

Iteration tasks: for

Task 1 - Numbers

Write a program that uses `for` to display the numbers 1 to 100 inclusive.

Task 2 - Hello again!

Write a program that uses `for` to print "Hello again!" 1000 times

Task 3 - 7 Times Table

Write a program that uses `for` to print every line of the 7 times table, so it looks something like the example below. (Hint: use a variable and print it twice, once unchanged, and once multiplied by 7 using the `*` operator. In between print " x ". Remember you can use commas to separate several items being printed on the same line)

```
1 x 7 = 7
2 x 7 = 14
3 x 7 = 21
4 x 7 = 28
...
12 x 7 = 84
```

Task 4 - Average of 10 numbers

Write a program that will ask for 10 numbers, adds them together, and prints the average of the 10 numbers at the end.

Task 5 - All the times tables

Write a program that will print every times table from 1 to 12. (Hint: use your program from task 3, and think about how you will use two loops)

Task 6 - Bits

Write a program that will print the number of combinations you can have with a certain amount of bits, as in the example below. Show all the combinations up to 32 bits (Hint: 2^{**3} is 8)

```
1 bit(s) gives 2 combinations
2 bit(s) gives 4 combinations
3 bit(s) gives 8 combinations
4 bit(s) gives 16 combinations
...
32 bit(s) gives 4294967296 combinations
```

Task 7 - Bits

Extend the program from Task 6 so that if the number of bits is a multiple of 8, it will display how many bytes that is, e.g.

```
32 bit(s) gives 4294967296 combinations
That is 4 bytes
```

(continues...)



Task 8 - To Decimal

Write a program that uses a for loop to produce the output in the screenshot below.

Hint 1: `print (10 * '@')` will print 10 @ symbols.

Hint 2: $11111111 = 2^7$

```
1  in decimal is: 1
11 in decimal is: 3
111 in decimal is: 7
1111 in decimal is: 15
11111 in decimal is: 31
111111 in decimal is: 63
1111111 in decimal is: 127
11111111 in decimal is: 255
```

