CS402 – Assignment

In this assignment students need to build a Linux CLI shell in C programming language. This shell should be executable like any other Linux shell in the terminal. The shell will contain set of features which can be understood by working around other Linux shells such as bash or zsh. The assignment is divided into pre-lab, in-lab, and post-lab.

Pre-lab

For pre-lab students are required to get familiarized with the basics of C language and learn about the different features available in other Linux shells. Then they should select the features that they would like to implement in their own shell.

To make students familiar with C language, a couple of sample programs are given below. But students are encouraged to learn more about the language and also the features.

Sample program 1:

In this program students are required to print the word, “hello world”.

```
#include <stdio.h>

int main(){

   printf(“Hello world”);
   return 0;

}
```

Sample program 2:

In this program students are required to make a simple calculator using switch case.

```
#include <stdio.h>

int main() {

  char op;
  double first, second;
  printf("Enter an operator (+, -, *, /): ");
  scanf("%c", &op);
  printf("Enter two operands: ");
  scanf("%lf %lf", &first, &second);

  switch (op) {
    case '+':
```

```
    printf("%.1lf + %.1lf = %.1lf", first, second, first + second);
    break;
  case '-':
    printf("%.1lf - %.1lf = %.1lf", first, second, first - second);
    break;
  case '*':
    printf("%.1lf * %.1lf = %.1lf", first, second, first * second);
    break;
  case '/':
    printf("%.1lf / %.1lf = %.1lf", first, second, first / second);
    break;
  default:
    printf("Error! Incorrect operator");

 }

 return 0;

}
```

In-lab

For in-lab, students are required to learn more about the features that they want to implement and start writing the code for a couple of features that they want. These features should be executable in the terminal.

Post-lab

For post-lab, students are required to build all the features that they want in the final shell. The final shell should contain all the features the students decided during in-lab and it must be executable in the terminal.