

Programación de software de sistemas

Ayudantía 2

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P1 string_len

Crear una función “`int string_len(char *str)`” que retorne la cantidad de char legibles en un string.

```
char *str = "Hello, world!";  
int len = 0;
```

'H' 'e' 'l' 'l' 'o' ',' ' ' 'w' 'o' 'r' 'l' 'd' '!' '\0'

↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑



Solución

```
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9 int string_len(char *str)
10 {
11     int len = 0;
12     while( *str != '\0' )
13     {
14         len++;
15         str++;
16     }
17     return len;
18 }
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```



P2 copy_string

Crear función “`void copy_string(char *str, char *dest)`” que copie los char de un string a otro char inicializado en main.

```
char *str = "Hello";
```

```
char *dest[str_len(str)];
```

'H' 'e' 'l' 'l' 'o'

↑ ↑ ↑ ↑ ↑

str

| | | | | |
|-----|-----|-----|-----|-----|
| 'H' | 'e' | 'l' | 'l' | 'o' |
|-----|-----|-----|-----|-----|

↑ ↑ ↑ ↑ ↑

dest



Solución

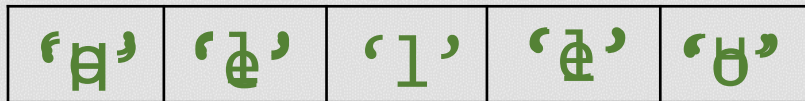
```
void copy_string(char *str, char *dest)
{
    while( *str != '\0' )
    {
        *dest++ = *str++;
    }
    *dest = '\0';
}
```



P3 reverse_string

Crear función “`void reverse_string(char *str)`” que reordene en reversa los char del string str.

```
char *str = "Hello";
```



```
char temp; 
```



Solución

```
Void reverse_string(char *str)
{
    char aux;
    int len = string_len(str);
    int j = len - 1;

    for (int i = 0; i < len / 2 ; i++)
    {
        aux = str[i];
        str[i] = str[j];
        str[j] = aux;
        j--;
    }
}
```



P4 reverse_string

Cree la función “`char *reverse_string(char *str)`” que retorne una nueva cadena de char usando una variable dinámica y la asigne a una variable en main.



Solución

```
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8 char *reverse_string(char *str)
9 {
10
11     int len = string_len(str);
12     char *ans = malloc(sizeof(char)*len);
13
14
15
16     int j = len - 1;
17
18
19
20     while (*str != '\0')
21     {
22
23         ans[j] = *str++;
24         j--;
25
26     }
27
28
29
30     return ans;
31
32 }
33
```



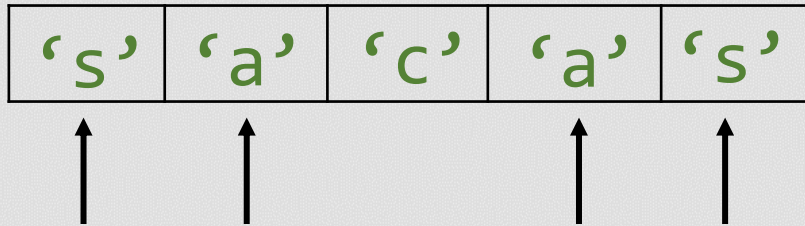
P5 Palíndromo

Cree la función “`int palindromo(char *str)`” que retorne 1 si es palíndromo o 0 si no lo es.

```
char *str = “sacas”;
```

```
char *j = str;
```

```
char *i = ;
```



Solución

```
1
2
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6
7 char *reverse_string(char *str)
8 {
9
10     char *i = str;
11     char *j = str + str_len(str) - 1;
12     while ( i < j )
13     {
14         if(*i != *j){
15             return 0;
16         }
17         i++;
18         j--;
19     }
20     return 1;
21 }
22
23
24
25
26
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32
33
```

```
char *reverse_string(char *str)
{
    int j = str_len(str) -1;

    for ( int i = 0;i < str_len(str);i++ )
    {
        if ( str[i] != str[j] ){
            return 0;
        }
        j--;
    }
    return 1;
}
```



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Consultas!

The logo of the University of the Basque Country (UPV) is located in the bottom right corner. It consists of the letters 'UPV' in a stylized, bold, blue font. The 'U' and 'P' are connected, and the 'V' is separate.

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Top