



CodeFirstGirls Beginners Python

Homework Solutions: Session 1

Topics this session:

1. Run Python with files and console
2. Recognise data types (Integers, Floats and Strings)
3. Identify different maths operations
4. Understand Error Messages
5. Use variables in your programs

Additional resources:

- Basic Python data-types <https://realpython.com/python-data-types/>
- Strings <https://realpython.com/python-strings/>
- String formatting (includes two common alternatives to the string formatting method covered in the session) <https://realpython.com/python-string-formatting/>
- Understanding error messages <https://realpython.com/python-traceback/>
- Variables <https://realpython.com/python-variables/>

Question 1

I am building some very high quality chairs and need exactly four nails for each chair. I've written a program to calculate how many nails I need to buy to build these chairs.

```
chairs = '15'
nails = 4

total_nails = chairs * nails

message = 'I need to buy {} nails'.format(total_nails)

print("You need to buy {} nails".format(message))
```

The output message seems to be incorrect. Can you fix it?

When I run the program it tells me that I need to buy 15151515 nails. This seems like a lot of nails.

Is my program calculating the total number of nails correctly? What is the problem? How do I fix it?

Solution:

Make chairs an integer rather than string. Change print() to print only the variable message.

```
chairs = 15
nails = 4

total_nails = chairs * nails

message = 'I need to buy {} nails'.format(total_nails)

print(message)
```

Question 2

I'm trying to run this program, but I get an error. What is the error telling me is wrong? How do I fix the program?

```
my_name = Penelope
my_age = 29

message = 'My name is {} and I am {} years old'.format(my_name, my_age)
print(message)
```

Solution:

Change 'Penelope' to a string.

```
my_name = 'Penelope'
my_age = 29

message = 'My name is {} and I am {} years old'.format(my_name, my_age)
print(message)
```

Question 3

I have a lot of boxes of eggs in my fridge and I want to calculate how many omlettes I can make. Write a program to calculate this.

Assume that a box of eggs contains six eggs and I need four eggs for each omlette, but I should be able to easily change these values if I want. The output should say something like "You can make 9 omlettes with 6 boxes of eggs".

Solution

```
box_eggs = 11
eggs_per_omlette = 4
box_size = 6

num_omlettes = (box_size * box_eggs) / eggs_per_omlette

message = 'You can make {} omlettes with {} boxes of eggs'.format(num_omlettes, box_eggs)
print(message)
```

Advanced extension: I can only make whole omlettes using 4 eggs. How do I calculate how many whole omlettes I can make, and how many leftover eggs I will have. Hints: Use // to do division into whole numbers & use the modulo operator to calculate division remainders.

Example solution (Other solutions may also be possible)

```
box_eggs = 11
eggs_per_omlette = 4
box_size = 6

num_omlettes = (box_size * box_eggs) // eggs_per_omlette
leftover = (box_size * box_eggs) % eggs_per_omlette

message = 'You can make {} omlettes with {} boxes of eggs'.format(num_omlettes, box_eggs)
print(message)

message_2 = 'You will have {} eggs leftover'.format(leftover)
print(message_2)
```