BLG102E Extra Session

Pointers and Strings

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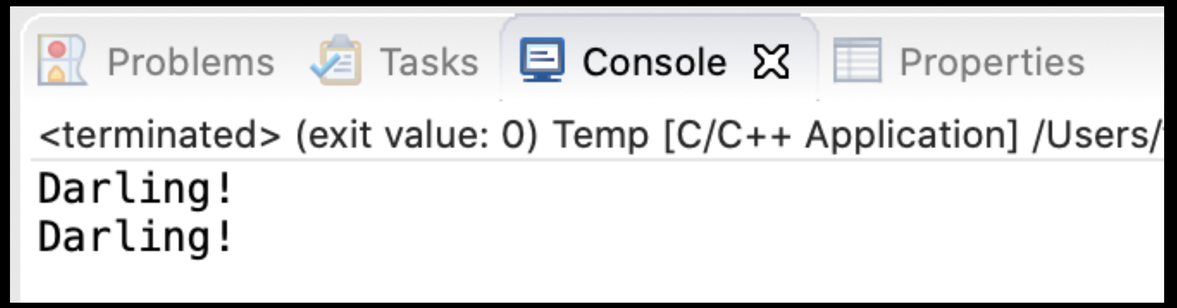
1. An array of characters

- Write a program to print a word which is stored in an array of characters.
    - First use %c which is for formatting chars
    - Then use %s which is for formatting strings

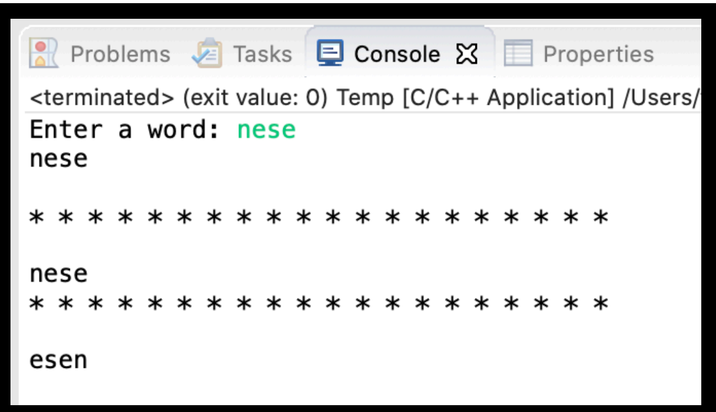
```c
#include <stdio.h>

int main() {

    char word[] = {'D', 'a', 'r', 'l', 'i', 'n', 'g', '!', '\0' };
    int i;

    // First print each character using %c.


    // Then print the word as a string using %s.


    return 0;
}
```



2. Address of an array

- Write a program to print a word stored in an array using a pointer which stores the address of the array.
    - First print the word using the array itself.
    - Second print the word using the address of the array stored in a pointer.
    - Then print the reverse of the word using the address of the array stored in a pointer.

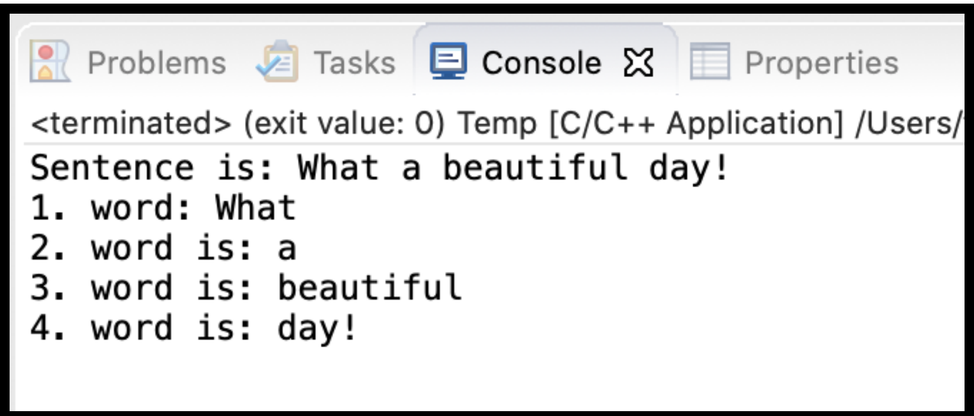
```c
#include <stdio.h>

int main() {

    char word[15];
    char *ptr = &word[0];
    // ptr = word;
    // ptr = &word[SIZE -1];
    int i;

    printf("Enter a word: ");
    scanf("%s", word);

    // First print the word using the array itself.



    // Second print the word
    // using the address of the array stored in a pointer.



    // Then print the reverse of the word
    // using the address of the array stored in a pointer.



    return 0;
}
```



3. Separate the sentence into phrases

- Write a program to print each word of a sentence separately using whitespace character ‘ ’ as a separator.
    - First print the first word of the sentence as we don’t have a whitespace character before the first word.
    - Then print the rest of the words using blank ‘ ’ as a separator.

