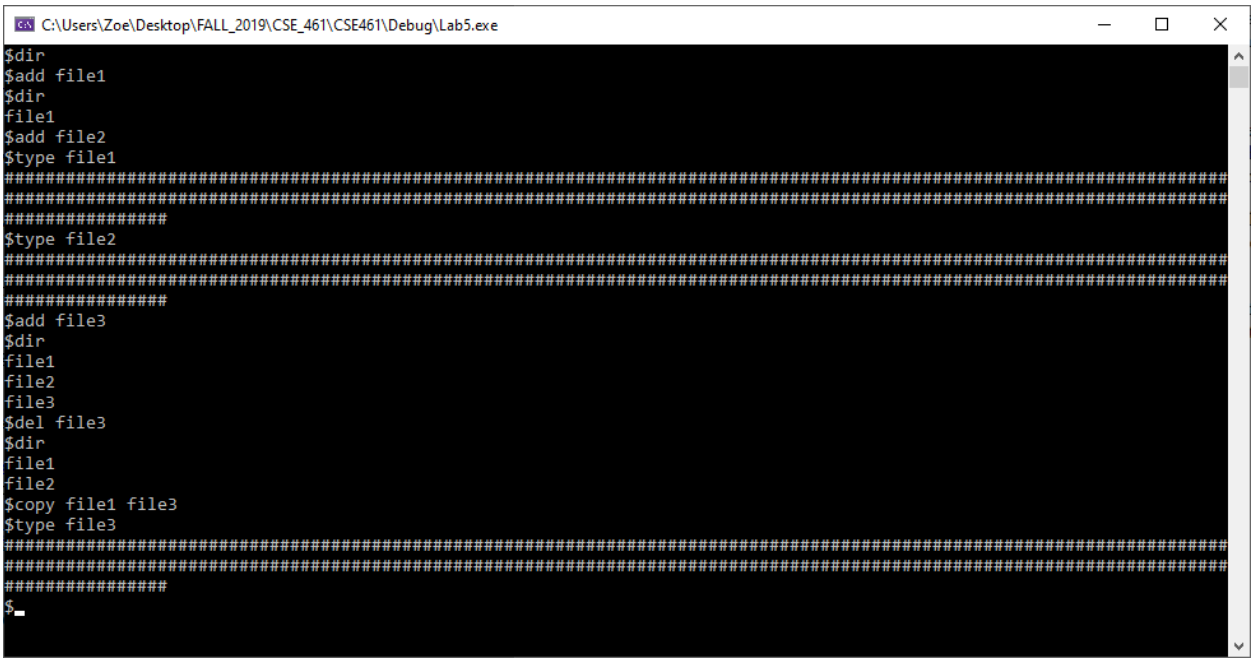
Lab 6




```
#include <iostream>
#include "shell.h"


int main(int argc, char* argv) {
  //
 //This main program inputs commands to the shell.
 //It inputs commands as : command op1 op2
 //You should modify it to work for your implementation.
 //
  Sdisk diskA("diskA", 256, 128);
  FileSystem fsys("diskA", 256, 128);
  Shell shell("diskA", 256, 128);

  std::string s;
  std::string command = "go";
  std::string op1, op2;

  while (command != "quit") {
    command.clear();
    op1.clear();
    op2.clear();
    std::cout << "$";
    std::getline(std::cin, s);
    int firstblank = s.find(' ');
    if (firstblank < s.length()) s[firstblank] = '#';
    int secondblank = s.find(' ');
    command = s.substr(0, firstblank);
    if (firstblank < s.length())
      op1 = s.substr(firstblank + 1, secondblank - firstblank - 1);
    if (secondblank < s.length())
      op2 = s.substr(secondblank + 1);
```

```
    if (command == "dir") {
      // use the ls function
      shell.Directory();
    }
    if (command == "add") {
      // The variable op1 is the new file
      shell.Add(op1);
    }
    if (command == "del") {
      // The variable op1 is the file
      shell.Delete(op1);
    }
    if (command == "type") {
      // The variable op1 is the file
      shell.Type(op1);
    }
    if (command == "copy") {
      // The variable op1 is the source file and the variable op2 is the destination
file.
      shell.Copy(op1, op2);
    }

  }

  return 0;
}
```

```
#include "fileSystem.h"

class Shell : public FileSystem {
public:
  Shell(std::string filename, int numberofblocks, int blocksize);
  int Directory();// lists all files
  int Add(std::string file);// add a new file using input from the keyboard
  int Delete(std::string file);// deletes the file
  int Type(std::string file);//lists the contents of file
  int Copy(std::string file1, std::string file2);//copies file1 to file2
private:
  const int FILENAME_SIZE = 5;
};
```

```
#include "shell.h"

Shell::Shell(std::string filename, int numberofblocks, int blocksize) :
  FileSystem(filename, numberofblocks, blocksize){
}

int Shell::Directory() {
  std::vector<std::string> fileList = List();
  for (unsigned int i = 0; i < fileList.size(); i++) {
    printf("%s\n", fileList[i].c_str());
  }
  return 0;
}

int Shell::Add(std::string file) {
```

```
  if (file.size() > FILENAME_SIZE) {
    printf("file name to large\n");
    return 0;
  }
  if (NewFile(file))
    return 1;

  printf("file already exsits\n");
  return 0;
}

int Shell::Delete(std::string file) {
  RemoveFile(file);
  return 0;
}

int Shell::Type(std::string file) {
  int firstBlock = GetFirstBlock(file).first;
  if (firstBlock == 0) {
    printf("file does not exist\n");
    return 0;
  }

  std::string buffer;
  for (int i = firstBlock; i != 0; i = NextBlock(file, i)) {
    ReadBlock(file, i, buffer);
    printf("%s", buffer.c_str());
  }
  printf("\n");

   return 1;
}

int Shell::Copy(std::string file1, std::string file2) {

  int firstBlock = GetFirstBlock(file1).first;
  if (firstBlock == 0) {
    printf("file does not exist\n");
    return 0;
  }
  std::string buffer;
  std::string bufferCopy{ "" };
  int k{ 0 };
  for (int i = firstBlock; i != 0; i = NextBlock(file1, i)) {
    ReadBlock(file1, i, buffer);
    bufferCopy += buffer;
    ++k; //number of blocks needed
  }
  unsigned int bufferSize{ buffer.size() };
  int j{ 0 };
  firstBlock = GetFirstBlock(file2).first;
  if (firstBlock == 0) {
    Add(file2);
    firstBlock = GetFirstBlock(file2).first;
  }

  for (int i = firstBlock; j != k; i = NextBlock(file2, i)) {
    if (i == 0) {
```

```
      buffer = bufferCopy.substr(bufferSize * j, bufferSize);
      AddBlock(file2, buffer);
    }
    else {
      buffer = bufferCopy.substr(bufferSize * j, bufferSize);
      WriteBlock(file2, i, buffer);
    }
    ++j;
  }
  return 0;
}
```