ENGR–UH 1000 | Lab 0 Report

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Contents

1 Problem Identification and Statement

Computing the distance between two given points in a Cartesian plane, given the Cartesian coordinates of the two points.

2 Gathering of Information and Input/Output Description

3 Test Cases and Algorithm Design

- Get input x_1 from user
- Assign x_1 to variable x_1
- Get input y_1 from user
- Assign y_1 to variable y_1
- Get input x_2 from user
- Assign x_2 to variable x_2
- Get input y_2 from user
- Assign y_2 to variable y_2
- Assign $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ to *distance*
- Print *distance*

4 Implementation

```
1  /*-------------------------------------------------*/
2  /* Name: Pi, Student Number: N13394469 */
3  /* Date: Sep 8, 2020. */
4  /* Program: distance.cpp */
5  /* Description: This program computes the distance */
6  /* between two points. */
7  /*-------------------------------------------------*/
8  #include <iostream>
9  #include <cmath>
10 using namespace std;
11 int main()
12 {
13 /* Declare and initialize the variables */
14 double x1 = -1, y1 = -3, x2 = 4, y2 = 6;
15 double length1, length2, distance;
16
```

```
17 /* Compute the sides of a right triangle */
18 length1 = x2 - x1;
19 length2 = y2 - y1;
20
21 /* Compute the distance between the two points. */
22 distance = sqrt(length1*length1 + length2*length2);
23
24 /* Print the distance */
25 cout << "The distance between the two points is " << distance << endl;
26  return (0);
27 }
28 /*--------------------------End---------------------*/
```

5 Software Testing and Verification