#include <cs50.h>

#include <string.h>

#include <math.h>

#include <stdio.h>

bool vote(string name);

void print\_winner(void);

 typedef struct

{

    string name;

    int votes;

}

candidate;

 int candidate\_count ;

candidate candidates[9];

int i ;

int j ;

string candidate\_winner ;

string candidate\_winner1 ;

string candidate\_winner2 ;

int main(int argc, string argv[])

{

     if (argc < 2)

    {

        printf("Usage: plurality [candidate ...]\n");

        return 1;

    }

    // Populate array of candidates

    candidate\_count = argc - 1;

    if (candidate\_count > 9)

    {

        printf("Maximum number of candidates is %i\n", 9);

        return 2;

    }

    for ( j = 0; j < candidate\_count ; j++) {

      candidates[j].name = argv[j + 1];

     candidate\_count = argc - 1;

                }

     int voter\_count = get\_int("Number of voters: ");

    for ( i = 0; i < voter\_count; i++)

    {

        string name ;

       name = get\_string("Vote: ");

       bool voting = vote (name) ;

       if (voting == false){

           printf("Invalid vote\n");

       }

    }

    print\_winner() ;

}

//////////////

        bool vote(string name){

              for ( j = 0; j < candidate\_count ; j++) {

        if( strcmp(candidates[j].name,name) == 0 ){

       candidates[j].votes += 1 ;

        return true ;

        }

     }

        return false ;

                  }

 ///////////////////

    void print\_winner(void) {

        for( j = 0 ; j < candidate\_count ; j++ ){

    if ( candidates[j+2].votes > candidates[j+1].votes && candidates[j+2].votes > candidates[j].votes ){

         candidate\_winner1 = candidates[j+2].name ;

              printf("%s\n", candidate\_winner1) ;

        return ;

    }

  else if (candidates[j+1].votes > candidates[j+2].votes && candidates[j+1].votes > candidates[j].votes ){

         candidate\_winner2 = candidates[j+1].name ;

              printf("%s\n",candidate\_winner2) ;

        return ;

  }

  else if ( candidates[j].votes > candidates[j+1].votes && candidates[j].votes > candidates[j+2].votes ){

         candidate\_winner = candidates[j].name ;

              printf("%s\n", candidate\_winner) ;

        return ;

    }

  else if( candidates[j+1].votes == candidates[j].votes && candidates[j].votes == candidates[j+2].votes ){

         candidate\_winner1 = candidates[j].name;

         candidate\_winner2 = candidates[j+1].name;

         candidate\_winner= candidates[j+2].name;

     printf("%s\n%s\n%s\n", candidate\_winner1,candidate\_winner2,candidate\_winner) ;

        return ;

 }

 else if( candidates[j].votes == candidates[j+1].votes ){

         candidate\_winner1 = candidates[j].name;

         candidate\_winner2 = candidates[j+1].name;

     printf("%s\n%s\n", candidate\_winner1,candidate\_winner2) ;

        return ;

 }

 else if( candidates[j].votes == candidates[j+2].votes ){

         candidate\_winner1 = candidates[j].name;

         candidate\_winner2 = candidates[j+2].name;

     printf("%s\n%s\n", candidate\_winner1,candidate\_winner2) ;

        return ;

 }

  else if( candidates[j+1].votes == candidates[j+2].votes ){

         candidate\_winner1 = candidates[j+1].name;

         candidate\_winner2 = candidates[j+2].name;

     printf("%s\n%s\n", candidate\_winner1,candidate\_winner2) ;

        return ;

 }

}

    }