

# CSCI12042-Structured Programming II

## Coursework Assignment I

GitHub Link: - <https://github.com/PawanGunawardhana/Password-Generator>

Utility Task Topic: - Password Generator

About: -

This is a simple C program that serves as a password generator, creating strong and random passwords of a specified length. The program uses the standard C library functions and the rand() function to produce passwords containing a mix of printable ASCII characters.

The generated passwords are randomly generated, making them difficult to predict. However, for more secure applications, it is recommended to use a stronger random number generator or password manager.

Implementation of the program: -

1. Import C programming libraries and variables declaration.

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>

#define MAX_PASSWORD_LENGTH 100

char generateRandomChar() {
    // ASCII values for printable characters: 33 to 126
    return (char)(33 + rand() % 94);
}

void generatePassword(char* password, int length) {

int main() {
    int passwordLength;
    char password[MAX_PASSWORD_LENGTH + 1];
```

2. The program will prompt you to enter the desired length for the password.

```
int main() {
    int passwordLength;
    char password[MAX_PASSWORD_LENGTH + 1];

    srand(time(0)); // Seed the random number generator with the current time

    printf("\n\n\t\t*****-----WELCOME TO YOUR RELIABLE PASSWORD GENERATOR-----*****\n");
    printf("\n\n*Enter the desired password length: ");
    scanf("%d", &passwordLength);
```

```
*****-----WELCOME TO YOUR RELIABLE PASSWORD GENERATOR-----*****

*Enter the desired password length:
```

3. Ensure that the password length is between 1 and MAX\_PASSWORD\_LENGTH (currently set to 100), as the program will reject values outside this range.

```
if (passwordLength <= 0 || passwordLength > MAX_PASSWORD_LENGTH) {
    printf("\n\n\t\t!!!!-----INVALID PASSWORD LENGTH.PLEASE CHOOSE A LENGTH BETWEEN 1 AND %d-----!!!!\n\n", MAX_PASSWORD_LENGTH);
    return 1;
```

```
!!!!-----INVALID PASSWORD LENGTH.PLEASE CHOOSE A LENGTH BETWEEN 1 AND 100-----!!!!
```

4. If the user entered a correct password length the program will then generate a random password and display it on the screen.

```
generatePassword(password, passwordLength);  
printf("\n\n*Your Generated Password: %s\n", password);
```

```
*Your Generated Password: 0@#VL2z56N
```