Exercises for lab 2 of CS2101a

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1 Exercise 1

Read the following sections of the Julia documentation:

> `http://docs.julialang.org/en/latest/manual/getting-started/`

> `http://docs.julialang.org/en/latest/manual/integers-and-floating-point-numbers/`

> `http://docs.julialang.org/en/latest/manual/functions/`

Write a Julia function that takes as input two numbers (integers or floats) and returns the absolute value of their difference.

2 Exercise 2

Read the following sections of the Julia documentation:

> `http://docs.julialang.org/en/latest/manual/control-flow/`

> `http://docs.julialang.org/en/latest/manual/arrays/`

1. Write a Julia program that computes the sum of two vectors (whose co-efficients are either integers or floats) of the same length and computes their sum.

2. Write a Julia program that takes as input two vectors U and V (whose coefficients are either integers or floats) of the same length and computes the square matrix A such that $A[i,j]$ is $U[i] + V[j]$.

3 Exercise 3

Read the following sections of the Julia documentation:

> `http://en.wikipedia.org/wiki/Methods_of_computing_square_roots`

> `http://en.wikipedia.org/wiki/Babylonian_method`

Write a Julia program that takes as input an integer value n and calculates an approximation of its square root up to a specified precision p, using either the Bakhshali approximation or the Babylonian method. (The choice is yours.)