

IoT Developer Programming Test

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# 1 INTRODUCTION

## 1.1 Purpose

The purpose of this programming test is to allow Integrated System Technologies to get a better understanding of your ability to program, problem solve and creative thinking.

We're focused on the quality of work you produce.

# 2 JAVA TEST

## 2.1 Overview

You will be given access to a project "java test". This is a pure Java project.

There is one interface called MathematicalOperations, at least one additional class will need to be created but feel free to design this however you deem fit.

## 2.2 Rules

- You have **30 minutes** to complete this test.
- Focus on the quality of work and not the quantity of work.
- For this please don't use any additional libraries. All code should be your own.
- For any parts you may not complete, please enter comments to show how you would approach it.

## 2.3 Tasks

1) The interface MathematicalOperations has a method called multiplyAndAdd.

Change this method to take two arrays of type int as its parameters.

Next, create a class, name it however you deem appropriate. Implement the method you just changed; it should perform the following:

- multiply the value in arrayA at index i, with the value in arrayB at index i
- keep a running sum total of these values
- repeat for the entire length of the arrays
- return the total sum

2)

Do the same calculation but this time remove all occurrences of the number 3 before calculating it.

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## 2.4 Hint

A[1] MULTIPLY BY B[1] + A[2] MULTIPLY BY B[2] .....

$$\begin{aligned}[1, 3, -5] \cdot [4, -2, -1] &= (1 \times 4) + (3 \times -2) + (-5 \times -1) \\ &= 4 - 6 + 5 \\ &= 3\end{aligned}$$