Assignment4 - Due: Tuesday, February 2, 5pm

Assignment

CSE/EEE230 Assignment4

Due Date

Tuesday, February 2, 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 some ticket purchase information from a customer, whether they are daytime tickets, or night light tickets, how many adult tickets and child tickets they need.

For daytime tickets, customers need to enter 1, for night light tickets, they need to enter 2. If customers enters another number besides 1 or 2, the program should display "Invalid admission." and your program should exit. If the number of adult tickets is less than 0, the number of child tickets is less than 0, or the sum of adult and child tickets is less or equals to 0, then the program should display "Invalid number of tickets." And your program should exit. Each adult ticket for daytime admission is $25, each child ticket for daytime admission is $16, and each adult ticket for night light admission is $20, and each child ticket for night light admission is $10. Your program should compute the total cost and print it along with the number of tickets (people). Your MIPS program needs to work in the same way as the following C program. Please see the sample outputs.

 Name your source code file Assignment4.s.

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

```
    int adults, children;
    int cost;
    int daynight;
```

```c
    int totalPeople;

    printf("Welcome to our Theme Park!\n");
    printf("Choose 1 for Daytime admission, 2 for NightLights.\n");

    //read an integer from a user input and store it in daynight
    scanf("%d", &daynight);
    if (daynight != 1 && daynight != 2)
    {
      printf("Invalid admission.");
    }
    else
    {
      printf("How many adult ticket(s) would you like to purchase?\n");

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

      printf("How many child ticket(s) would you like to purchase?\n");

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

      totalPeople = adults + children;

      if (adults < 0 || children < 0 || totalPeople <= 0)
      {
         printf("Invalid number of tickets");
      }
      else
      {
        if (daynight == 1)
        {
           cost = adults*25 + children*16;
        }
        else if (daynight == 2)
        {
          cost = adults*20 + children*10;
        }
        printf("Your total amount for this purchase: %d dollar(s) for %d peopl
e\n", cost, totalPeople);

      } //end of else

    } //end of else
```

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

Welcome to our Theme Park!

Choose 1 for Daytime admission, 2 for NightLights.

1

How many adult ticket(s) would you like to purchase?

3

How many child ticket(s) would you like to purchase?

5

Your total amount for this purchase: 155 dollar(s) for 8 people

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

_____

Welcome to our Theme Park!

Choose 1 for Daytime admission, 2 for NightLights.

2

How many adult ticket(s) would you like to purchase?

1

How many child ticket(s) would you like to purchase?

8

Your total amount for this purchase: 100 dollar(s) for 9 people

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

Welcome to our Theme Park!

Choose 1 for Daytime admission, 2 for NightLights.

3

Invalid admission.

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

Welcome to our Theme Park!

Choose 1 for Daytime admission, 2 for NightLights.

1

How many adult ticket(s) would you like to purchase?

3

How many child ticket(s) would you like to purchase?

-3

Invalid number of tickets

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