

The following are exercises that are meant to build your understanding of dictionaries.

- * If you print your variable with a dictionary in it, it will not be as nicely formatted as the text in this document. That is all right.
- * Entries in a dictionary have no particular order, so do not worry if your output looks differently from the examples, as long as the data contained inside is the same.
- * When a problem says 'given the following', that means that you may copy and paste the given information as a start to your solution.

*** Problem 1 *****

Produce code that creates and prints the following dictionary:

```
{
    "a": 1,
    "b": 1,
    "c": 1
}
```

Use one separate line of code for each of the different value insertions.

*** Problem 2 *****

Produce code that creates and prints the following dictionary:

```
{
    1: 2,
    2: 3,
    3: 4,
    4: 5,
    5: 6
}
```

Use a for loop, as opposed to five different insertion calls.

*** Problem 3 *****

Given the following `*message*` variable

```
message = "once upon a time there was a dog"
```

Produce code that creates and prints the following dictionary:

```
{
    "once": 0,
    "upon": 1,
    "a": 6,
    "time": 3,
    "there": 4,
    "was": 5,
    "dog": 7
}
```

Note that the later value of `*a*` is in the final result.

You can loop through the words in the string with the following code:

```
for word in message.split(" "):
```

```
# More code goes here
```

```
*** Problem 4 *****
```

Produce code that prints the total amount of animals contained in this strange zoo given the following dictionary that stores the quantities of each type of animal:

```
animals = {
    "dog": 9,
    "cat": 4,
    "frog": 2,
    "bear": 4,
    "whale": 10
}
```

```
*** Problem 5 *****
```

Produce code that creates and prints a dictionary that stores each of these people's height:weight ratio.

```
people = {
    "Alice": {
        "age": 20,
        "height": 62,
        "weight": 120.0
    },
    "Bob": {
        "age": 17,
        "height": 68,
        "weight": 130.5
    },
    "Freddie": {
        "age": 21,
        "height": 74,
        "weight": 190.6
    }
}
```

That is, your code should produce the following dictionary:

```
{
    'Alice': 0.5166666666666667,
    'Freddie': 0.3882476390346275,
    'Bob': 0.5210727969348659
}
```