Exercises

1. Declare two variables, x and y, and assign them the values 5 and 10. Print the sum of the two variables.
2. Declare a variable name and assign it your name as a string. Print a greeting message that uses the name variable.
3. Declare a variable radius and assign it the value of a radius of a circle. Calculate the circumference of the circle using the formula 2 * pi * radius, where pi is the mathematical constant for pi. Print the result.
4. Declare two variables, a and b, and assign them values. Swap the values of the two variables without using a third variable. Print the values of a and b before and after the swap.
5. Declare a variable age and assign it an integer value. Use conditional statements to print a message that changes based on the value of age. If age is less than 18, print "You are a minor". If age is between 18 and 65, print "You are an adult". If age is greater than 65, print "You are a senior citizen".
6. Declare a variable favorite_foods and assign it a list of your favorite foods. Print the first and last items in the list.
7. Declare a variable sales_tax_rate and assign it a floating-point value representing a sales tax rate as a percentage. Declare another variable price and assign it a value. Calculate the total price with tax included and print the result.
8. Declare a variable my_tuple and assign it a tuple of three values. Access the second value in the tuple and print it.
9. Declare a variable my_dict and assign it a dictionary with three key-value pairs. Access the value of one of the keys and print it.
10. Declare a variable my_set and assign it a set of three values. Print the length of the set.

Exercises and Solution

1. Declare two variables, x and y, and assign them the values 5 and 10. Print the sum of the two variables.

x = 5

y = 10

print(x + y)

2. Declare a variable name and assign it your name as a string. Print a greeting message that uses the name variable.

name = "John"

```python
print("Hello, " + name + "!")
```

3. Declare a variable radius and assign it the value of a radius of a circle. Calculate the circumference of the circle using the formula 2 * pi * radius, where pi is the mathematical constant for pi. Print the result.

```python
import math

radius = 3.5

circumference = 2 * math.pi * radius

print(circumference)
```

4. Declare two variables, a and b, and assign them values. Swap the values of the two variables without using a third variable. Print the values of a and b before and after the swap.

```python
a = 10

b = 20

print("Before swap: a =", a, ", b =", b)

a, b = b, a

print("After swap: a =", a, ", b =", b)
```

5. Declare a variable age and assign it an integer value. Use conditional statements to print a message that changes based on the value of age. If age is less than 18, print "You are a minor". If age is between 18 and 65, print "You are an adult". If age is greater than 65, print "You are a senior citizen".

```python
age = 25

if age < 18:

    print("You are a minor")

elif age >= 18 and age <= 65:

    print("You are an adult")

else:

    print("You are a senior citizen")
```

6. Declare a variable favorite_foods and assign it a list of your favorite foods. Print the first and last items in the list.

```python
favorite_foods = ["pizza", "sushi", "ice cream"]

print(favorite_foods[0])

print(favorite_foods[-1])
```

7. Declare a variable sales_tax_rate and assign it a floating-point value representing a sales tax rate as a percentage. Declare another variable price and assign it a value. Calculate the total price with tax included and print the result.

```
sales_tax_rate = 8.25
```

```
price = 100
```

```
total_price = price + (sales_tax_rate / 100 * price)
```

```
print(total_price)
```

8. Declare a variable my_tuple and assign it a tuple of three values. Access the second value in the tuple and print it.

```
my_tuple = (1, 2, 3)
```

```
print(my_tuple[1])
```

9. Declare a variable my_dict and assign it a dictionary with three key-value pairs. Access the value of one of the keys and print it.

```
my_dict = {"name": "John", "age": 30, "city": "New York"}
```

```
print(my_dict["age"])
```

10. Declare a variable my_set and assign it a set of three values. Print the length of the set.

```
my_set = {1, 2, 3}
```

```
print(len(my_set))
```