PPL Assignment 1

Part 1 - Theoretical Questions

1. 3 Dimension of variability:
    a. Control Flow: how the execution of the program takes place - for example; using branches, concurrency threads, reactive manner etc.
    b. Performance: how fast the code runs and how much is it scalable. good performance can be obtained by using less pc resources.
    c. Coupling and Reuse: how easily same sections of code can be reused along the program.

2. a. (x: number, y: number) : number => x + y
    b. (x: any) : any => x[0]
    c. (x: boolean, y: number) : number => : x ? y : -y

3. Shortcut Semantics is a programming concept where a certain function stops and returns a result immediately when one of its predicate is sufficed, without checking the rest of its predicates.
    Example:
    'Every' function in JS returns true only if all of its predicates are True, and False otherwise. Therefore, when encountering the first False predicate - it immediately returns false without going over the remaining predicates.