Structured Programming Quiz 4V2

Student Name /ID:

**Q1: What is the output of the following code:**

#include<stdio.h>

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int main() {

char string[] = "C programming is cool!";

int y = 0;

char a = 'm';

char b = '#';

printf(" %s\n", string);

for (int i = 0; string[i] != '\0'; i++) {

if (string[i] == a) {

y++;

string[i] = b;

}

}

printf(" %s\n", string);

printf("a:%c y: %d\n", a, y);

return 0;

}

Q2: Write a C function named char\_frequency that takes two parameters:

1. A string (character array).
2. A character to search for.

The function should return how many times the given character appears in the string.

**Requirements:**

* Implement char\_frequency separately and call it from main.
* In main, ask the user to input a sentence and a character.
* Print the number of times the character appears in the string.

#include <stdio.h>

// Function to count how many times a character appears in a string

int char\_frequency(char str[], char target) {

int count = 0;

int i = 0;

while (str[i] != '\0') {

if (str[i] == target) {

count++;

}

i++;

}

return count;

}

int main() {

char str[200];

char ch;

// Prompt user for a sentence

printf("Enter a sentence: ");

fgets(str, sizeof(str), stdin); // Read sentence with spaces

// Prompt user for a character

printf("Enter a character to search for: ");

scanf(" %c", &ch); // Space before %c skips newline from previous input

// Call function and print result

int freq = char\_frequency(str, ch);

printf("The character '%c' appears %d time(s) in the sentence.\n", ch, freq);

return 0;

}