Assembly program
Final exam

Dept. of CSIE
Fu Jen Catholic University,
Hsin Chuang, 24205
Taipei Taiwan.

Golden Rules to follow during your exercise

- Keep your **cell phone** and **USB drive** in your bag.
- When you finish your exercise, **do not talk to others** or **help others**.
- **Do not copy others' work**. Do it by yourself.
- **No drinks** or **water should be placed** on the table. Please keep it in your bag for the safety of your computer.
- Try to write the **code first** before you start using computer to prove that your work is correct.

After you finish your assembly program, Demo it to the Assistant to get the signature.

Then, write the Code in your answer sheet for your grade and return the answer sheet to the Instructor.

After 15 minutes, the network will be turned off, you can not access the network.

ODD Seat numbered students
Program on the next Page.

ODD Program:

Ask the user to enter a string. When a string is entered, call procedure to count the number of vowels (a,e,i,o,u), number of constants, comma, pull stop and whitespaces.
C program is given on the following slides.

Try to translate the C program into Assembly and enter the given two examples and observe that results are correct as given in the example.

Then demo it to the assistant. Write the code and submit for a final grade.

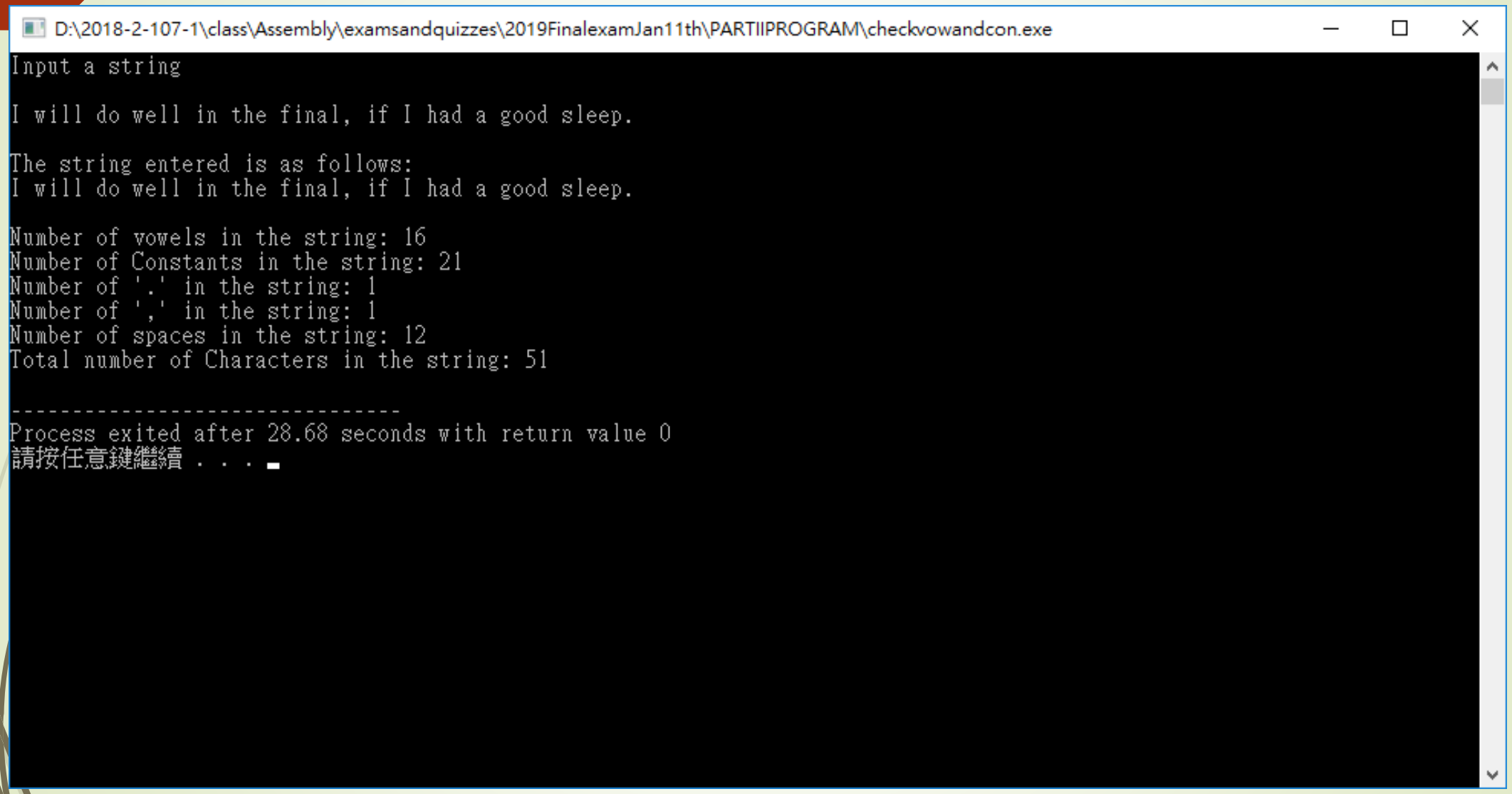
Given the following C code write it in x86 Assembly programming Language and Demo to the assistants.

```
#include <stdio.h>
int main()
{
  int c = 0, count = 0, count1 =0,count2=0,count3=0,count4=0;
  char s[1000];
  printf("Input a string\n\n");
  gets(s);
  printf("\n");
  while (s[c] != '\0') {
       {
    if (s[c] == 'a' || s[c] == 'A' || s[c] == 'e' || s[c] == 'E' || s[c] == 'i' || s[c] == 'I' || s[c] =='o' ||
s[c]=='O' || s[c] == 'u' || s[c] == 'U')
      count++;
    else if(s[c]==' ')
    count1++;
    else if(s[c]=='.')
    count2++;
```

