

CSCI 507: Data Structures

Lab Assignment 2: Arrays and Recursion

1. A vector can be represented by an array. Write a code that first defines two integer arrays of length 5 and initialize them with some small integer numbers. Then add some code to compute the dot product (inner product) of the two vectors.

```
int[] v1 = new int[5];  
int[] v2 = new int[5];
```

The dot product of two vectors $\mathbf{a} = [a_1, a_2, \dots, a_n]$ and $\mathbf{b} = [b_1, b_2, \dots, b_n]$ is defined as:

$$\mathbf{a} \cdot \mathbf{b} = \sum_{i=1}^n a_i b_i = a_1 b_1 + a_2 b_2 + \dots + a_n b_n$$