

1. Write an updated version of the MadLib word game that allows the user to enter white spaces.

The program should ask the for the following information:

- His or her name
- His or her age
- The name of a city
- The name of a college
- A profession
- A type of animal
- A pet's name

After the user has entered these items, the program should display the following story, inserting the user's input into the appropriate locations:

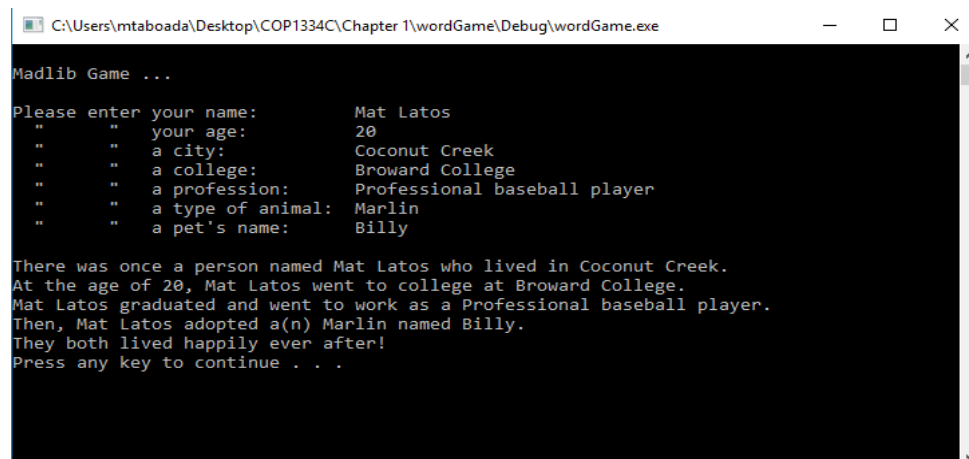
There was once a person named NAME who lived in CITY. At the age of AGE, NAME went to college at COLLEGE. NAME graduated and went to work as a PROFESSION. Then, NAME adopted a(n) ANIMAL named PETNAME. They both lived happily ever after!

wordGame.cpp

Notes:

1. Read values in the order specified.
2. Use `getline()` for strings of characters and `>>` for numeric values.

Output Sample



```
C:\Users\mtaboad\\Desktop\COP1334C\Chapter 1\wordGame\Debug\wordGame.exe
Madlib Game ...
Please enter your name:      Mat Latos
"      " your age:         20
"      " a city:           Coconut Creek
"      " a college:        Broward College
"      " a profession:     Professional baseball player
"      " a type of animal: Marlin
"      " a pet's name:     Billy

There was once a person named Mat Latos who lived in Coconut Creek.
At the age of 20, Mat Latos went to college at Broward College.
Mat Latos graduated and went to work as a Professional baseball player.
Then, Mat Latos adopted a(n) Marlin named Billy.
They both lived happily ever after!
Press any key to continue . . .
```

2. A movie theater only keeps a percentage of the revenue earned from ticket sales. The remainder goes to the movie distributor. Write a program that calculates a theater's gross and net box office profit for a night.

The program should ask for the name of the movie, and how many adult and child tickets were sold. (The price of an adult ticket is \$14 and a child's ticket is \$10). It should display a report similar to the one shown in the Output Sample.