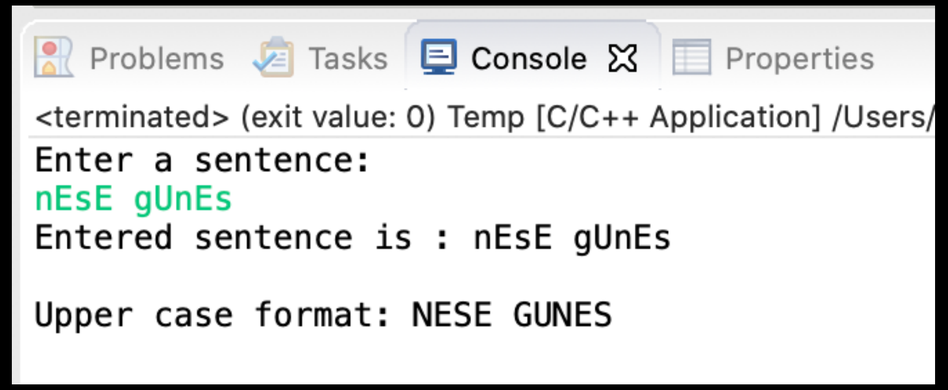
```c
#include <stdio.h>

int main() {

    char *sentence = "What a beautiful day!";
    char *word = sentence;
    int i = 1;
    char *ptr;

    printf("Sentence is: %s \n", sentence);


    // Print each word of the sentence separately.



    return 0;
}
```



4. Upper case format
of a string

- Write a program to get upper case version of a string.
    - First get the sentence from the user using fgets() function.
    - Then change lower case characters to upper case characters.
- Remember upper case ‘A’ is 65, lower case ‘a’ is 97 in ASCII Table.

```c
#include <stdio.h>

int main() {

    char str[20], *ptr;
    int diff = 'a' - 'A';

    // First get the sentence from the user using fgets() function.


    // Then change lower case characters to upper case characters.


    return 0;
}
```

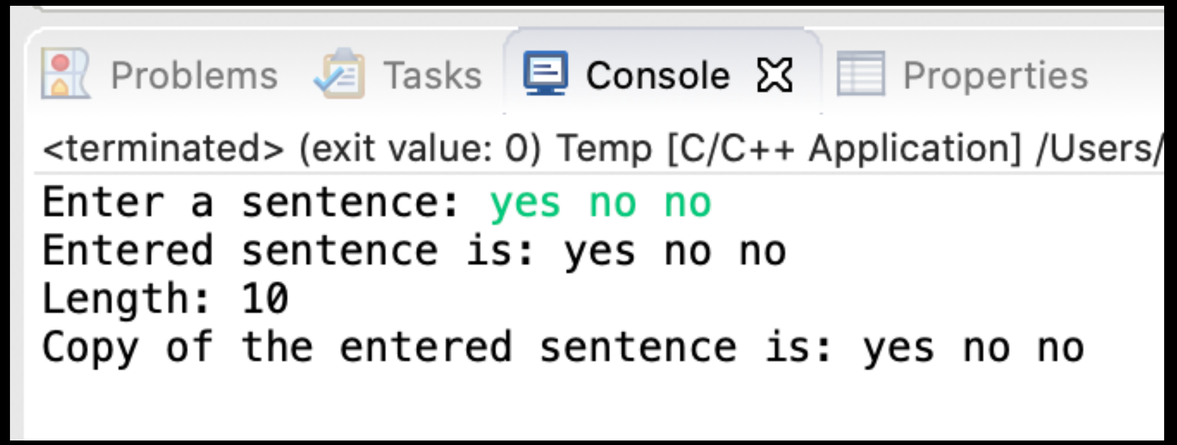


5. Length of a string

Standard C library functions

- Write a program to calculate the length of string using standard C library function strlen().
    - First get the sentence from the user using fgets() function.
    - Next print the length of the string using strlen().
    - Then use strcpy() function and print the copied sentence.

```c
#include <stdio.h>
#include <string.h>

int main() {

    char sentence[20], copy[20];

    // Get the sentence using fgets() function.

    // Print the length of the function using strlen().

    // Copy the sentence and print the copied one.


    return 0;
}
```



6. Convert string to integer using atoi() from <stdlib.h>

- Write a program to get the integer value of a string using C standard library function atoi(), note that we must include <stdlib.h>.
    - First get the integer value of a string which stores: “98993489”.
    - Second get the integer value of a string which stores: “itu.edu.tr”.
    - Next get the integer value of a string which stores: “itu94.edu.tr”.
    - Then get the integer value of a string which stores: “itu94.edu.tr16”.
    - Lastly get the integer value of a string which stores: “36itu94.edu.tr16”.

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

int main () {
   int val;
   char str[20];

   // First get the integer value of a string which stores: “98993489”.

   // Second get the integer value of a string which stores: “itu.edu.tr”.

   // Next get the integer value of a string which stores: “itu94.edu.tr”.

   // Then get the integer value of a string which stores: “itu94.edu.tr16”.

   // Lastly get the integer value of a string which stores: “36itu94.edu.tr16”.


   return(0);
}
```

Problems Tasks Console Properties

<terminated> (exit value: 0) Temp [C/C++ Application] /Users/tardis/

```
String value = 98993489, Int value = 98993489
String value = itu.edu.tr, Int value = 0
String value = itu94.edu.tr, Int value = 0
String value = itu94.edu.tr16, Int value = 0
String value = 36itu94.edu.tr16, Int value = 36
```

Good luck.