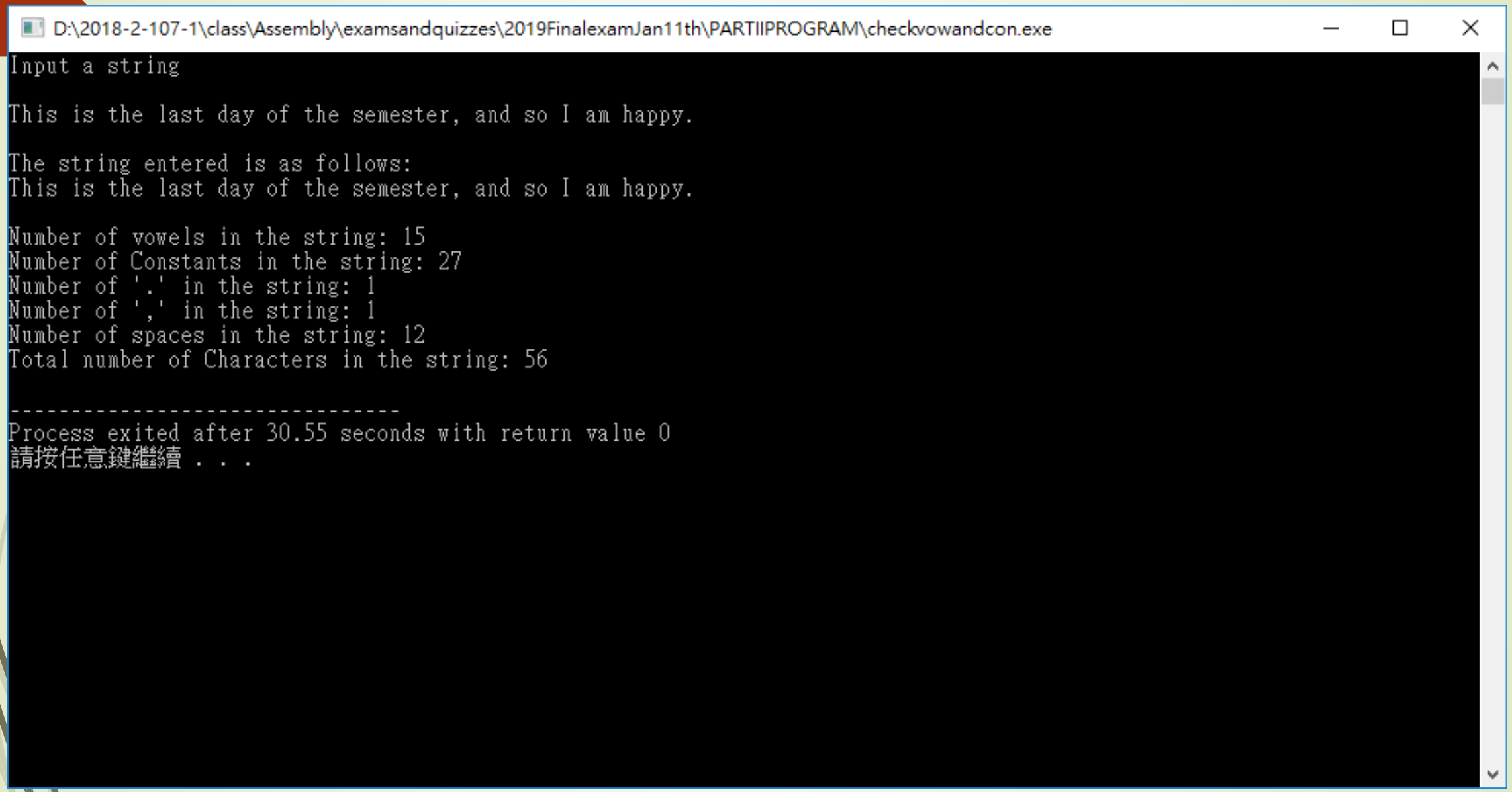
```
 else if(s[c]==',')
   count3++;
   else
     count4++;
  }
   c++;
 }

 printf("The string entered is as follows:\n");
  puts(s);
  printf("\n");
  printf("Number of vowels in the string: %d\n", count);
  printf("Number of Constants in the string: %d\n", count4);
  printf("Number of '.' in the string: %d\n", count2);
  printf("Number of ',' in the string: %d\n", count3);
   printf("Number of spaces in the string: %d\n", count1);
  printf("Total number of Characters in the string: %d\n", c);
  return 0;
}
```

