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

void arraySort(int array[], int n){ //function to sort
  int i, j;
  int t=0;

  for (i=0; i<n; i++){
    for (j=0; j<n-1; j++){
      if(array[j]>array[j+1]){
        t=array[j];
        array[j]=array[j+1];
        array[j+1]=t;
      }
    }
  }
}
float calcMean(int array[], int n){ //function to calculate mean
  float avg;
  int i;
  float sum;
  for (i=0; i<n; i++){ //add every number in array
    sum+=array[i];
  }
  avg = sum/(n); //return average (MEAN)
  return avg;
}
float calcMedian(int array[], int n){ //function to calc median
  float median = 0;

  if (n%2 == 0){ //if n is a factor of 2
    median = ((array[(n-1)/2]+array[n/2])/2.0); //use the average of mid
    terms
  }
  else { //if n is NOT a factor of 2
    median = array[n/2]; //divide n by two
  }

  return median; //return median out
}
float calcStdDev(int array[], float m, int n){ //function to calc std dev
  float stdDev =0;
  int i;
  for (i=0; i<n; i++){ //calculate sigma(xi-xbar)^2
    stdDev += pow((array[i]-m),2);
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    }
    return sqrt(stdDev/(n-1)); //return the sqrt(stdDev)/n-1(STD equation)
}
int main(){
    srand(time(NULL)); //seed rand

    int arraySize;
    int i, j, n;
    float median = 0;
    float mean = 0;
    float standDev = 0;

    printf("Please enter the size of your random array: ");
    scanf("%d",&arraySize);

    int values[arraySize]; //sets values to array of size arraySize

    for(i=0;i<arraySize;i++){ //sets random numbers to array
        values[i]=rand()%100+1;
    }

    arraySort(values, arraySize); //sort
    median = calcMedian(values, arraySize); //calc median
    mean = calcMean(values, arraySize); //calc mean
    standDev = calcStdDev(values, mean, arraySize); //calc stdDev
    /*for(i=0;i<arraySize;i++){
        printf("Number #%d: %d\n", i, values[i]);
    }*/
    //This shows numbers for manual debugging

    printf("The mean of your array is %.2f.\n",mean);
    printf("The median of your array is %.2f.\n",median);
    printf("The standard deviation of your array is %.2f.\n",standDev);


