2021 Spring CPSC 240
Assignment 4 King of Assembly Part 1
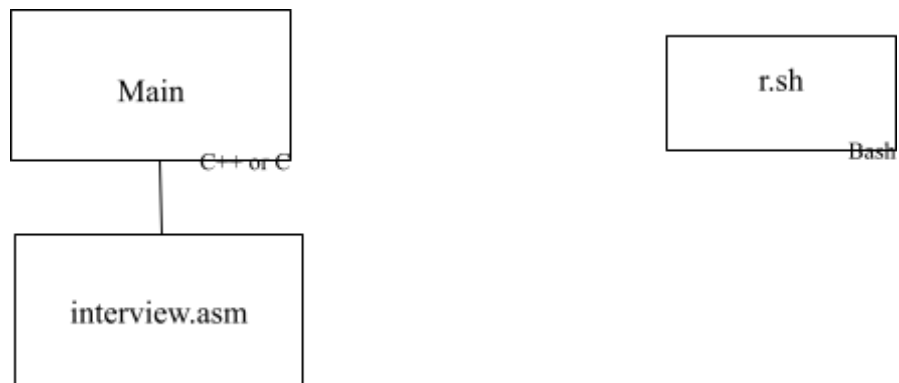
New technology found in this program.

> 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.

Part 1

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 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 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 middle time our CTO 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

Submission window: 5:00am of April 27 to 5:00am of April 28. [24 hours]

It is still 24 hours, but the start and stop hours have shifted due to day light pacific time zone.

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.

Ethical standards

I believe in
      open source programming
      free software
      courtesy and kindness
      communities of programmer helping each other
      peer-to-peer teaching

When you are developing homework share snippets with a classmate. Don't simply hand over an entire program, but give exactly the help needed for the other person make some progress.

Please don't post your entire program until after the due date has past. After the due date you are free to post it at any site you want. Start with github.

Who knows what will happen to your old homework! A student in the future may discover it and find it to be a treasure in completing an assignment. You'll make the day for some unknown student of the future.

I hope that somewhere somebody will find the solution to an old assignment I gave in the past and be able to use that program in the completion of a current assignment.