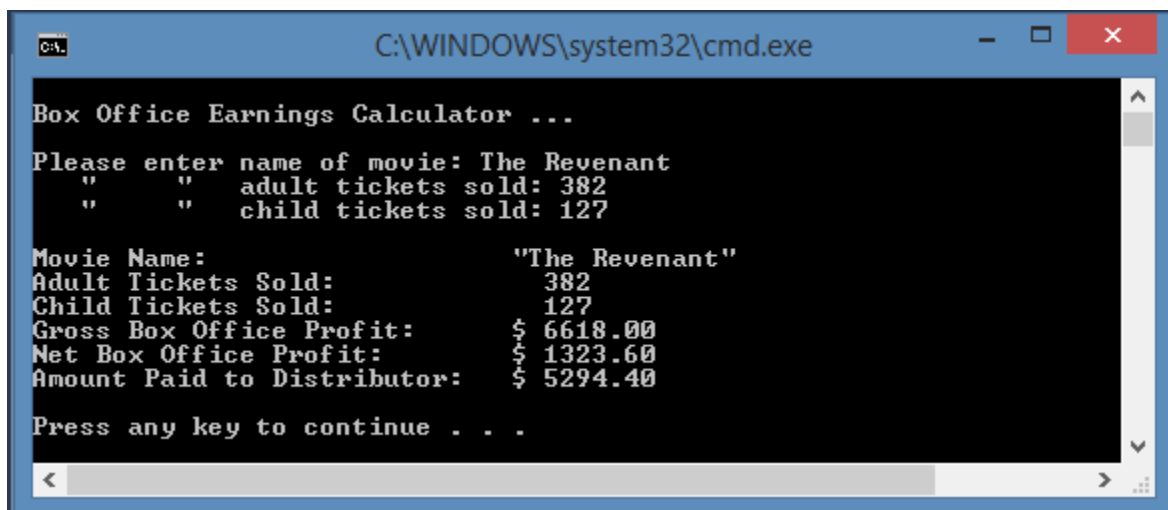
boxOffice.cpp

Notes: Assume the theater keeps 20% of the gross box office profit.

Make sure to include the following manipulators:

- setw()
- right/left
- fixed, showpoint & setprecision()

Output Sample



```
C:\WINDOWS\system32\cmd.exe

Box Office Earnings Calculator ...

Please enter name of movie: The Revenant
"      "      adult tickets sold: 382
"      "      child tickets sold: 127

Movie Name:                "The Revenant"
Adult Tickets Sold:        382
Child Tickets Sold:        127
Gross Box Office Profit:   $ 6618.00
Net Box Office Profit:     $ 1323.60
Amount Paid to Distributor: $ 5294.40

Press any key to continue . . .
```

3. Assuming there are no deposits other than the original investment, the balance in a savings account after one year may be calculated as:

$$\text{Amount} = \text{Principal} * (1 + \frac{\text{Rate}}{T})^T$$

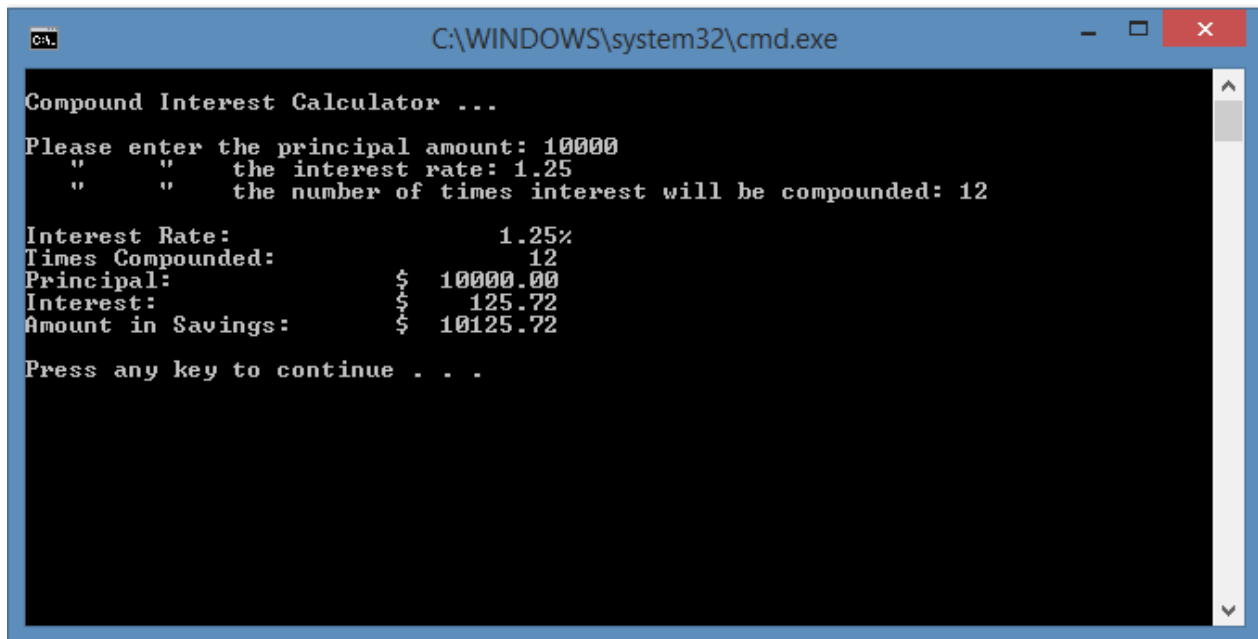
Principal is the balance in the savings account, *Rate* is the interest rate, and *T* is the number of times the interest is compounded during a year (*T* is 4 if the interest is compounded quarterly).

