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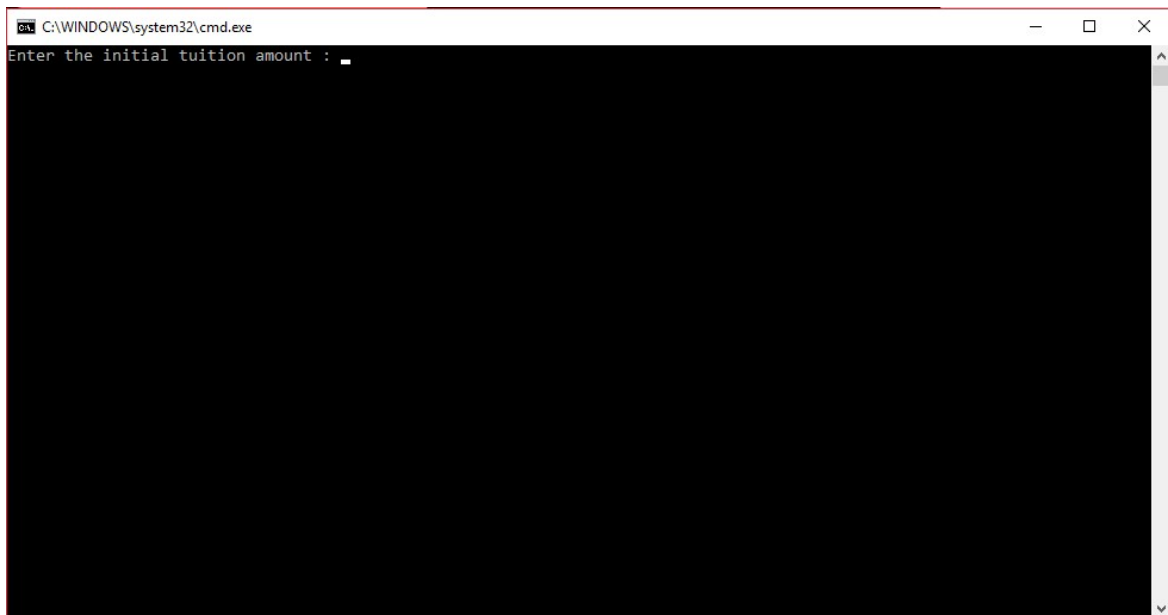
CS 171

January 20, 2017

## Total Tuition Calculator

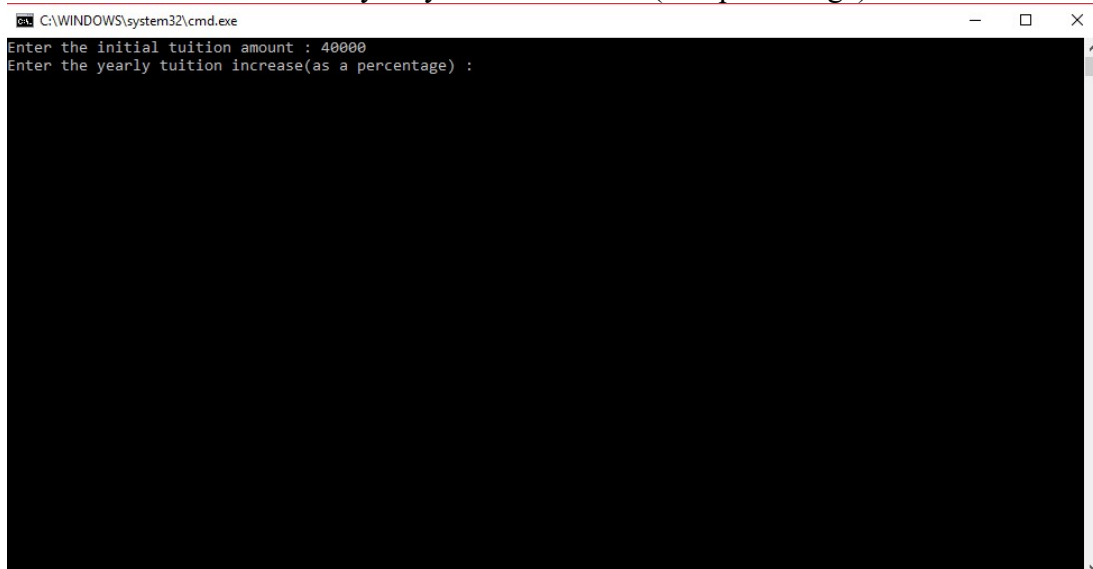
### ❖ User Manual

- As soon as one compiles and runs the program, the first line to be seen would be: “Enter the initial tuition amount:”



