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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEER



PROGRAMMING FUNDAMENTALS PROJECT REPORT

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1 Introduction

In this assignment, you have to build a simple application that can load and display the content of a CSV file. Students are not allowed to use any external library. After loading the CSV file, you have to give an option for the user to search on a particular field.

2 Implementation

2.1 The very first idea when parsing the requirements

First, we need an CSV file for further requirements.

Second, after deciding format of CSV file, parsing it by using fscanf with particular configuration. For looking up a particular aspect in CSV file, we need to store it into an array of structs for easily accessing.

2.2 Source Code

The link of source code is below.

<https://github.com/TieuLong98/FundamentalProgramming>

2.3 Explanation

At the beginning, generating a struct character with 4 elements: name,born,major and numb for further processes.

```
typedef struct
{
    char name[50];
    int born;
    char major[50];
    int numb;
}Character;
```

Follow the main program, link the path of the CSV file as below.

```
file = fopen("C:/Users/admin/Desktop/FundamentalProgramming/Project.csv","r");
```

If there is something wrong with the path or the file, there will be a message then terminate the program.

```
if( file == NULL){
    printf("Error When Opening File!!\n");
    return 1;
}
```

We start a loop for parsing and storing the input here which are CSV elements into 4 variables generated at the beginning belong to a character structure until the end of the file.

If the variable **read** is 4 that means we pass all the elements in CSV file (The file is generated ideally with 4 elements) and moving to next character else there is something wrong with the format so that there will be a message and terminates after that.

If everything is done, we close the stream.

```
Character nhanvat[100];
int read = 0;
int records = 0;
do
{
    read = fscanf(file,"%[^,],%d,%[^,],%d\n",
                  &nhanvat[records].name,
                  &nhanvat[records].born,
                  &nhanvat[records].major,
                  &nhanvat[records].numb);
    //if read == 4 that means it reaches all columns so row will increase continuously
    if(read == 4) records++;
    //Records is unlimited just satisfy the format of read is 4 variables above
    if(read != 4 && !feof(file))
    {
        printf("Format Is Incorrect!!\n");
        //Check format
        printf("%d",read);
        return 1;
    }

    if(ferror(file))
    {
        printf("Error When Loading File!!\n");
        return 1;
    }
}while(!feof(file));

fclose(file);
```

Print out all the information of characters.

```
printf("Number of Characters is: %d\n",records);

for(int i = 0; i < records; i++)
{
    printf("%s %d %s %d\n",
           nhanvat[i].name,
           nhanvat[i].born,
           nhanvat[i].major,
           nhanvat[i].numb);
}
```

As the requirement is to search a particular field so that i choose the name of character. I will get the name input from **User** then check it with the names already stored in array then print out all information belong to that character with 3 times try then terminate.

```
do
{
    printf("\nPlease Input The Name to Search: ");
    scanf("%s",search);
    flag++;
    for(int i = 0; i < records; i++)
    {
        check = strcmp(search,nhanvat[i].name);
        if(check == 0 )
        {
            printf("Found!!!\n");
            printf("Name: %s \nBorn: %d \nMajor: %s \nNumb: %d\n",
                nhanvat[i].name,
                nhanvat[i].born,
                nhanvat[i].major,
                nhanvat[i].numb);
        }
    }
}while(flag < 3);

return 0;
```

2.4 Results

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

```
PS C:\Users\admin> cd "c:\Users\admin\Desktop\FundamentalProgramming\" ; if ($?) { gcc App.c -o App } ; if ($?) { .\App }
```

Number of Characters is: 6

HoangLong 1998 computerEngineering 1

UngHoangPhuc 1981 Singer 2

StevenChou 1962 Actor 3

NgoManhDat 1952 Actor 4

ChauNhuanPhat 1955 Actor 5

KwonJiYong 1988 Singer 6

Please Input The Name to Search: HoangLong

Found!!!


Name: HoangLong

Born: 1998

Major: computerEngineering

Numb: 1

Please Input The Name to Search: so we have 2 times more to search

 Project.csv - Notepad

File Edit Format View Help

HoangLong,1998,computerEngineering,1

UngHoangPhuc,1981,Singer,2

StevenChou,1962,Actor,3

NgoManhDat,1952,Actor,4

ChauNhuanPhat,1955,Actor,5

KwonJiYong,1988,Singer,6