Write a program that asks for the principal, the interest rate, and the number of times the interest is compounded. It should display a report similar to the one shown in the Output Sample.

interest.cpp

Notes: Use the function `pow(x,y)` located in `<cmath>`
Make sure to include manipulators to replicate output shown.

Output Sample



```
C:\WINDOWS\system32\cmd.exe

Compound Interest Calculator ...
Please enter the principal amount: 10000
"    "    the interest rate: 1.25
"    "    the number of times interest will be compounded: 12

Interest Rate:                1.25%
Times Compounded:             12
Principal:                    $ 10000.00
Interest:                     $ 125.72
Amount in Savings:            $ 10125.72

Press any key to continue . . .
```

4. Joe's Pizza Palace needs a program to calculate the number of slices a pizza of any size can be divided into. The program should perform the following steps:

- a. Ask the user for the diameter of the pizza in inches.
- b. Calculate the number of slices that may be taken from a pizza of that size.
- c. Display a message telling the number of slices.

To calculate the number of slices that may be taken from the pizza, you must know the following facts:

- Each slice should have an area of 14.125 inches.
- To calculate the number of slices, simply divide the area of the pizza by 14.125.
- The area of the pizza is calculated with this formula:

$$A = \pi r^2$$

π is the Greek letter PI. 3.14159 can be used as a value. The variable r is the radius of the pizza.

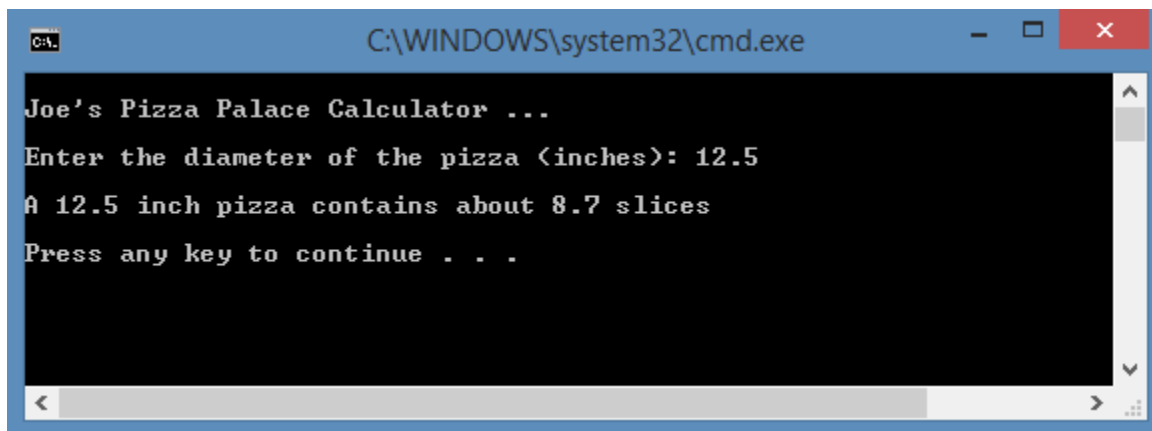
Divide the diameter by 2 to get the radius.

pizza.cpp

Notes: Use the function `pow(x,y)` located in `<cmath>`.

Make sure the output of the program displays the number of slices in fixed point notation, rounded to one decimal place of precision. Use a named constant for π .

Output Sample



```
C:\WINDOWS\system32\cmd.exe

Joe's Pizza Palace Calculator ...
Enter the diameter of the pizza (inches): 12.5
A 12.5 inch pizza contains about 8.7 slices
Press any key to continue . . .
```