PYTHON TUTORIAL FOR BEGINNERS

Source: www.youtube.com/@RishabhMishraOfficial

Assignment - 03

3 Question on If-else Conditional Statement

- Q1: Leap year
- Q2: Login Authentication
- Q3: Admission Eligibility

Q1: Leap Year

Write a simple program to determine if a given year is a leap year using user input.

Note:

- Leap year occurs once every four years.
- A year is a leap year if it is divisible by 4, but not if it is divisible by 100 unless it is also divisible by 400.

Every year that is exactly divisible by 4 is a leap year, except for years that are exactly divisible by 100, but these centurial years are leap years if they are exactly divisible by 400. For eg, the years 1700, 1800, & 1900 are not leap years, but the years 1600 and 2000 are.

Sol 1:

```
# User input
year = int(input("Enter a year (e.g. 2024): "))
# Check if the year is a leap year
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print(f"{year} is a leap year.")
else:
    print(f"{year} is not a leap year.")
```

Q2: Login Authentication

Login Authentication using conditional statement. Assume you have a predefined username and password.

Write a program that prompts the user to enter a username and password and checks whether they match. Provide appropriate messages for the following cases:

- Both username and password are correct.
- Username is correct but password is incorrect.
- Username is incorrect.

Sol 2:

```
# Predefined username and password
predefined_username = "madhav"
predefined_password = "pass101"
# Prompt the user for username and password
input_username = input("Enter username: ")
input_password = input("Enter password: ")
# Check the username and password
if input_username == predefined_username:
    if input_password == predefined_password:
        print("Welcome! Login was successful.")
    else:
        print("Login failed: Incorrect password.")
else:
    print("Login failed: Incorrect username.")
```

Q3: Admission Eligibility

A university has the following eligibility criteria for admission:

- Marks in Mathematics >= 65
- Marks in Physics >= 55
- Marks in Chemistry >= 50
- Total marks in all three subjects >= 180 OR Total marks in Mathematics and Physics >= 140

Write a program that takes marks in three subjects as input and prints whether the student is eligible for admission.

Sol 3:

```
# Input marks from the user
print("Enter below PCM marks out of 100")
physics_marks = int(input("Physics: "))
chemistry_marks = int(input("Chemistry: "))
math_marks = int(input("Maths: "))
# Check the eligibility criteria
if (math_marks >= 65 and
    physics_marks >= 55 and
    chemistry_marks >= 50 and
    (math_marks + physics_marks + chemistry_marks) >= 180) or
\
    (math_marks + physics_marks) >= 140:
    print("Eligible for admission!")
else:
    print("Not eligible for admission")
```

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