SE185: Problem Solving in Software Engineering
Quiz #1 (100 points)

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Answer the following questions and make a pdf file that includes the **source code, sample inputs, and outputs**. You must submit the **pdf file and all of the .c files** on Canvas for full credit. Do not forget to add your group partner name on the pdf file and the source codes.

1. **(50 points)** Write a complete c program to find the area code, exchange code, and the user number from any phone number (i.e., 10 digits) entered by the user. [hints: assume the common phone number format (3 digits area code)-(3 digits exchange code)-(4 digits user number)]

Inputs and outputs format:

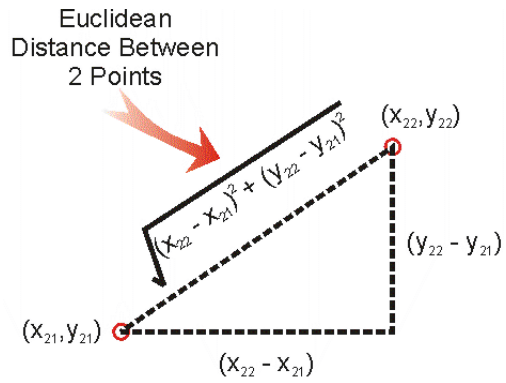
```
Please enter the 10 digits phone number: 5152946323

The area code is: 515
The exchange code is: 294
The user number is: 6323
```

2. **(50 points)** Write a complete c program that print the Euclidian distance between the school and the following students:

   a) Mike located at x=22.05 and y=85.10
   b) Mary located at x=43.25 and y=9.80
   c) Gary located at x=2.55 and y=72.86
   d) Logan located at x=15.15 and y =40.40

Given that the school is located at x=15.55 and y=55.15



Inputs and outputs format:

```
The E distance for Mike is: 30.647227
The E distance for Mary is: 53.140498
The E distance for Gary is: 21.969162
The E distance for Logan is: 14.755423
```

Phonenumber:

C:\Users\kenns\OneDrive\Desktop\Desktop\SE185\Phonenumber.c - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

Phonenumber.c | Triangle.c

```c
#include<stdio.h>
#include<math.h>
#include<stdlib.h>

int main (void){
    long phoneNum;
    int areaCode;
    int exCode;
    int usrNum;

    printf("Please enter the 10 digits phone number:");
    scanf("%ld", &phoneNum);
    printf("\n");

    areaCode = phoneNum * pow(10,-7);
    phoneNum -= areaCode * pow(10,7);
    exCode = phoneNum * pow(10,-4);
    phoneNum -= exCode * pow(10, 4);
    usrNum = phoneNum;

    printf("The area code is: %d \n", areaCode);
    printf("The exchange code is: %d \n", exCode);
    printf("The user number is: %d \n", usrNum);

return 0;
}
```

C source file | length : 564 lines : 26 | Ln : 3 Col : 19 Pos : 56 | Windows (CR LF) | UTF-8 | INS

```
/cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185

kenns@LAPTOP-LS3JNR5E /cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185
$ ./phonenumber
Please enter the 10 digits phone number:6309403323

The area code is: 630
The exchange code is: 940
The user number is: 3323

kenns@LAPTOP-LS3JNR5E /cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185
$ ./phonenumber
Please enter the 10 digits phone number:9876543251

The area code is: 987
The exchange code is: 654
The user number is: 3251

kenns@LAPTOP-LS3JNR5E /cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185
$ ./phonenumber
Please enter the 10 digits phone number:1235486584

The area code is: 123
The exchange code is: 548
The user number is: 6584

kenns@LAPTOP-LS3JNR5E /cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185
$
```

Triangle:

C:\Users\kenns\OneDrive\Desktop\Desktop\SE185\Triangle.c - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

Phonenumber.c Triangle.c

```c
#include<stdio.h>
#include<math.h>
#include<stdlib.h>

int main (void){
    double x1 = 15.55;
    double y1 = 55.15;
    double x2;
    double y2;
    double distance;

    //Mike
    x2 = 22.05;
    y2 = 85.10;
    distance = sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
    printf("The E distance for Mike is: %lf \n", distance);

    //Mary
    x2 = 43.25;
    y2 = 9.80;
    distance = sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
    printf("The E distance for Mary is: %lf \n", distance);

    //Gary
    x2 = 2.55;
    y2 = 72.86;
    distance = sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
    printf("The E distance for Gary is: %lf \n", distance);

    //Logan
    x2 = 15.15;
    y2 = 40.40;
    distance = sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
    printf("The E distance for Logan is: %lf \n", distance);

return 0;
}
```

C source file | length : 787 lines : 37 | Ln : 3 Col : 19 Pos : 56 | Windows (CR LF) | UTF-8 | INS

/cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185

```
kenns@LAPTOP-L53JNR5E /cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185
$ ./triangle
The E distance for Mike is: 30.647227
The E distance for Mary is: 53.140498
The E distance for Gary is: 21.969162
The E distance for Logan is: 14.755423

kenns@LAPTOP-L53JNR5E /cygdrive/c/Users/kenns/OneDrive/Desktop/Desktop/SE185
$
```