Assignment4 - Due: Wednesday, September 9th, 5pm

Assignment

CSE/EEE230 Assignment4

Due Date

Wednesday, September 9th, 5pm

Important: This is an individual assignment. Please do not collaborate.

Make sure to follow the academic integrity policies.

It must be submitted on-line (course website).

Go to "GradeScope" tab on Canvas -> CSE/EEE230 -> Assignment4, and upload your program file.

No late assignment will be accepted

Minimal Submitted Files

You are required to turn in the following source file:

assignment4.s

Objectives:

-write assembly language programs to:

-perform decision making using branch instructions.

-use **syscall** operations to display integers and strings on the console window

-use **syscall** operations to read integers from the keyboard.

Assignment Description:

Write a MIPS assembly language program that reads a customer's current and previous meter readings of electricity and a month to compute its electricity bill.
If a customer spent 0 or less (technically this should not happen, though) KWH (kilowatt-hours) that is computed by current meter reading - previous meter reading,
then the program should print out "No bill to pay this month.\n".
If a customer spent less than or equals to 250 KWH in a month, then the payment should be 25 dollars.
If a customer spent more than 250 KWH in a month of June, July, August, or September, then the bill amount is computed by:
bill amount= (KWH for the Month-250)/18 + 25;
If a customer spent more than 250 KWH in any other month, then the payment is compute by:
bill amount= (KWH for the Month-250)/20 + 25;

Then if the payment is greater than 0, it should print out the payment amount, along with its used KWH.

Name your source code file Assignment4.s.

The following shows how it looks like in a C program:

```
int newMeter;
int oldMeter;
int KWHforMonth;
int month;
int billAmount;

printf("Please enter the new electricity meter reading:\n");

//read an integer from a user input and store it in newMeter
scanf("%d", &newMeter);

printf("Please enter the old electricity meter reading:\n");

//read an integer from a user input and store it in oldMeter
scanf("%d", &oldMeter);

printf("Please enter a month to compute their electricity bill,\n");
printf("Use an integer between 1 and 12 (1 for January, etc.):\n");

//read an integer from a user input and store it in month
scanf("%d", &month);

KWHforMonth = newMeter - oldMeter;

if (KWHforMonth <= 0)
 {
   printf("No bill to pay this month.\n");
 }
else
 {
    //compute its bill
    if (KWHforMonth <= 250)
     {
       billAmount = 25;
     }
    else if (KWHforMonth > 250 && month >= 6 && month <= 9)
     {
       billAmount = (KWHforMonth-250)/18 + 25;
     }
    else
     {
       billAmount = (KWHforMonth-250)/20 + 25;
     }

    //print out the billAmount
    printf("Your total bill amount for this month: %d dollar(s) for %d KWH\n",
billAmount,    KWHforMonth);

  } //end of else
```

Here is a sample output (user input is in bold):

Please enter the new electricity meter reading:
15430
Please enter the old electricity meter reading:
15105
Please enter a month to compute their electricity bill,
Use an integer between 1 and 12 (1 for January, etc.):
5
Your total bill amount for this month: 28 dollar(s) for 325 KWH

Here is another sample output (user input is in bold):

Please enter the new electricity meter reading:
23705
Please enter the old electricity meter reading:
22190
Please enter a month to compute their electricity bill,
Use an integer between 1 and 12 (1 for January, etc.):
8
Your total bill amount for this month: 95 dollar(s) for 1515 KWH

Here is another sample output (user input is in bold):

Please enter the new electricity meter reading:
34525
Please enter the old electricity meter reading:
34291
Please enter a month to compute their electricity bill,
Use an integer between 1 and 12 (1 for January, etc.):
6
Your total bill amount for this month: 25 dollar(s) for 234 KWH

Here is another sample output (user input is in bold):

Please enter the new electricity meter reading:
53205
Please enter the old electricity meter reading:
53205
Please enter a month to compute their electricity bill,
Use an integer between 1 and 12 (1 for January, etc.):
4
No bill to pay this month.

What to turn in:

-Upload your assignment4.s file through the assignment submission link in the course website by the assignment deadline. You must have your name, email address, program description, and other information in the header block as it was described in the assignment 1, and your programs should be well commented.

Go to "GradeScope" tab on Canvas -> CSE/EEE230 -> Assignment4, and upload your program file.

Grading Criteria:

____/ 5 Documentation (header with your name, your information, and program description and comments within your code)

____/ 1 Indentation and spacing (easy to read)

____/ 6 Required functions and functionalities implemented

____/ 8 Produces correct results?

Total points: 20