# Lab: Data Types and Variables

Problems for exercises and homework for the ["Programming Fundamentals" course @ SoftUni.](https://softuni.bg/trainings/3951/programming-fundamentals-with-java-january-2023)

You can check your solutions in [Judge.](https://judge.softuni.org/Contests/1227)

# Integer and Real Numbers

## Convert Meters to Kilometers

You will be given an integer that will be a distance in meters. Write a program that converts meters to kilometers formatted to the second decimal point.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1852 | 1.85 |
| 798 | 0.80 |

## Pounds to Dollars

Write a program that converts British pounds to US dollars formatted to the 3rd decimal point.

1 British Pound = 1.36 Dollars

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 80 | 108.800 |
| 39 | 53.040 |

## Exact Sum of Real Numbers

Write a program to enter **n** numbers and calculate and print their **exact sum** (without rounding).

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  1000000000000000000  5  10 | 1000000000000000015 |
| 2  0.00000000003  333333333333.3 | 333333333333.30000000003 |

### Hints

Use BigDecimal not to lose precision.

# Data Types and Type Conversion

## Town Info

You will be given 3 lines of input. On the first line, you will be given the name of the town, on the second – the population, and on the third – the area. Use the correct data types and print the result in the following format:

"**Town {town name} has population of {population} and area {area} square km.**".

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Sofia  1286383  492 | Town Sofia has population of 1286383 and area 492 square km. |
| Plovdiv  343424  101 | Town Plovdiv has population of 343424 and area 101 square km. |

## Concat Names

Read two names and a delimiter. Print the names joined by the delimiter.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| John  Smith  -> | John->Smith |
| Jan  White  <-> | Jan<->White |
| Linda  Terry  => | Linda=>Terry |

## Chars to String

Write a program that reads 3 lines of input. On each line, you get a single character. Combine all the characters into one string and print it on the console.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| a  b  c | abc |
| %  2  o | %2o |
| 1  5  p | 15p |

## Reversed Chars

Write a program that takes 3 lines of characters and prints them in reversed order with a space between them.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| A  B  C | C B A |
| 1  L  & | & L 1 |

## Lower or Upper

Write a program that prints whether a given character is upper-case or lower-case.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| L | upper-case |
| f | lower-case |