ENGR–UH 1000 | Lab 0 Report

Pi (pk2269@nyu.edu)

Sep 8, 2020

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 x1 from user
| Assign x1 to variable x1
| Get input y1 from user
| Assign y1 to variable y1
| Get input x2 from user
| Assign x2 to variable x2
| Get input y2 from user
| Assign y2 to variable y2
```

4 Implementation

5 Software Testing and Verification

% Pandoc math demos

$a^2 + b^2 = c^2$

$v(t) = v_0 + \frac{1}{2}at^2$

$\gamma = \frac{1}{\sqrt{1 - v^2/c^2}}$

$\exists x \forall y (Rxy \equiv Ryx)$

$p \wedge q \vDash p$

$\Box \diamond p \equiv \diamond p$

$\int_{0}^{1} x dx = \left[\frac{1}{2}x^2 \right]_{0}^{1} = \frac{1}{2}$

$e^x = \sum_{n=0}^\infty \frac{x^n}{n!} = \lim_{n\rightarrow\infty} (1 + x/n)^n$

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

/* Compute the sides of a right triangle */
length1 = x2 - x1;
length2 = y2 - y1;

/* Compute the distance between the two points. */
distance = sqrt(length1*length1 + length2*length2);

/* Print the distance */
cout << "The distance between the two points is " << distance << endl;
 return (0);
}
/*---------------------------End----------------------*/
```