

palindrome

Write a function `palindrome()` that reads a character string and determines whether or not it is a palindrome. A palindrome is a sequence of characters that reads the same forwards and backwards. For example, "abba" and "abcba" are palindromes, but "abcd" is not. The function returns 1 if it is palindrome, or 0 if otherwise. The function prototype is given as follows:

```
int palindrome(char *str);
```

A sample program template is given below for testing the function:

```
#include <stdio.h>
#include <string.h>
#define INIT_VALUE -1000
int palindrome(char *str);
int main()
{
    char str[80], *p;
    int result = INIT_VALUE;

    printf("Enter a string: \n");
    fgets(str, 80, stdin);
    if (p=strchr(str, '\n')) *p = '\0';
    result = palindrome(str);
    if (result == 1)
        printf("palindrome(): A palindrome\n");
    else if (result == 0)
        printf("palindrome(): Not a palindrome\n");
    else
        printf("An error\n");
    return 0;
}
int palindrome(char *str)
{
    /* Write your code here */
}
```

Some test input and output sessions are given below:

(1) Test Case 1:
Enter a string:
abcba
palindrome(): A palindrome

(2) Test Case 2:
Enter a string:

abba

palindrome(): A palindrome

(3) Test Case 3:

Enter a string:

abcde

palindrome(): Not a palindrome

(4) Test Case 4:

Enter a string:

abb a

palindrome(): Not a palindrome