ASSESSMENT - 1

INPUT:

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#include <stdio.h>
#include <string.h>
#include <ctype.h>

int main() {
    char str[100], str2[100], copy[100];
    int choice;
    char cont;

    printf("Enter your string: ");
    scanf(" %[^\n]", str); // Read input with spaces

    do {
        printf("\n===== STRING OPERATIONS MENU =====\n");
        printf("1. Reverse the string\n");
        printf("2. Concatenate another string\n");
        printf("3. Check Palindrome\n");
        printf("4. Copy the string\n");
        printf("5. Find length of the string\n");
        printf("6. Find frequency of a character\n");
        printf("7. Count vowels and consonants\n");
        printf("8. Count spaces and digits\n");
        printf("Enter your choice (1-8): ");
        scanf("%d", &choice);

        if (choice == 1) {
            int len = strlen(str);
            printf("Reversed String: ");
            for (int i = len - 1; i >= 0; i--) {
                printf("%c", str[i]);
            }
            printf("\n");
        }
        else if (choice == 2) {
            printf("Enter second string to concatenate: ");
            scanf(" %[^\n]", str2);
            strcat(str, str2);
            printf("Concatenated String: %s\n", str);
        }
        else if (choice == 3) {
            int len = strlen(str);
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    int flag = 1;
    for (int i = 0; i < len / 2; i++) {
        if (str[i] != str[len - i - 1]) {
            flag = 0;
            break;
        }
    }
    if (flag)
        printf("The string is a palindrome.\n");
    else
        printf("The string is not a palindrome.\n");
}
else if (choice == 4) {
    strcpy(copy, str);
    printf("Copied String: %s\n", copy);
}
else if (choice == 5) {
    printf("Length of the string: %lu\n", strlen(str));
}
else if (choice == 6) {
    char ch;
    int count = 0;
    printf("Enter character to find frequency: ");
    scanf(" %c", &ch);
    for (int i = 0; str[i]; i++) {
        if (str[i] == ch)
            count++;
    }
    printf("Frequency of '%c': %d\n", ch, count);
}
else if (choice == 7) {
    int vowels = 0, consonants = 0;
    for (int i = 0; str[i]; i++) {
        char ch = tolower(str[i]);
        if (isalpha(ch)) {
            if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u')
                vowels++;
            else
                consonants++;
        }
    }
    printf("Vowels: %d, Consonants: %d\n", vowels, consonants);
}
else if (choice == 8) {
    int spaces = 0, digits = 0;
    for (int i = 0; str[i]; i++) {
        if (isdigit(str[i]))
            digits++;
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            else if (isspace(str[i]))
                spaces++;
        }
        printf("Spaces: %d, Digits: %d\n", spaces, digits);
    }
    else {
        printf("Invalid choice. Please select a valid option.\n");
    }

    printf("Do you want to continue? (y/n): ");
    scanf(" %c", &cont);

} while (cont == 'y' || cont == 'Y');

printf("Thank you! Program Ended.\n");
return 0;
}
```

OUTPUT:


D:\c\hanjari.exe
Enter your string: WELCOME
===== STRING OPERATIONS MENU =====
1. Reverse the string
2. Concatenate another string
3. Check Palindrome
4. Copy the string
5. Find length of the string
6. Find frequency of a character
7. Count vowels and consonants
8. Count spaces and digits
Enter your choice (1-8): 8
Spaces: 0, Digits: 0
Do you want to continue? (y/n): Y
===== STRING OPERATIONS MENU =====
1. Reverse the string
2. Concatenate another string
3. Check Palindrome
4. Copy the string
5. Find length of the string
6. Find frequency of a character
7. Count vowels and consonants
8. Count spaces and digits
Enter your choice (1-8): 5
Length of the string: 7
Do you want to continue? (y/n): N
Thank you! Program Ended.

Process exited after 31.28 seconds with return value 0
Press any key to continue . . .