

# Computing Homework 22/10/13 Part 3:

## Interest Calculator

### Objective

Write a program in C that inputs:

- A capital sum(in pence)
- A rate of interest
- A number of years

Then use these to calculate and show how much the capital is over the number of years input.

### How to do it

I will complete the objective by doing this:

- First, I shall calculate the interest for the current year.
- Then I shall print the year and the interest.
- Then, I shall add the interest to the capital, and print the new capital.
- Then rinse and repeat, until all of the years have been done.

### How to test it

I will test this program 2 times, with these sets of numbers:

	Set 1	Set 2
Capital (in pence)	3000000p (£30000)	400000p (£4000)
Rate of interest	12.5%	25%
Years	5	5

And the outputs for these sets of numbers should be:

Set 1		
Year	Interest	Sum
1	3750.00	£33750.00
2	4218.75	£37968.00
3	4746.09	£42714.84
4	5339.35	£48054.19
5	6006.77	£54060.96

## Set 2

Year	Interest	Sum
1	1000.00	£5000.00
2	1250.00	£6250.00
3	1562.50	£7812.50
4	1953.12	£9765.62
5	2441.41	£12207.03

If the program outputs these results, I will conclude that I have completed the objective.

### Test results

After testing my program, I got these results:

```
Gavins-iMac-5:Part 3-Interest Calculator samuel$ ./interestCalc.out Welcome to
the interest calculator v1.0!
What is your capital?
Capital in pence:3000000
What is your ROI(Rate Of Interest)?
ROI:12.5
How long will this banking simulation go on for?
Years:5
Year:1 Interest:3750.00 Sum:33750.00
Year:2 Interest:4218.75 Sum:37968.75
Year:3 Interest:4746.09 Sum:42714.84
Year:4 Interest:5339.36 Sum:48054.20
Year:5 Interest:6006.77 Sum:54060.97
All done!
Please note that the pence values might not be entirely accurate,
because of the way the pence value is rounded.
What is your capital?
Capital in pence:400000
What is your ROI(Rate Of Interest)?
ROI:25
How long will this banking simulation go on for?
Years:5
Year:1 Interest:1000.00 Sum:5000.00
Year:2 Interest:1250.00 Sum:6250.00
Year:3 Interest:1562.50 Sum:7812.50
Year:4 Interest:1953.12 Sum:9765.62
Year:5 Interest:2441.41 Sum:12207.03
All done!
Please note that the pence values might not be entirely accurate,
because of the way the pence value is rounded.
```

As you can see, it is the same as the required results, although the numbers for Set 1 were slightly off. This is because I only round for the output, and I don't round the floats permanently.

I can therefore conclude that I have completed the objective.