Lab 1

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CB.EN.P2CYS23007

1. Write a C Program to authenticate a user using username and password. Have a list of 5 usernames and passwords in an array. If the entered username and password matches with the username / password combination in the array, then print as "Authentication Successful" else print "Authentication failed , try again". The user is permitted to enter the wrong password only 3 times. If the user exceeds the limit, then print "Limit exceeded. Try later"

```c
#include<stdio.h>
#include<string.h>
#include<stdlib.h>

 int main(){
    const char *  names[]={"user1","user2","user3","user4","user5"};
    const char * pass[] = {"abc","abcd","efgh","abcdef","abcdef"};
    char user_in[10];
    char pass_in[10];
    int i;
    int count=0;

    while(count<3){
        if(count>0){
            printf("wrong : try again, Attempt :%d",count);
        }
        printf("\nEnter the username : ");
        scanf("%s",user_in);
        printf("\nEnter the password : ");
        scanf("%s",pass_in);
        for(i=0;i<5;i++){
            if((strcmp(names[i],user_in)==0)&&(strcmp(pass[i],pass_in)==0)){
                printf("\n Login in  SucessFully !!!!");
                exit(0);
            }

        } count++;
    }
    if(count==3){
        printf("You have reached max attempts, try agian later");
```

```
    }


}
```

Output

```
Enter the username : user2

Enter the password : abcd

 Login in  SucessFully !!!!
PS C:\Users\ROG> s
```

2. Write a C program to generate strong passwords of a length specified by the user.

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

int main(){
    char
list[]="12345678!@#$%^&*()ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz
";
    int n;
    printf("\n length of password :");
    scanf("%d",&n);
    if (n>=8)
    {

    srand(time(NULL));
    for(int i=0;i<n;i++){
        printf("%c",list[rand() % (sizeof list - 1)]);
    }
    }
    else printf("\n length of password should be greater than 7 :");
}
```

Output

```
 length of password :8
RnP#84Zc
PS C:\Users\ROG>
```

3. Write a C program to create a password strength meter. A password is said to be strong if it is at least 8 characters long and contains at least one lowercase character, one uppercase character, one special character (!@#$%^&*()) and one digit. The program should obtain a password string from the user and compute the password strength (in percentage) based on the 5 criteria listed above for strong passwords.

```c
#include <stdio.h>
#include <string.h>
int main()
{
    char password[50];
    int passwd_strength = 20;
    printf("Enter the password : ");
    scanf("%s", password);
    printf("%s", password);
    int x = 0, x_n = 0, x_l = 0, x_u = 0, x_s = 0;
    char numeriacals[] = "1234567890";
    char lowercase[] = "abcdefghijklmnopqrstuvwxyz";
    char uppercase[] = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
    char special[] = "!@#$%^&*()";

    if (strlen(password) >= 8)
    {
        x = x + 1;
    }
    for (int i = 0; i < strlen(password); i++)
    {
        if (strchr(numeriacals, password[i]) && x_n == 0)
        {
            x_n = x_n + 1;
            continue;
        }
        if (strchr(lowercase, password[i]) && x_l == 0)
        {
            x_l = x_l + 1;
            continue;
        }
        if (strchr(uppercase, password[i]) && x_u == 0)
        {
            x_u = x_u + 1;
            continue;
        }
        if (strchr(special, password[i]) && x_s == 0)
```

```
        {
            x_s= x_s + 1;
            continue;
        }
    }
    printf("Password strength is %d ", passwd_strength * (x + x_l + x_n + x_s
+ x_u));
}
```

Output

```
owsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-zpes4pc1.p52' '--std
m' '--stderr=Microsoft-MIEngine-Error-zs0t2ajm.wgy' '--pid=Microsoft-MIEn
nGW\bin\gdb.exe' '--interpreter=mi'
Enter the password : Ananthn@23
Ananthn@23Password strength is 100
PS C:\Users\ROG>  & 'c:\Users\ROG\.vscode\extensions\ms-vscode.cpptools-1
owsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-4ui2isvp.nw3' '--std
5' '--stderr=Microsoft-MIEngine-Error-w5eeruix.lvp' '--pid=Microsoft-MIEn
nGW\bin\gdb.exe' '--interpreter=mi'
Enter the password : aanahh@
aanahh@Password strength is 40
PS C:\Users\ROG> 
```