

Course Title:	Programming Fundamentals Lab (CL1002)
Assignment Title:	Lab Class Task 04 (If/else Conditions and Switch)
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LAB EXERCISES [6 Marks]

Scenario: A company's secure server is experiencing suspicious login activity. The system needs to:

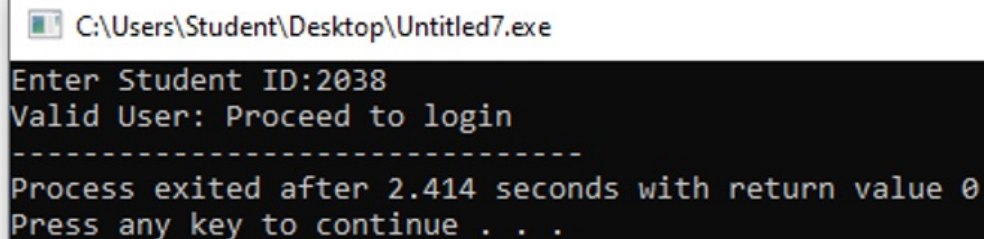
- Check if the entered user ID matches a registered one.
- Verify if the number of failed login attempts crosses a threshold.
- Categorize the severity of the incident (low, medium, high, critical).

This scenario simulates how a Security Operations Center (SOC) handles possible cyber intrusion attempts.

1. Write a C program that asks the student to enter their last 4 digits of **student ID**. If the entered student ID matches the registered one (i.e. 2050) then print **"Valid User: Proceed to login"**. Otherwise print **"Unknown User: Access Denied"**.
2. Write a C program to ask user to provide number of failed login attempts and check.
 - If attempts = **0** → print **"No suspicious activity"**
 - If attempts between **1 and 3** → print **"Warning: User may have forgotten password"**
 - If attempts between **4 and 6** → print **"Alert: Possible unauthorized access attempt"**
 - Else (>6) → print **"Critical: Account Locked due to brute-force attempt"**
3. Write a C program to classify the incident severity based on a severity code (1-4) entered by the security analyst.
 - **1** → **Low (Unusual login time)**
 - **2** → **Medium (Suspicious failed attempts)**
 - **3** → **High (Multiple accounts targeted)**
 - **4** → **Critical (Brute-force/DDoS attack detected)**
 - Default → **"Invalid Code: Enter a number between 1 and 4"**

Question 1

```
1  #include <stdio.h>
2  int main(){
3  int ID=2038;
4  int enteredID;
5  printf("Enter Student ID:");
6  scanf("%d" , &enteredID);
7  if(enteredID==ID){
8      printf("Valid User: Proceed to login");
9  }
10 else{
11     printf("Unknown User: Access Denied");
12 }
13 return 0;
14 }
15
16
```



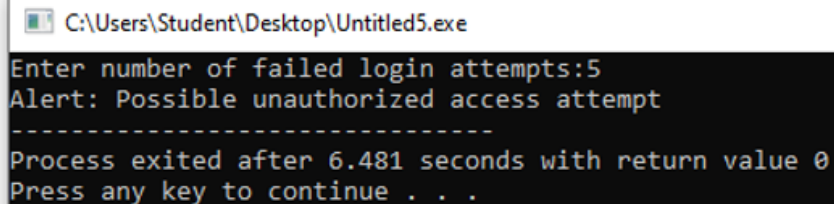
C:\Users\Student\Desktop\Untitled7.exe

Enter Student ID:2038
Valid User: Proceed to login

Process exited after 2.414 seconds with return value 0
Press any key to continue . . .

Question 2

```
1  #include <stdio.h>
2  int main(){
3      int attempts;
4      printf("Enter number of failed login attempts:");
5      scanf("%d" , &attempts);
6      if(attempts==0){
7          printf("No suspicious activity.");
8      }
9      else if(attempts>=1 && attempts<=3){
10         printf("Warning: User may have forgotten password");
11     }
12     else if(attempts>=4 && attempts<=6){
13         printf("Alert: Possible unauthorized access attempt");
14     }
15     else if(attempts>6){
16         printf("Critical: Account Locked due to brute-force attempt");
17     }
18     return 0;
19 }
20
21
```



C:\Users\Student\Desktop\Untitled5.exe

Enter number of failed login attempts:5
Alert: Possible unauthorized access attempt

Process exited after 6.481 seconds with return value 0
Press any key to continue . . .

Question 3

```
1 #include<stdio.h>
2 int main(){
3     int security_code;
4     printf("Enter severity code (1-4):");
5     scanf("%d" , &security_code);
6     switch (security_code){
7         case 1:
8             printf(" Low (Unusual login time) \n");
9             break;
10        case 2:
11            printf("Medium (Suspicious failed attempts) \n");
12            break;
13        case 3:
14            printf("High (Multiple accounts targeted) \n");
15            break;
16        case 4:
17            printf("Critical (Brute-force/DDoS attack detected) \n");
18            break;
19        default:
20            printf("Invalid Code: Enter a number between 1 and 4.");
21    }
22    return 0;
23 }
```

C:\Users\Student\Desktop\Untitled6.exe

Enter severity code (1-4):3
High (Multiple accounts targeted)

Process exited after 3.22 seconds with return value 0
Press any key to continue . . .