

A Few Short Programs

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1 Introduction

This week, you will write a few short programs using the skills you already know. You should try to write these programs on your own with as little help as possible. Look at previous programs you have written and the previous handouts we have provided. Next week we move on to bigger things, so be sure you know how to do these basic tasks!

Here's the twist: for each program I am going to tell you the maximum number of lines of codes you may use to write your program. You will receive bonus points for writing your program using fewer lines of code.

Remember, you must comment your code! Comments do NOT count against your allotted number of lines.

2 Heads or Tails

Write a program that prints out “Heads” or “Tails” each time it is run. Your program should randomly choose which message it prints on each run. You should save your program as `Heads_Tails.py`. You are allowed 6 lines of code.

3 Greetings

This program will ask for the user's name and favorite number, then print that number and inform the user of the computer's favorite number. If the user's favorite number is x then the computer's favorite number is $2x + 1$. Here is how this program will look when it is run:

```
Hello! What is your name? Sarah
Nice to meet you, Sarah. What is your favorite number? 7
Sarah's favorite number is 7.0 but my favorite number is 15.0.
```

Blue text was printed by the program; black text was inputted by the user. Your program should replicate this *exactly*! You are allotted 4 lines of code. Save your file as `Greetings.py`.

4 Circles

This program will ask the user for the radius of a circle, then compute and print the area and diameter of the circle. Here is how this program will look when it is run:

```
This program calculate the area and diameter of a circle given its radius.  
What is the radius of your circle? 1  
The area of the circle is 3.14159265359 and the diameter is 2.0.
```

Blue text was printed by the program; black text was inputted by the user. Your program should replicate this *exactly*! You are allotted 5 lines of code. Save your file as `Circles.py`.