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.