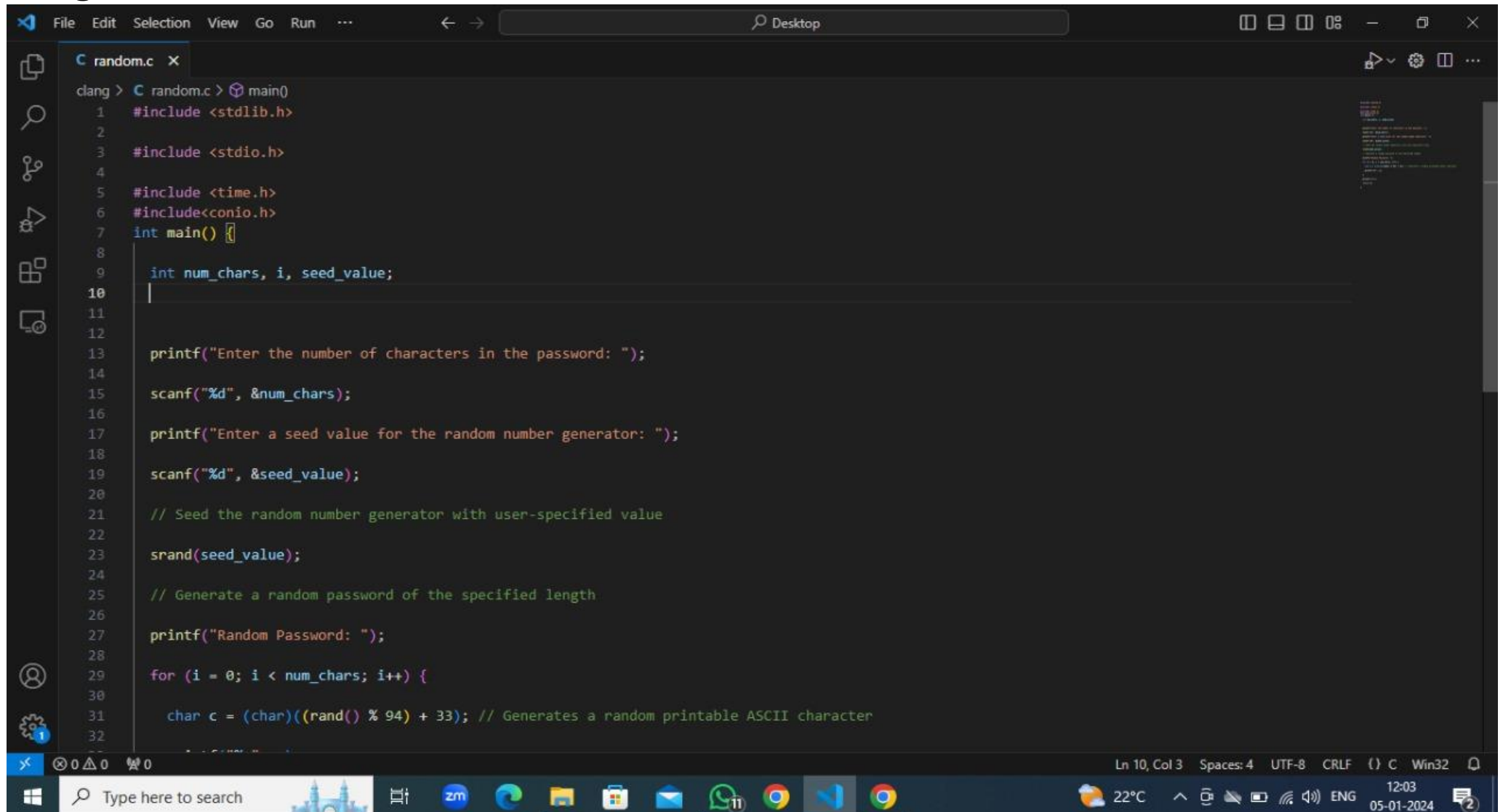


2.Question: Random Password Generator

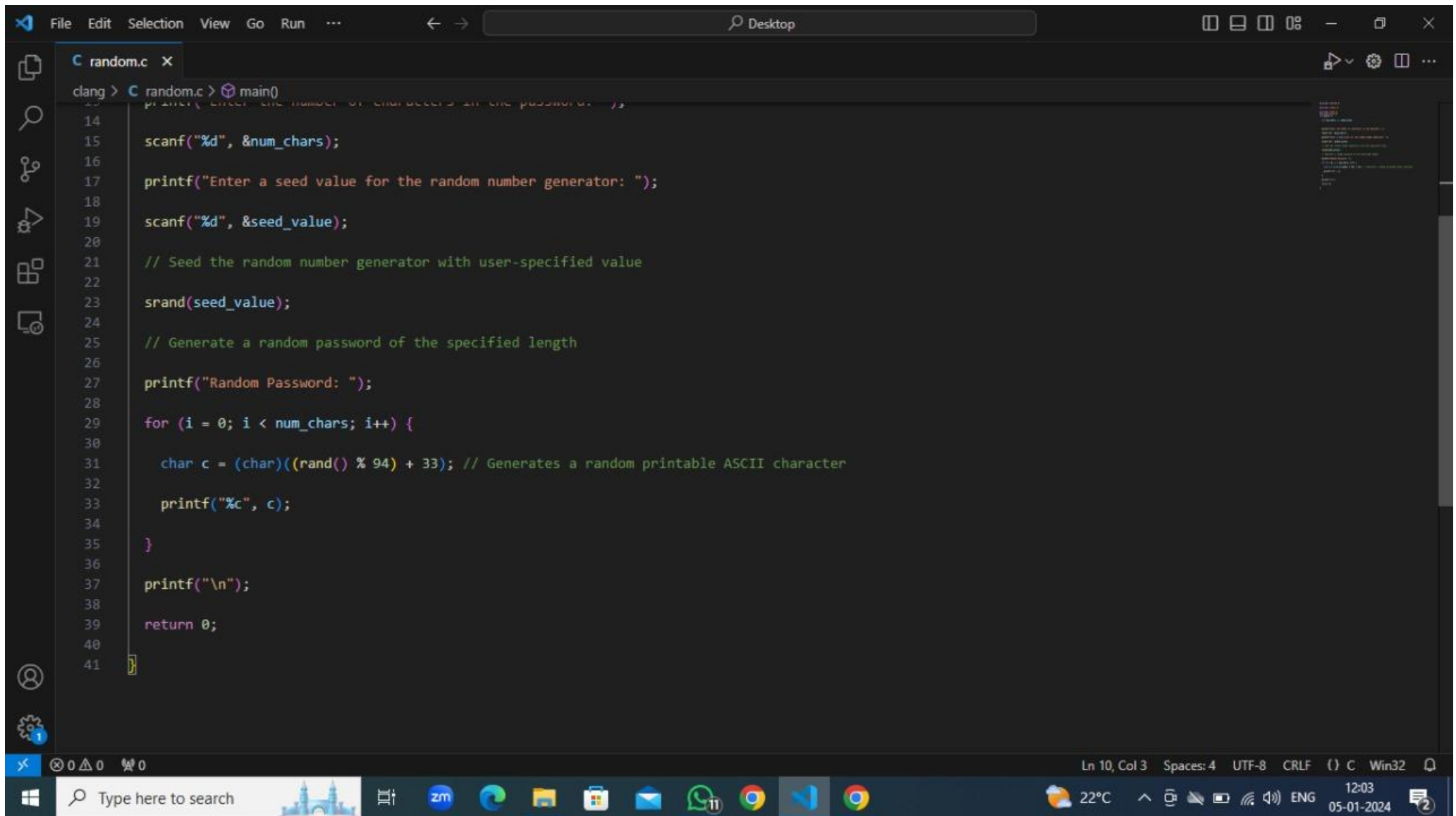
In this example, we are writing a program that generates a random password consisting of a user-specified number of characters. We will use **srand()** to seed the random number generator with the user-specified seed value, ensuring that the program will generate the same sequence of random characters every time it is run with the same seed value.

Program:



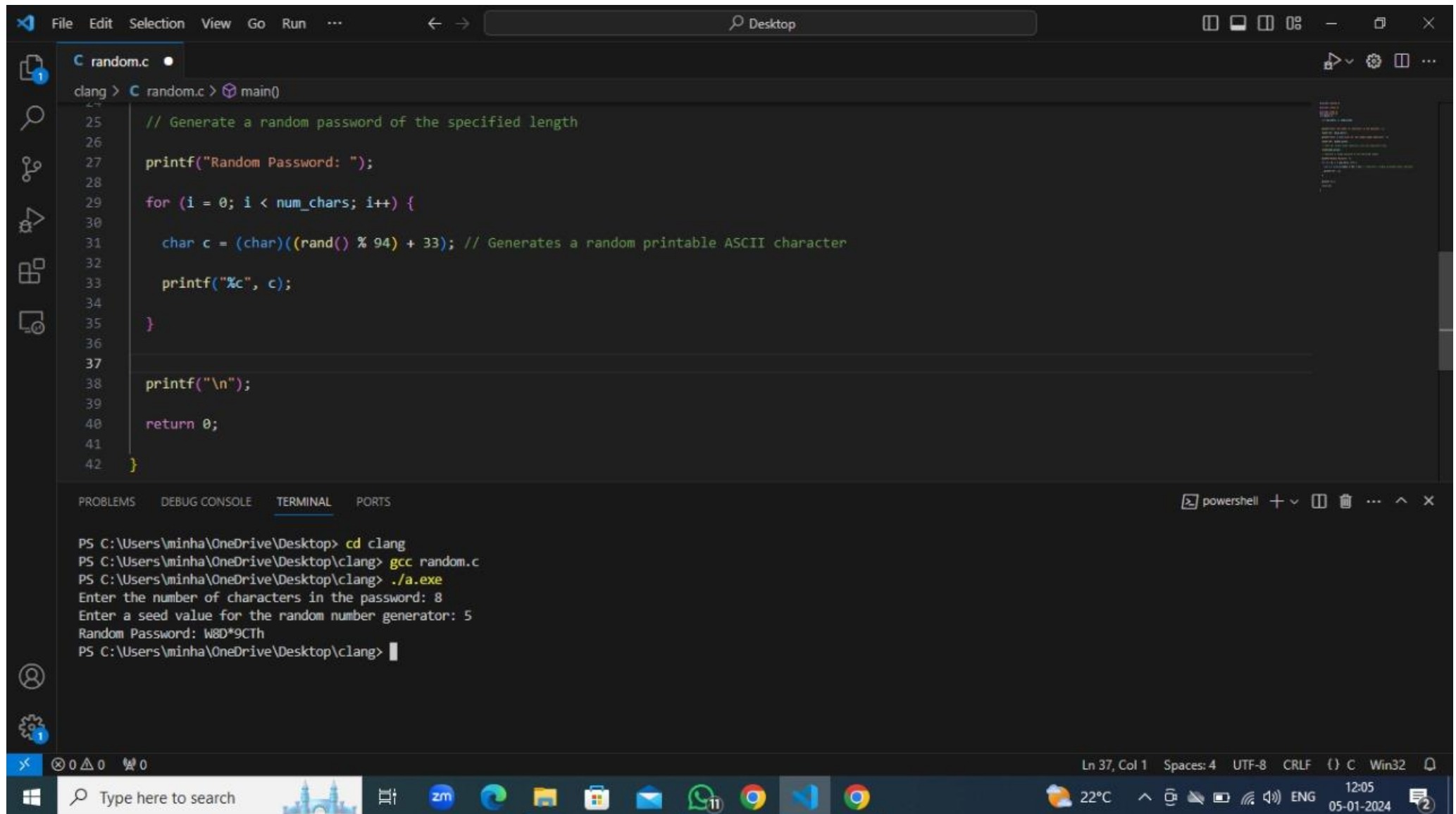
```
clang > C random.c > main()
1  #include <stdlib.h>
2
3  #include <stdio.h>
4
5  #include <time.h>
6  #include <conio.h>
7  int main() {
8
9      int num_chars, i, seed_value;
10
11
12
13      printf("Enter the number of characters in the password: ");
14
15      scanf("%d", &num_chars);
16
17      printf("Enter a seed value for the random number generator: ");
18
19      scanf("%d", &seed_value);
20
21      // Seed the random number generator with user-specified value
22
23      srand(seed_value);
24
25      // Generate a random password of the specified length
26
27      printf("Random Password: ");
28
29      for (i = 0; i < num_chars; i++) {
30
31          char c = (char)((rand() % 94) + 33); // Generates a random printable ASCII character
32
33      }
```

The screenshot shows a code editor with a dark theme. The file name is 'random.c'. The code is a C program that prompts the user for the number of characters and a seed value, then generates a random password of that length. The code uses `srand()` to seed the random number generator and `rand()` to generate random characters. The program is currently at line 10, column 3. The status bar at the bottom shows the system tray with various icons and the date/time.



```
File Edit Selection View Go Run ... Desktop
C random.c x
clang > C random.c > main()
13 printf("Enter the number of characters in the password: ");
14
15 scanf("%d", &num_chars);
16
17 printf("Enter a seed value for the random number generator: ");
18
19 scanf("%d", &seed_value);
20
21 // Seed the random number generator with user-specified value
22
23 srand(seed_value);
24
25 // Generate a random password of the specified length
26
27 printf("Random Password: ");
28
29 for (i = 0; i < num_chars; i++) {
30
31     char c = (char)((rand() % 94) + 33); // Generates a random printable ASCII character
32
33     printf("%c", c);
34
35 }
36
37 printf("\n");
38
39 return 0;
40
41
Ln 10, Col 3 Spaces: 4 UTF-8 CRLF ( ) C Win32
Type here to search 22°C 12:03 05-01-2024
```

Output:



The image shows a Visual Studio Code editor window with a C program named `random.c` open. The program generates a random password of a specified length. The terminal output shows the program being compiled and executed, with the user entering the number of characters (8) and a seed value (5), resulting in the password `W8D*9CTh`.

```
clang > C random.c > main()
25 // Generate a random password of the specified length
26
27 printf("Random Password: ");
28
29 for (i = 0; i < num_chars; i++) {
30
31     char c = (char)((rand() % 94) + 33); // Generates a random printable ASCII character
32
33     printf("%c", c);
34
35 }
36
37
38 printf("\n");
39
40 return 0;
41
42 }
```

PROBLEMS DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\minha\OneDrive\Desktop> cd clang
PS C:\Users\minha\OneDrive\Desktop\clang> gcc random.c
PS C:\Users\minha\OneDrive\Desktop\clang> ./a.exe
Enter the number of characters in the password: 8
Enter a seed value for the random number generator: 5
Random Password: W8D*9CTh
PS C:\Users\minha\OneDrive\Desktop\clang> |
```

Ln 37, Col 1 Spaces: 4 UTF-8 CRLF () C Win32

22°C 12:05 05-01-2024