Ex String: I will do well in the final, if I had a good sleep.



Ex String1: This is the last day of the semester, and so I am happy.



After 15 minutes, the network will be turned off, you can not access the network.

EVEN Seat numbered students Program on the next Page.

EVEN Program:

Ask the user to enter a string. When a string is entered, call procedure to count the number of vowels (a,e,i,o,u), number of constants, numbers White spaces and comma.
C program is given on the following slides.

Try to translate the C program into Assembly and enter the given two examples and observe that results are correct as given in the example.

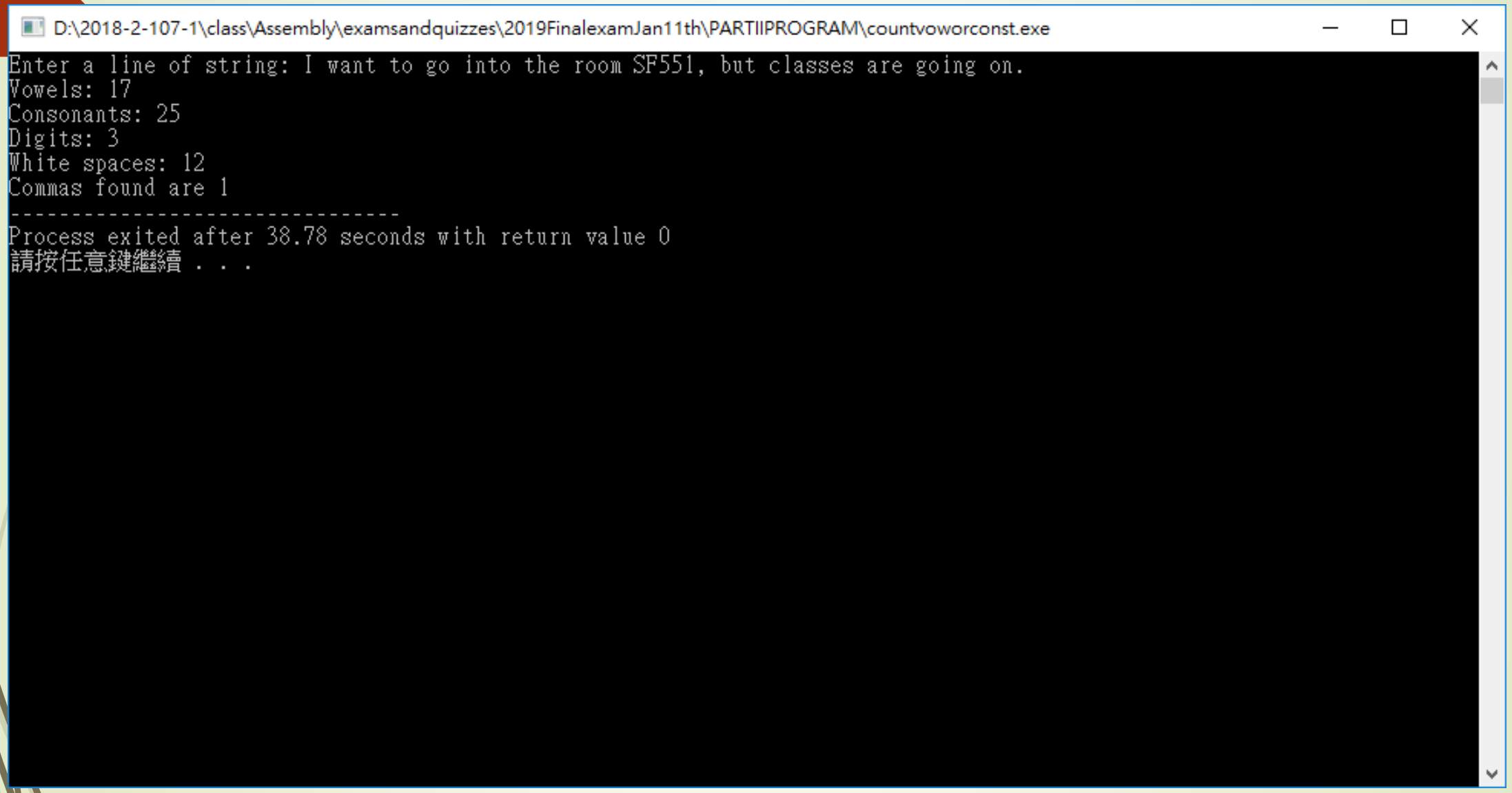
Then demo it to the assistant. Write the code and submit for a final grade.

Given the following C code write it in x86 Assembly programming Language and Demo to the assistants.

