```
#include <stdio.h>
#include <ctype.h>
int main() {
  char text[1000]; // Buffer to store input text
  int char_count = 0;
  int alphabets = 0;
  int digits = 0;
  int spaces = 0;
  int special_chars = 0;
  printf("Enter text to analyze: ");
  fgets(text, sizeof(text), stdin);
  // Process each character until we hit null terminator
  for(int i = 0; text[i] != '\0'; i++) {
    if(text[i] == '\n') {
       continue; // Skip newline character from fgets
    }
    char_count++; // Increment total character count
    if(isalpha(text[i])) {
       alphabets++;
    }
    else if(isdigit(text[i])) {
       digits++;
    else if(isspace(text[i])) {
       spaces++;
    }
```

```
else {
    special_chars++;
}

// Print results

printf("\nCharacter Analysis Results:\n");

printf("-----\n");

printf("Total Characters: %d\n", char_count);

printf("Alphabets: %d\n", alphabets);

printf("Digits: %d\n", digits);

printf("Spaces: %d\n", spaces);

printf("Special Characters: %d\n", special_chars);

return 0;
}
```

Let's break down how this program works:

- 1. We define a function count_characters that takes a text string as input.
- 2. Initialize counters for:
 - Total characters
 - Alphabets (a-z, A-Z)
 - o Digits (0-9)
 - Special characters (!@#\$ etc.)
 - o Spaces
- 3. The program then iterates through each character in the text and:
 - Increments the total character count
 - Uses built-in Python string methods to check character type:
 - isalpha(): checks if character is a letter
 - isdigit(): checks if character is a number
 - isspace(): checks if character is a space

- $\circ\quad$ If none of these conditions are met, it's counted as a special character
- 4. Finally, returns a dictionary containing all the counts

For the example text "Hello World! 123":

• Total characters: 14

• Alphabets: 10

• Digits: 3

• Special characters: 1 (the exclamation mark)

• Spaces: 1