#include <stdio.h>

/* Function printArray
   Purpose: Prints the first 20 elements of a character array
   Input parameters:
   char array[]: an array of characters greater than 20 elements in size
   Returns:
   void
*/
void printArray(char array[])
{
    int i;

    for (i = 0; i < 20; i++)
    {
        /* The ASCII codes between 32 and 126 are printable as characters */
        if (array[i] >= 32 && array[i] <= 126)
            printf("%c", array[i]);
        else
            printf("\\%d \n", array[i]);
    }
    return;
}

/* Function strlen
   Purpose: Calculate the length of a null terminated string in a
   character array.
   Input parameters:
   char array[]: an array of characters with a null (0) character
   Returns:
   The length of the string - int
*/
int strlen(char array[])
{
    int len;
    len = 0;

    do
    {
        if (array[len] != 0)
            len ++;
    } while (array[len] != 0);

    return len;
}

int main()
{
    char name[40];
    char c;
    int i;

    /* Demonstrates how to treat a char as a char and an int simultaneously */
    c = 'a';
    printf("The character is %c and its code is %d", c, c);
    printf("Please enter your name: ");
    scanf("%s", &name);
    printf("Your name is %s and it is %d \n", name, strlen(name));
    printArray(name);
    printf("\n");

    /* Reading a new name into the same array leaves some of the old stuff behind */
    printf("Please enter your name: ");
    /* You have to explicitly blank out the array if you want to */
    for (i=0; i<40; i++)
        name[i] = 0;
    scanf("%s", &name);
printf("Your name is %s and it is %d long\n", name, strlen(name));
printArray(name);
printf("\n");

return 0;
}