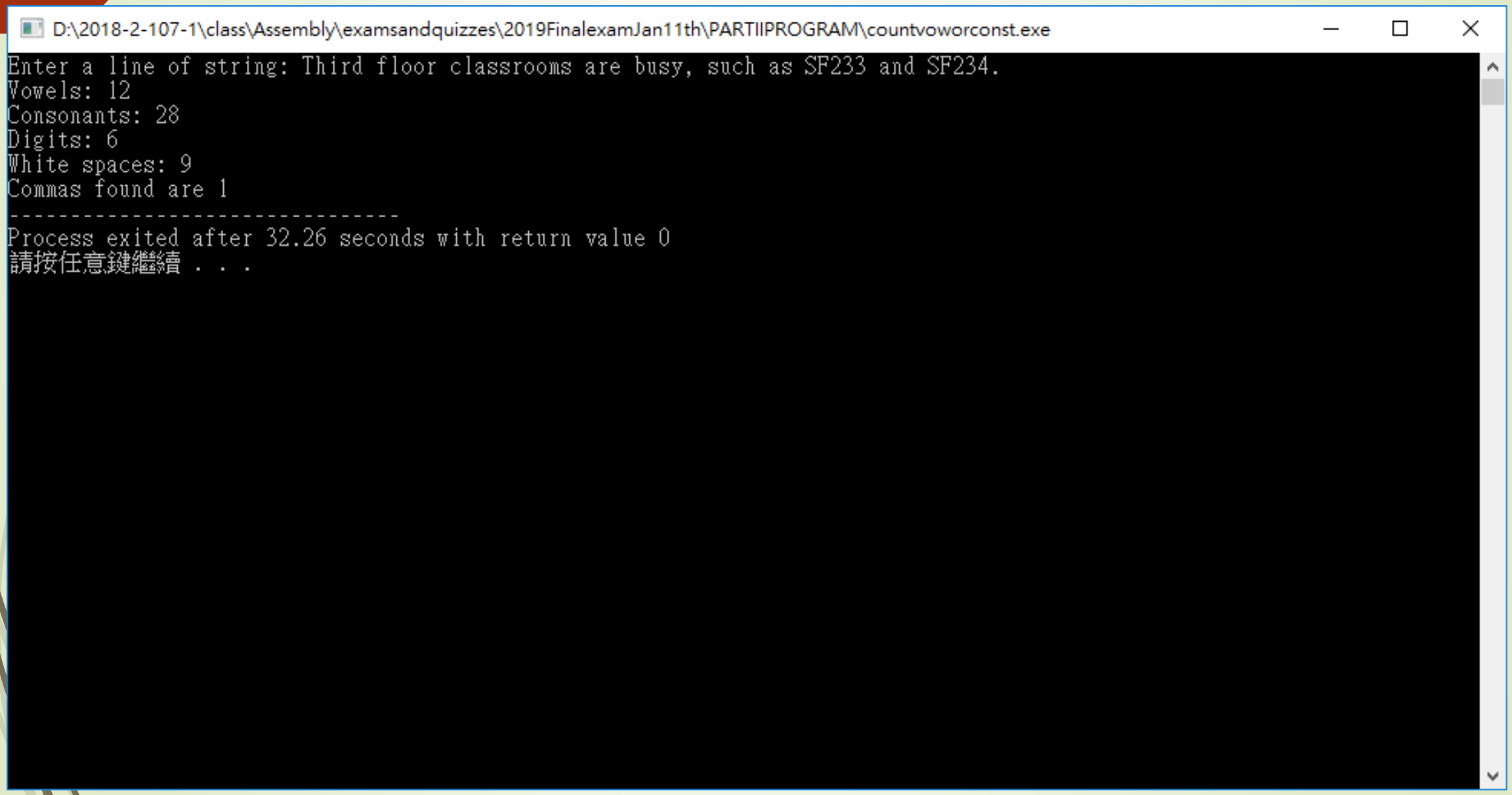
```
clude <stdio.h>
int main()
{
    char line[150];
    int i, vowels, consonants, digits, spaces,comma;
    vowels =  consonants = digits = spaces = comma = 0;
    printf("Enter a line of string: ");
    scanf("%[^\n]", line);
    for(i=0; line[i]!='\0'; ++i)
    {
        if(line[i]=='a' || line[i]=='e' || line[i]=='i' ||
           line[i]=='o' || line[i]=='u' || line[i]=='A' ||
           line[i]=='E' || line[i]=='I' || line[i]=='O' ||
           line[i]=='U')
         {
            ++vowels;
        }
```

```
else if((line[i]>='a'&& line[i]<='z') || (line[i]>='A'&& line[i]<='Z'))
        {
            ++consonants;
        }
        else if(line[i]>='0' && line[i]<='9')
        {
            ++digits;
        }
        else if (line[i]==' ')
        {
            ++spaces;
        }
       else if(line[i]==',')
       {
         ++comma;
          }
    }
 printf("Vowels: %d",vowels);
    printf("\nConsonants: %d",consonants);
    printf("\nDigits: %d",digits);
    printf("\nWhite spaces: %d", spaces);
    printf("\nCommas found are %d",comma);
    return 0;
}
```

Ex String: I want to go into the room SF 551, but classes are going on.



Ex String1: Third floor classrooms are busy, such as SF233 and SF234.



Good Luck to you for the successful completion of the program!