

<b>Course Title:</b>	Programming Fundamentals Lab (CL1002)
<b>Assignment Title:</b>	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:

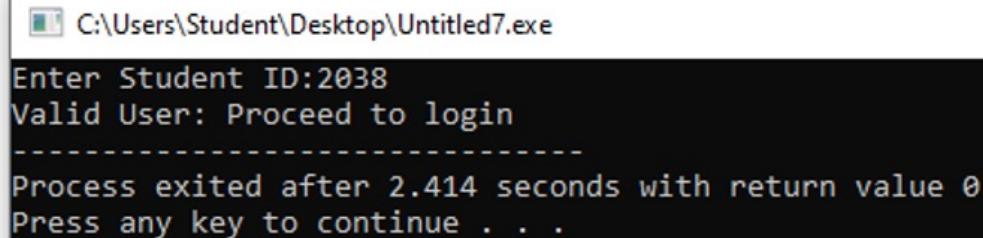
- Check if the entered user ID matches a registered one.
- Verify if the number of failed login attempts crosses a threshold.
- Categorize the severity of the incident (low, medium, high, critical).

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

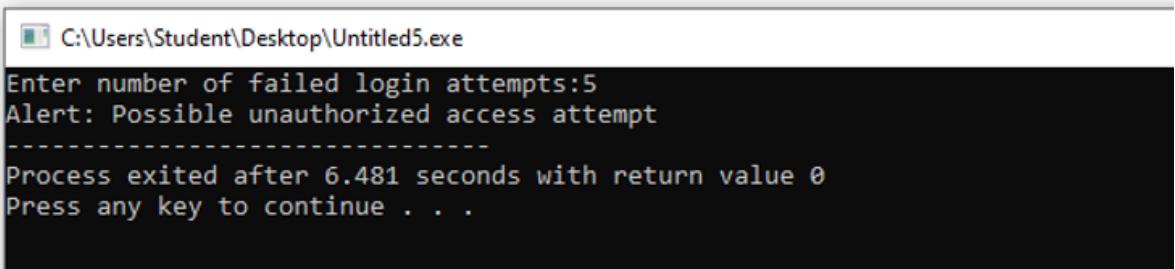
```
1 #include <stdio.h>
2 int main(){
3     int ID=2038;
4     int enteredID;
5     printf("Enter Student ID:");
6     scanf("%d" , &enteredID);
7     if(enteredID==ID){
8         printf("Valid User: Proceed to login");
9     }
10    else{
11        printf("Unknown User: Access Denied");
12    }
13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



```
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
```



The terminal window shows the following output:

```
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)

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Process exited after 3.22 seconds with return value 0

Press any key to continue . . .