PYTHON PROGRAMMING

LAB-7 Answers

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1 . Print the first 10 natural numbers using for loop.

Code:

print("The first 10 natural numbers are:")# Print the first 10 natural numbers using a for loop.

for i in range(1, 11):

    print(i, end=" ")  # Print each number separated by a space.

Output:

The first 10 natural numbers are:

1 2 3 4 5 6 7 8 9 10

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

Code:

tring = input("Enter a string: ")# Input a string from the user.

string = string.lower().replace(" ", "") # Convert the string to lowercase and remove spaces.

if string == string[::-1]: # Check if the string is a palindrome or not.

    print("The given string is a palindrome.") #primnt if the string is polindrome.

else:

    print("The given string is not a palindrome.") #primnt if the string is not a polindrome.

Output:

Enter a string: Hareesh

The given string is not a palindrome.

Enter a string: abccba

The given string is a palindrome.

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

Code:

num = int(input("Enter a number: "))# Input a number(num) from the user.

num\_str = str(num)# Count the number of digits in the number.

num\_digits = len(num\_str)

sum = 0 # Initialize sum to store the result.

temp = num # Calculate the sum of the digits raised to the power of the number of digits.

while temp > 0:

    digit = temp % 10

    sum += digit \*\* num\_digits

    temp //= 10

# Check if the number is an Armstrong number

if num == sum:

    print(num, "is an Armstrong number.") #print if the num is Armstrong number.

else:

    print(num, "is not an Armstrong number.")#print if the num is not a Armstrong number.

Outputs:

Enter a number: 56

56 is not an Armstrong number.

Enter a number: 370

370 is an Armstrong number.

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

Code:

Fibo = [0, 1] # Initializing the first two Fibonacci numbers.

# Generate Fibonacci numbers using a for loop from 0 to 50.

for i in range(2, 50):

Fib = Fibo[i - 1] + Fibo[i - 2] #Formula to find Fibonacci series.

if Fib > 50:

break

Fibo.append(fib)

print("Fibonacci series between 0 and 50:")

print(Fibo) # displaying the Fibonacci series.

Output:

Fibonacci series between 0 to 50:

0 1 1 2 3 5 8 13 21 34

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

Code:

password = input("Enter your password: ")# Get password input from the user.

is\_valid = True # Initialize validity flag.

if len(password) < 8:# Check password length.

    print("Password must be at least 8 characters long.")

    is\_valid = False

if not any(char.isupper() for char in password):# Check for uppercase letter.

    print("Password must contain at least one uppercase letter.")

    is\_valid = False

if not any(char.islower() for char in password):# Check for lowercase letter.

    print("Password must contain at least one lowercase letter.")

    is\_valid = False

if not any(char.isdigit() for char in password):# Check for digit.

    print("Password must contain at least one digit.")

    is\_valid = False

special\_characters = "!@#$%^&\*()"# Check for special character.

if not any(char in special\_characters for char in password):

    print("Password must contain at least one special character: !@#$%^&\*()")

    is\_valid = False

if is\_valid:# Check if password meets all criteria

    print("Password is valid.") #print if the password is valid form.

else:

    print("Password is not valid.")#print if the password is not a valid form.

Outputs:

Enter your password: hareesha123

Password must contain at least one uppercase letter.

Password must contain at least one special character: !@#$%^&\*()

Password is not valid.

Enter your password: Hareesh@123

Password is valid.