

# 2021 Spring CPSC 240

## Assignment 4 King of Assembly

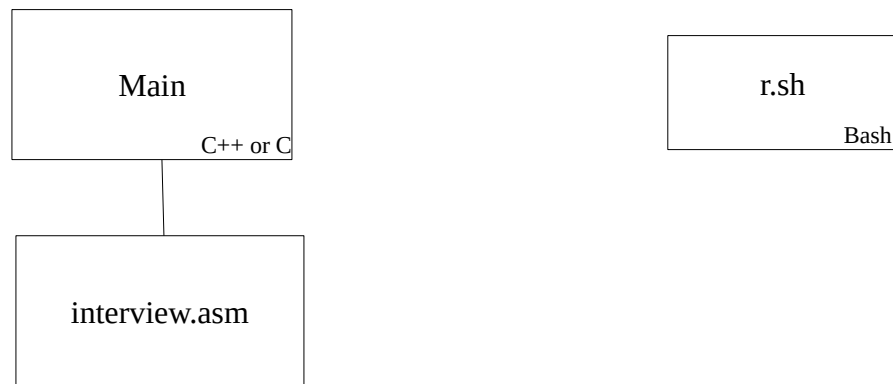
### New technology found in this program.

How to input a string with embedded white space  
How to input a char  
How to use an input data file.

There is no GDB in Assignment 4 Part 1

### Structural design

This is going to be easy. You only need two modules.



However, this is a rare case. This is the only time the driver (main) gets involved with the solution. You may need two bash files, one named r.sh and the other named rg.sh.

### Three kinds of programmers

Your software has to accommodate all three kinds: social science majors, CS majors, and assembly programmer types.

## Requirements

Build a program that handles all three kinds of job applicants shown in the following dialogs.

If the person applying for a job at your company is a CS major type then the dialog goes like this:

```
Welcome to Software Analysis by Paramount Programmers, Inc.  
Please enter your first and last names and press enter: Joey Brown  
Thank you Joey Brown. Our records show that you applied for employment here  
with our agency a week ago.  
Please enter your expected annual salary when employed at Paramount: 500500.50  
Your interview with Ms Linda Fenster, Personnel Manager, will begin shortly.  
Hello Joey Brown. I am Ms Fenster. The interview will begin now.  
Wow! $500500.50 That's a lot of cash. Who do you think you are, Chris  
Sawyer (y or n)?n  
Alright. Now we will work on your electricity.  
Please enter the resistance of circuit #1 in ohms: 2.0  
What is the resistance of circuit #2 in ohms: 3.0  
The total resistance is 1.2000000000000000 Ohms.  
Were you a computer science major (y or n)?y  
Thank you. Please follow the exit signs to the front desk.  
Hello Joey Brown I am the receptionist.  
This envelope contains your job offer with starting salary 88000.88. Please  
check back on Monday morning at 8am.  
Bye
```

Color code: The part in yellow is produced by the interview module. The remainder comes from the driver.

The floating point number 88000.88 is returned to front desk whenever a CS major completes the interview and answers correctly the technical question about Ohms../x86-io.out

If the person applying for a job at your company is Chris Sawyer then the dialog goes like this.

Welcome to Software Analysis by Paramount Programmers, Inc.

Please enter your first and last names and press enter: Chris Sawyer

Thank you Chris Sawyer. Our records show that you applied for employment here with our agency a week ago.

Please enter your expected annual salary when employed at Paramount: 500500.50

Your interview with Ms Linda Fenster, Personnel Manager, will begin shortly.

Hello Chris Sawyer. I am Ms Fenster. The interview will begin now.

Wow! \$500500.50 That's a lot of cash. Who do you think you are, Chris Sawyer (y or n)?y

Thank you. Please follow the exit signs to the front desk.

Hello Mr Sawyer. I am the receptionist.

This envelope has your job offer starting at 1 million annual. Please start any time you like. In the meantime our CEO wishes to have dinner with you.

Have very nice evening Mr Sawyer.

If Chris applies for a job then Ms Fenster sends the code number 1 000 000.00 to the front desk.

If the person applying for a job at your company is a social major then the dialog goes like this.

Welcome to Software Analysis by Paramount Programmers, Inc.

Please enter your first and last names and press enter: Joey Brown

Thank you Joey Brown. Our records show that you applied for employment her with our agency a week ago.

Please enter your expected annual salary when employed at Paramount: 500500.50

Your interview with Ms Linda Fenster, Personnel Manager, will begin shortly.

Hello Joey Brown. I am Ms Fenster. The interview will begin now.

Wow! \$500500.50 That's a lot of cash. Who do you think you are, Chris Sawyer (y or n)?n

Alright. Now we will work on your electricity.

Please enter the resistance of circuit #1 in ohms: 5.3

What is the resistance of circuit #2 in ohms: 7.5

The total resistance is 4.976 Ohms.

Were you a computer science major (y or n)?n

Thank you. Please follow the exit signs to the front desk.

Hello Joey Brown I am the receptionist

We have an opening for you in the company cafeteria for \$1200.12 annually.

Take your time to let use know your decision.

Bye

If the philosophy major applies for the job then Ms Fenster sends 1200.12 to the front desk in a private envelope.

## Prepare deliverables

Prepare three files `chris.txt`, `csmajor.txt`, and `social.txt`. Each file contains the complete ordered set of inputs needed to interview one kind of job applicant.

Test the program by execution using left-directed arrow of redirection. The command may look like this: `run.sh < chris.txt`.

You need these file:

- main also known a driver
- interview
- bash file
- `chris.txt`
- `csmajor.txt`
- `social.txt`

Submit all the files as attachments to the usual location: [holliday@fullerton.edu](mailto:holliday@fullerton.edu)

**Submission window:** any time up to May 20, 2021 at 6:00pm

You may submit it early if you wish.

Please wait for the due time to pass before posting your programs on public sites.

*Special acknowledgment to Luke Eltiste, who first brought this controversy to my attention and lent me a few files of source code that really convinced me of the need for a revised edition of this Assignment description. If he had not shown me the impossible task early you would all be working on something that cannot be done.*

## What happened to part 2

To everyone. Originally, I had planned to have an addon called "Part 2" that would provide some experience in using gdb commands. The commands were to be placed into a text file and gdb system would read commands from the file.

Unfortunately, that concept does not work. I have researched the matter extensively and absolutely no online even comes close to mentioning the concept. I have tried many different approaches to solving this problem, and none worked.

I can't give you an assignment if I can't do myself.

Therefore, the old part 2 is gone. In the coming days I will look for a replacement also to be called "part 2". I hope to find an easy exercise that gives practice in using GDB.