Assignment-2

1 Reverse a Number: Write a program that takes an integer as input and outputs the reverse of that number.

```
n = int(input("Enter the number: "))
rev_num = 0
while n!=0:
    rem = n%10
    rev_num = rev_num*10+rem
    n = n//10
print(rev_num)
```

```
"D:\BEBO TECHNOLOGY\PYTHON\.venv\Scripts\pytho
Enter the number: 234
432

Process finished with exit code 0
```

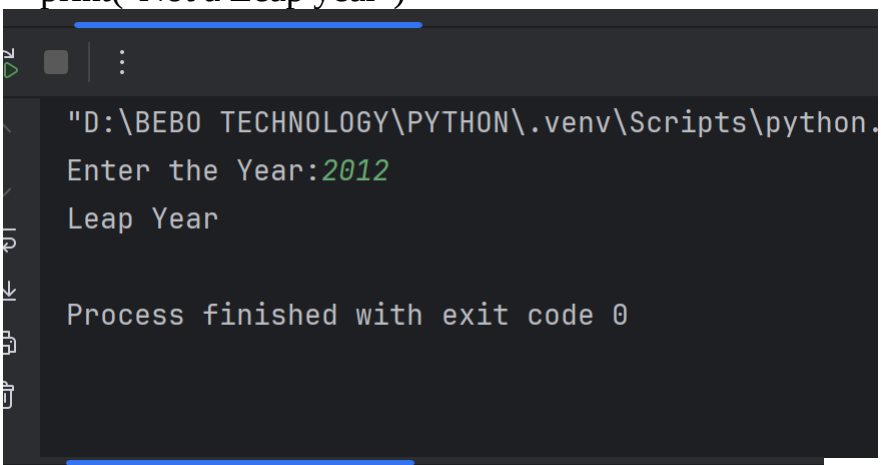
2 Find Factorial: Create a function that accepts a positive integer n and calculates the factorial of n using a loop.

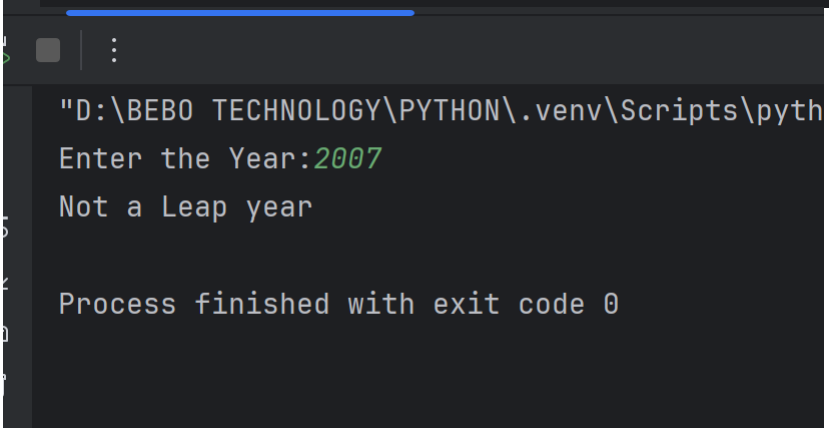
```
n = int(input("Enter the number: "))
fact = 1
for i in range(1,n+1):
    fact*=i
print(fact)
```

```
"D:\BEBO TECHNOLOGY\PYTHON\.venv\Scripts\python.
Enter the number: 5
120

Process finished with exit code 0
```

3 Leap Year Checker: Create a function that takes a year as input and determines if it's a leap year. A year is a leap year if:

```
year = int(input("Enter the Year:"))

if(year%400==0):
    print("Leap Year")
elif(year%100==0):
    print("Not a Leap Year")
elif(year%4==0):
    print("Leap Year")
else:
    print("Not a Leap year")
```

