Day 6: For Loop

Assignment Questions:

1. Print the first 10 natural numbers using for loop

2. Python program to check if the given string is a palindrome

3. Python program to check if a given number is an Armstrong number

4. Python program to get the Fibonacci series between 0 to 50

5. Python program to check the validity of password input by users

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# 1. Print natural numbers
print("Natural numbers from 1 to 10 are:")
for i in range(1, 11):  # Use range(1, 11) for clarity
    print(i)

# 2. Check if a number is a palindrome
def is_palindrome(num):
    original_num = num
    reversed_num = 0

    while num > 0:
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        digit = num % 10
        reversed_num = reversed_num * 10 + digit
        num = num // 10

    if original_num == reversed_num:
        print("Given number is a palindrome")
    else:
        print("Given number is not a palindrome")

num = int(input("\nEnter any number to check if it's a
palindrome: "))
is_palindrome(num)

# 3. Check if a number is an Armstrong number
num = int(input("\nEnter a number to check if it's an
Armstrong number: "))

# Initialize sum
sum = 0

# Find the sum of the cube of each digit using a for loop
for digit in str(num):  # Convert the number to a string
to iterate over digits
    sum += int(digit) ** 3  # Cube the digit and add to
sum

# Display the result
if num == sum:
    print(num, "is an Armstrong number")
else:
    print(num, "is not an Armstrong number")

# 4. Get the Fibonacci series between 0 to 50
def print_fibonacci():
    a, b = 0, 1  # Initialize the first two Fibonacci
numbers
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    print("\nFibonacci series between 0 and 50:")
    for _ in range(50):  # Use a range to control the
loop
        if a > 50:  # Stop if the current Fibonacci
number exceeds 50
            break
        print(a, end=" ")
        a, b = b, a + b
    print()  # For a new line after the Fibonacci series

print_fibonacci()

# 5. Check the validity of a password
password = input("\nEnter your password: ")

# Initialize validation criteria
has_upper = False
has_lower = False
has_digit = False
has_special = False

special_characters = "!@#$%^&*()-+"

# Check each character in the password
for char in password:
    if char.isupper():
        has_upper = True
    elif char.islower():
        has_lower = True
    elif char.isdigit():
        has_digit = True
    elif char in special_characters:
        has_special = True

# Validate the password
if len(password) >= 8 and has_upper and has_lower and
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has_digit and has_special:
    print("Password is valid.")
else:
    print("Password is invalid. Make sure it meets all
the criteria.")
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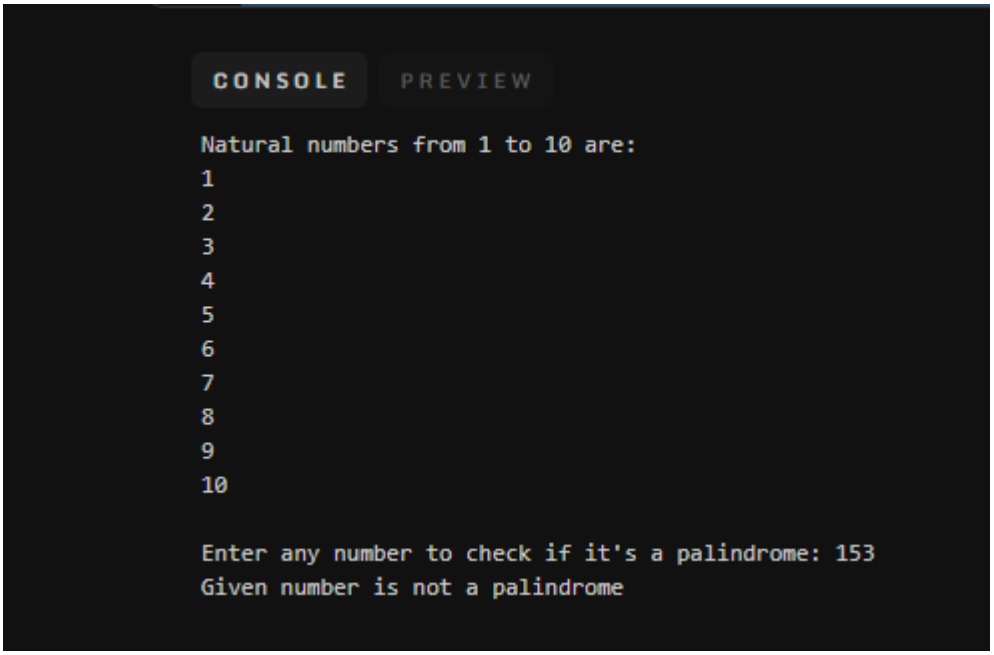
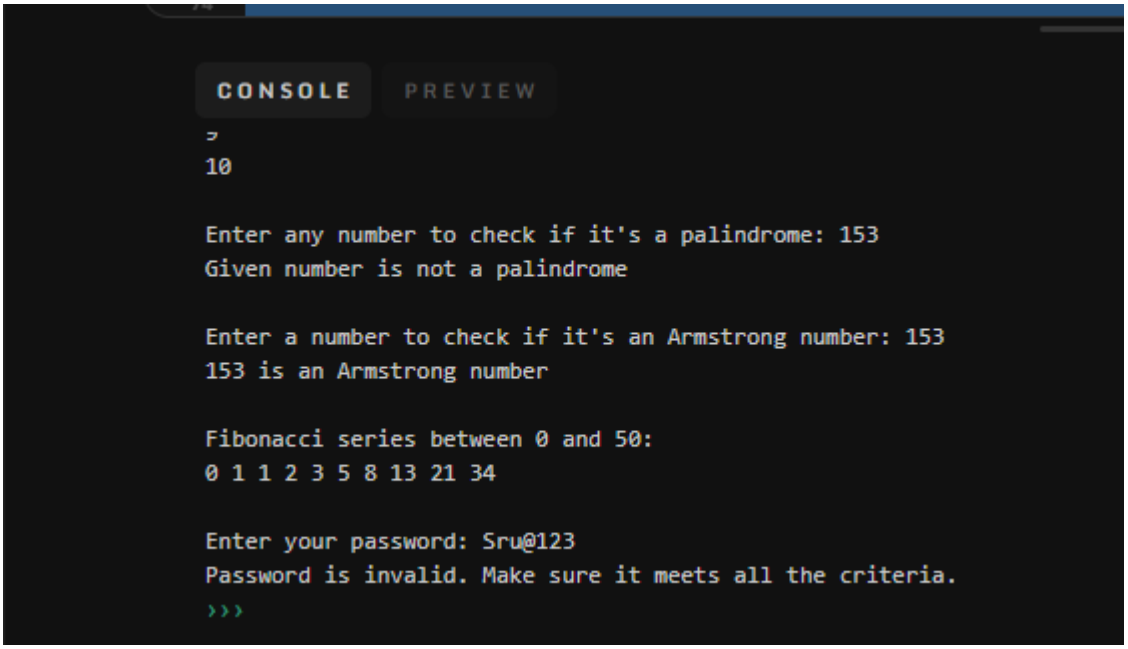
Output:




CONSOLE
PREVIEW
10
Enter any number to check if it's a palindrome: 153
Given number is not a palindrome
Enter a number to check if it's an Armstrong number: 153
153 is an Armstrong number
Fibonacci series between 0 and 50:
0 1 1 2 3 5 8 13 21 34
Enter your password: Sru@123
Password is invalid. Make sure it meets all the criteria.