# Writing Our First Python Program: Takeaways



## Syntax

- Create a variable using the equals sign `=` to initialize a variable:

```
variable = 42
```

- Print the value of a variable using the `print()` function:

```
variable = 42
print(variable)
```

- Perform arithmetic calculations in Python:

```
1 + 2    # addition
100 - 10 # subtraction
12 * 13  # multiplication
90 / 5   # division
```

- Use the `#` sign to create a comment:

```
original_salary = 50000
conversion_rate = 0.96   # USD to Euro
converted_salary = original_salary * conversion_rate
```

- Use variables to generalize a calculation instead of hard-coding:

```
salary = 66144
converted_salary = salary * 1.34 # partially hard coded
salary = 66144
conversion_rate = 1.34
converted_salary = salary * conversion_rate # not hard coded
```

## Concepts

- **Variables** are a way to store data and give it meaning.
- Often, we'll need to inspect the values of the variables we create. We can use the `print()` function to do this.
- We can perform arithmetic operations using Python and store the results of these calculations in variables.
- **Comments** are lines in a Python code that aren't run. We can use comments to prevent code from being run and to write explanations for accompanying code.
- **Hard-coding** a calculation is using a concrete number inside the arithmetic. While this is useful for quick checks, it should be avoided and replaced with informative variables.

## Resources

- More reading on Python variables
- Restrictions on Python variable names