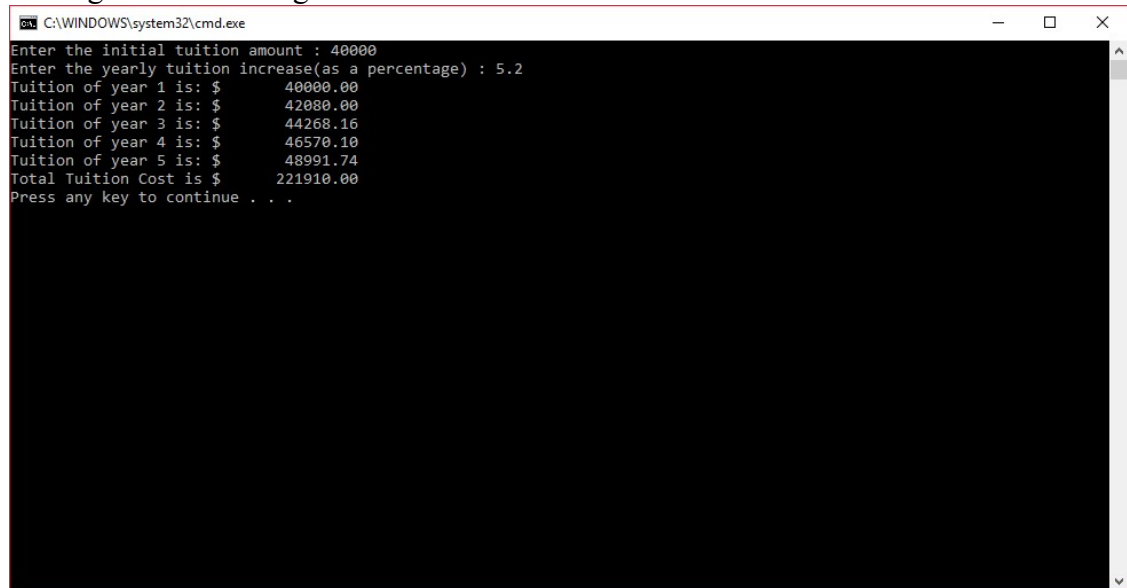
```
C:\WINDOWS\system32\cmd.exe
Enter the initial tuition amount : _
```

- The user is expected to enter the corresponding value.
- The next line is: “Enter the yearly tuition increase (as a percentage):”



```
C:\WINDOWS\system32\cmd.exe
Enter the initial tuition amount : 40000
Enter the yearly tuition increase(as a percentage) :
```

- Again the user is expected to enter the corresponding value.
- The user won't be required to enter anything in the program.
- The program would list down the tuition amount for each year, and then at last would print out the total amount of tuition.
- ❖ System Manual
  - There are 7 variables in total.
  - Six of those have a long data type and one has double:
    - Among the six long data type variables 5 are used for each year's tuition amount.
    - The sixth is used for total.
    - The one variable of the data type double is used for the rate of increase of tuition every year.
  - It changes the rate using this function:
    - $\text{rate} = 1 * (\text{rate} / 100)$
    - This is done so that the rate can directly be multiplied to the tuition amounts.
  - It multiplies the initial tuition by 100 in order to convert it to cents.
  - Then the amount of tuition is calculated by multiplying the tuition by the rate.
  - The precision is set using the iomanip (input-output manipulation) library to 2.
  - In the output, the tuition is static casted to double then is divided by 100, in order to convert it back to dollars.
  - Also in every output the setw method from the iomanip library is used to format the spacing between the values of tuition and the text.
  - After every year's tuition output, that value is added to the total.
- ❖ Testing
  - The testing was done using different values of tuition and rates.



```
C:\WINDOWS\system32\cmd.exe
Enter the initial tuition amount : 40000
Enter the yearly tuition increase(as a percentage) : 5.2
Tuition of year 1 is: $      40000.00
Tuition of year 2 is: $      42080.00
Tuition of year 3 is: $      44268.16
Tuition of year 4 is: $      46570.10
Tuition of year 5 is: $      48991.74
Total Tuition Cost is $     221910.00
Press any key to continue . . .
```

- Here I used Initial tuition as \$40000 and yearly tuition increase rate as 5.2.