EEE2021: Computer Programming & Organisation

Lab 1: Basic Input & Output; Data Types; Variables

Exercise 1:

Write a program that calculates the product of three integers. The program should consider each of the following steps:

1. State that a program will calculate the product of three integers;
2. Define the variables **x, y, z** and result to be of type **int**;
3. Prompt the user to enter three integers;
4. Read three integers from the keyboard and store them in the variables **x, y** and **z**;
5. Compute the product of the three integers contained in variables **x, y** and **z**, and assign the result to the variable **result**;
6. Print **"The product is"** followed by the value of the integer variable **result**.

Exercise 2:

Write a program that requires the user to enter two integers, obtains the two numbers, and prints their sum, product, quotient and remainder.

1. State that a program will calculate the sum, product, quotient and remainder of two integers;
2. Define the input variables **x** and **y** and output variables **sum, product, quotient** and **remainder** to be of type **int**;
3. Prompt the user to enter two integers;
4. Read two integers from the keyboard and store them in the variables **x** and **y**;
5. Compute and print the results.

Exercise 3:

Write a program that requires the user to enter a two-digit integer, e.g., 42 and prints its first and second digit separately.

Hint: Use the modulus operator % and the division operator /.

Successful result: if the user types in **42**, the program should print: **4 2**

Exercise 4:

Write a program that requires the user to enter two float numbers and calculates their average.

Exercise 5:

Write a program that requires the user to enter a float number. Calculate a circumference using the given number as a radius. Declare the number Pi as a global constant outside the main function, like this: `#define Pi 3.1415926`.

Extra 1:

Write a program that performs the following actions:

1. Prompts the user to input their name;
2. Prints a greeting to the user, calling them by their name;
3. Prompts the user to input the year they were born;
4. Calculates and prints the user's age.

This is an example of successful program execution:

```
What is your name? > Alan Turing
Hello, Alan Turing!
What year were you born? > 23/06/1912
You are 112 years old today!
```

Feel free to experiment with input/output format. Try to implement more interaction with the user if you have time.