}
```
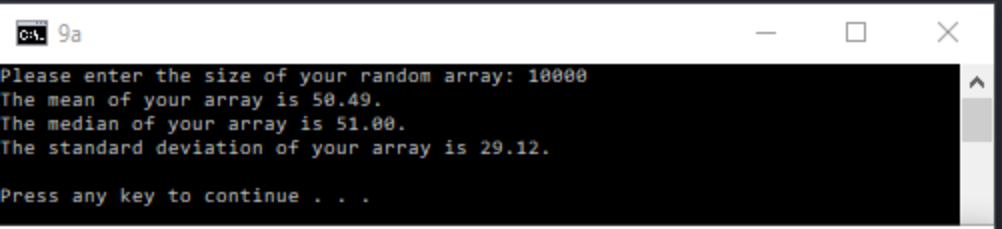
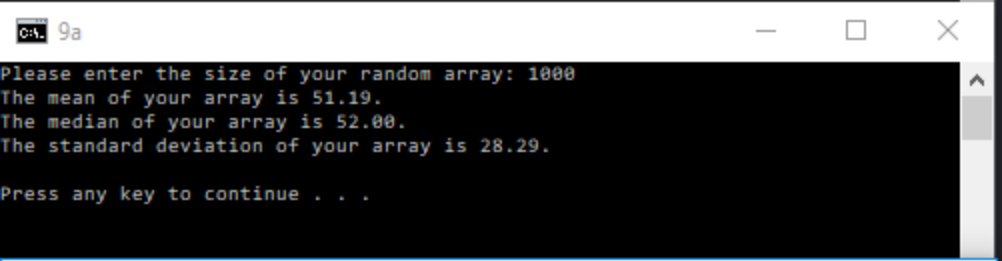
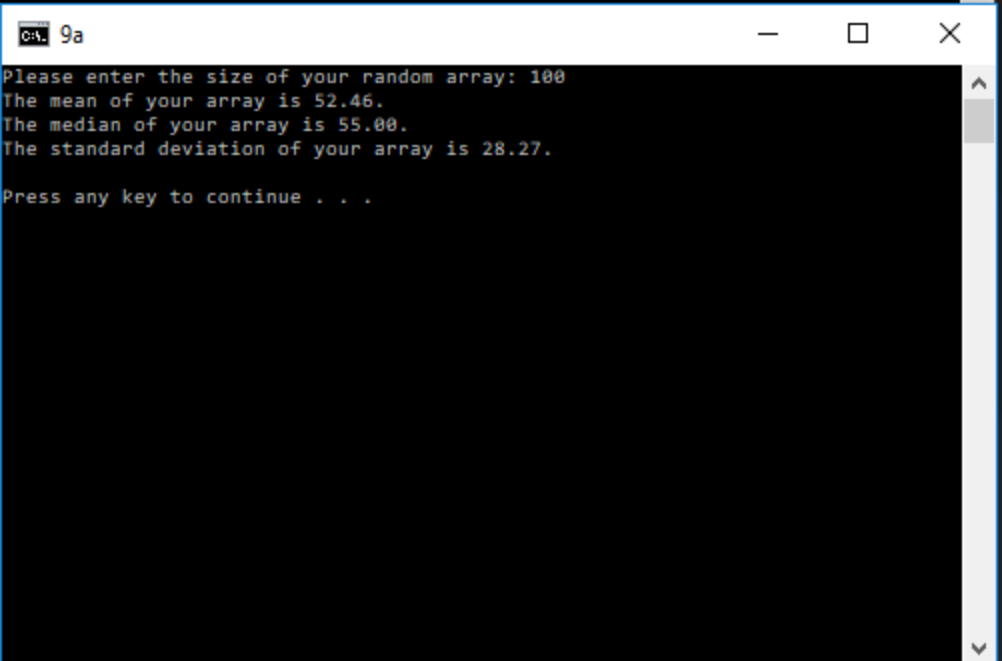
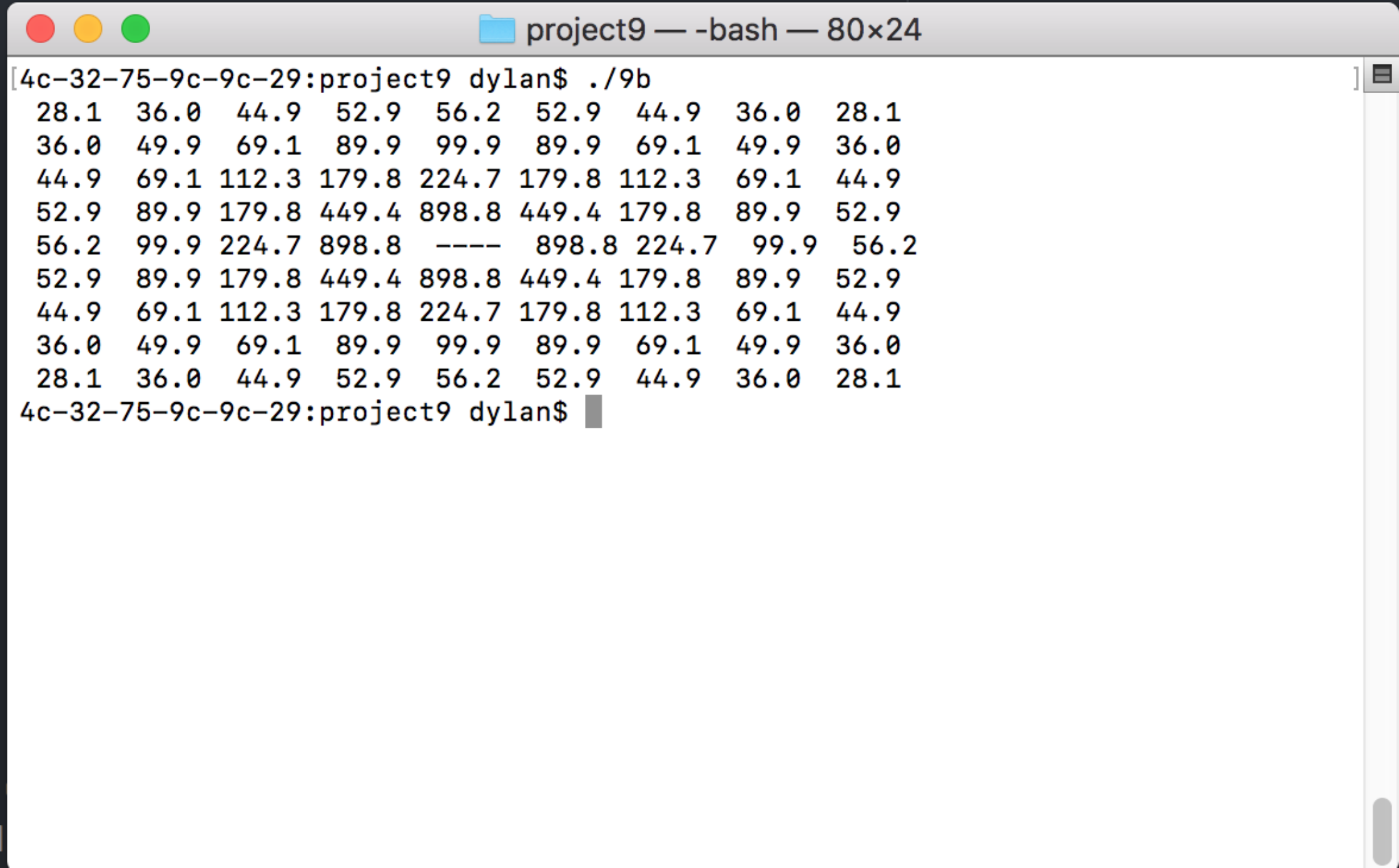

