

Syntax and logic errors | Part B

Let's suppose I am trying to write an app that people can use at a restaurant to work out how much their share of the bill is. It might look like this:

```
number_of_people = 6
total_bill = 300.00
cost_per_person = number_of_people / total_bill
print (cost_per_person)
```

This looks like a perfectly reasonable program, and it will run. However, it contains a logical error. According to my program, my dinner was pretty cheap – 0.02 or 2 pence to be precise! I have made a logical error because although my program does run and does produce a result, the result is not correct. I should have divided the total bill by the number of people and not the other way around. This gives a much more sensible answer of £50.

Expensive dinner!

Another frequent occasion when we see logical errors is when we are writing conditions. Suppose we are writing an app which we only want people who are 18 or over to be able to access. We might write some code like this:

```
age = int( input("Enter your age") )
if age > 18:
    print("Welcome to the app!")
else:
    print("Sorry, you are too young to use this app")
```

Again, this program works and will run properly for the majority of users, but there is a logical error. In this case, we have made a logical error because we meant to allow 18 year olds in, but we used the > operator instead of the >= operator on line 2. This is pretty difficult to spot unless you test your program thoroughly.