CENG113 Exercises

1. Complete the code literacy exercises: https://www.computationalwisdom.com/code-literacy
2. Ask the name of the user. Greet the user.

   Sample run:
   ```
   What is your name? Ersin
   Hello Ersin!
   ```

   Challenge: Try to write this program in two ways:
   - Pass two arguments to `print` function. (Use a comma.)
   - Pass one argument to `print` function. (Don't use a comma.)

   Extra challenge: Use an apostrophe to ask the name: `What's your name?`

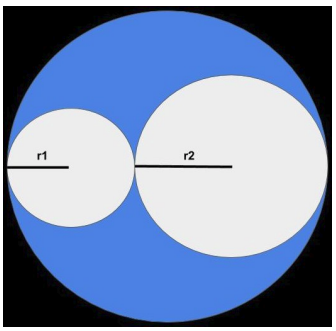
3. Ask the age of the user. Calculate their birth year. (Assume that it is 2023 and the user has already celebrated their birthday this year.)
4. Two cars, 840 km apart, are heading towards each other. Their speeds are 50 km/h and 70 km/h. How many minutes later will the distance between them be 240 km?
5. Ask the user for temperature in Celsius and display it in Fahrenheit. (Sample data: If the input is 30.0, the output should be 86.0).
6. Solve a linear equation with one variable.

   Sample code:
   ```
   print("Enter a, b and c values for the equation ax + b = c.")
   a = float(input("a = "))
   b = float(input("b = "))
   c = float(input("c = "))
   # …
   ```

7. Ask the user for the side lengths of a right triangle and display the length of the hypotenuse (e.g. if the inputs are 3.0 and 4.0, the result should be 5.0).
8. Ask the user for their homework, midterm and final grades. Calculate their course grade which is a weighted average of all these grades (Weights: 10% for homeworks, 30% for midterm exam and 60% for final exam).

   Sample run:
   ```
   Enter your homework grade: 100
   Enter your midterm exam grade: 50
   Enter your final exam grade: 60
   Your course grade: 61.0
   ```

9. Ask the user for the radiuses (`r1` and `r2`) of two tangent circles and calculate the blue area shown below. (The surrounding circle is the smallest circle that covers both of these two circles).



You can use `pi = 3.14`. But there is a better alternative: **`import math`** and use **`math.pi`**.

10. Ask the user for the radius length of a circle and display four values:
    - the area of that circle,
    - the circumference of that circle,
    - the area of the smallest square that covers this circle,
    - the area of the largest square that can fit inside this circle.

11. Ask an integer between 0 and 10000. Display thousands, hundreds, tens, and ones place of the number.
12. Ask the user for seconds and display the corresponding number of days, hours, minutes and seconds.

    Sample run:
    ```
    Enter seconds: 3800
    3800 seconds = 0 day(s) 1 hour(s) 3 minute(s) 20 second(s)
    ```

Hints

1. Click "Hint" buttons.
2. Get the user input using **`input(...)`**. Probably add a space at the end of the prompts: for example **`input('Name: ')`** instead of **`input('Name:')`**. See "escape characters" if you need to display an apostrophe.
3. Get the user input using **`int(input(...))`**.
4. There is no user input. The result must be given in minutes (not hours).
5. –
6. –
7. x^y is `x ** y`.
8. 10% of `x` is `0.1 * x`.
9. –
10. –
11. You can use the operators **`//`** and **`%`**.
12. First calculate the days using the given seconds, then the hours using the remaining seconds, then the minutes using the remaining seconds, and finally you have the seconds.