```c
#include <math.h>

#define E0 8.854e-12
#define PI 3.1415926

int main()
{
  const float q = 0.01e-9;
  const int numRows = 9;
  const int numCols = 9;
  int i,j;
  float distance;
  float eField[numRows][numCols];

  for(i=0; i<numRows; i++){
    for(j=0; j<numCols; j++){
      distance = sqrt(pow((0.04-(0.01*i)),2)+pow((0.04-(0.01*j)),2));
      eField[i][j]=q/(4*PI*E0*pow(distance,2));
      if (distance == 0){
        printf(" ----  ");
      }
      else {
        printf("%5.1f ",eField[i][j]);
      }
    }
    printf("\n");
  }
return 0;
}

```


9a
Please enter the size of your random array: 10000
The mean of your array is 50.49.
The median of your array is 51.00.
The standard deviation of your array is 29.12.
Press any key to continue . . .


9a
Please enter the size of your random array: 1000
The mean of your array is 51.19.
The median of your array is 52.00.
The standard deviation of your array is 28.29.
Press any key to continue . . .


9a
Please enter the size of your random array: 100
The mean of your array is 52.46.
The median of your array is 55.00.
The standard deviation of your array is 28.27.
Press any key to continue . . .


project9 — -bash — 80×24
4c-32-75-9c-9c-29:project9 dylan$ ./9b
28.1 36.0 44.9 52.9 56.2 52.9 44.9 36.0 28.1
36.0 49.9 69.1 89.9 99.9 89.9 69.1 49.9 36.0
44.9 69.1 112.3 179.8 224.7 179.8 112.3 69.1 44.9
52.9 89.9 179.8 449.4 898.8 449.4 179.8 89.9 52.9
56.2 99.9 224.7 898.8 ---- 898.8 224.7 99.9 56.2
52.9 89.9 179.8 449.4 898.8 449.4 179.8 89.9 52.9
44.9 69.1 112.3 179.8 224.7 179.8 112.3 69.1 44.9
36.0 49.9 69.1 89.9 99.9 89.9 69.1 49.9 36.0
28.1 36.0 44.9 52.9 56.2 52.9 44.9 36.0 28.1
4c-32-75-9c-9c-29:project9 dylan$