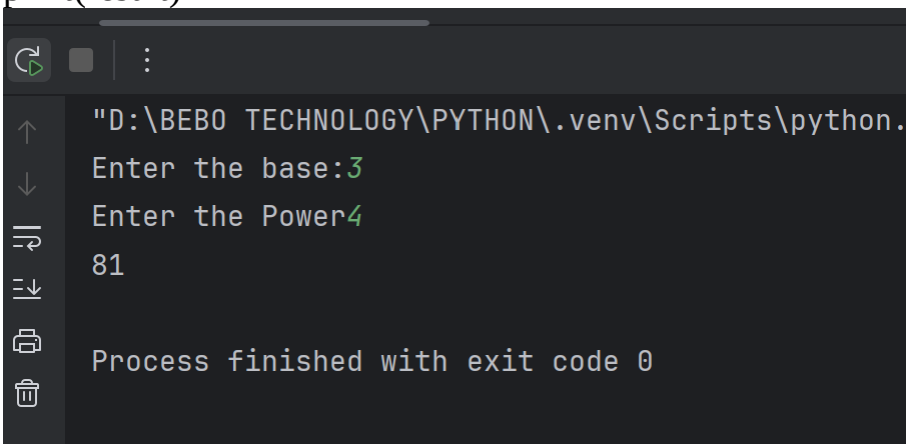




4 Calculate Power: Write a function that takes two integers, base and exponent, and calculates the power of base raised to exponent using a loop. Do not use Pythonâ€™s built-in power function.

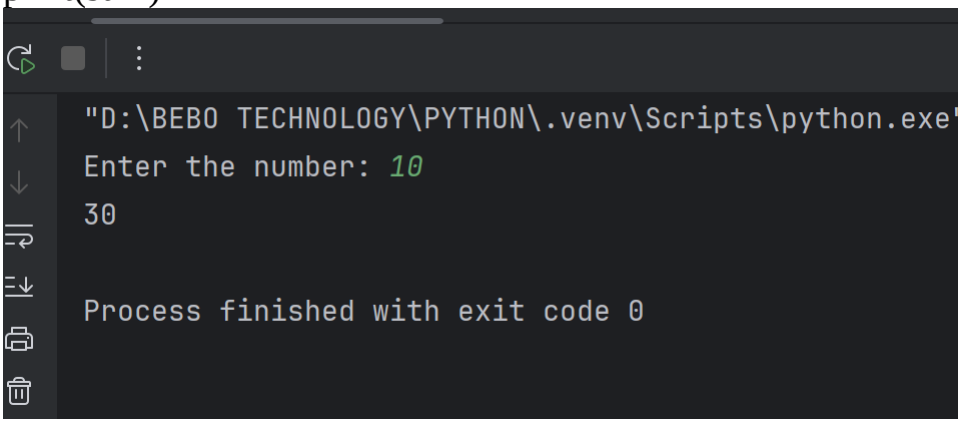
```
base = int(input("Enter the base:"))
power = int(input("Enter the Power"))

result = 1
```

```
for i in range(power):
    result*=base
print(result)
```



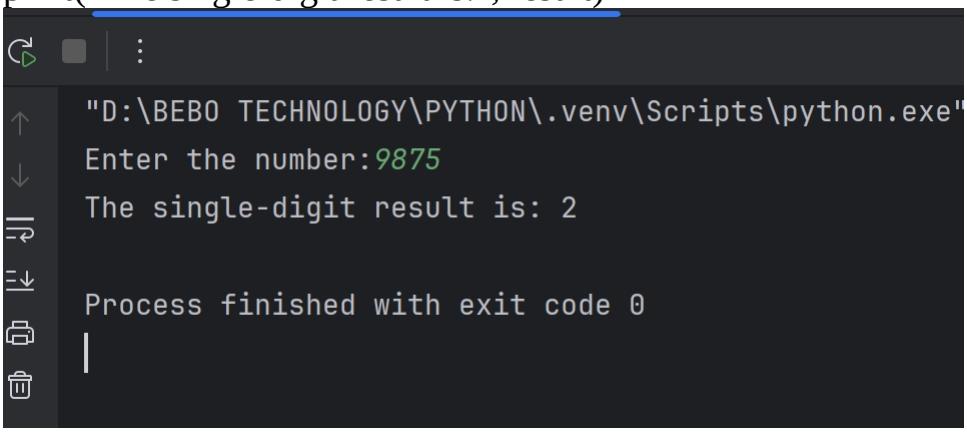
5 Sum of Even Numbers: Create a program that accepts a positive integer n and calculates the sum of all even numbers from 1 to n. For example, if n is 10, the output should be 30 (2 + 4 + 6 + 8 + 10).

```
n = int(input("Enter the number: "))
sum = 0
for i in range(1,n+1):
    if(i%2==0):
        sum+=i
print(sum)
```



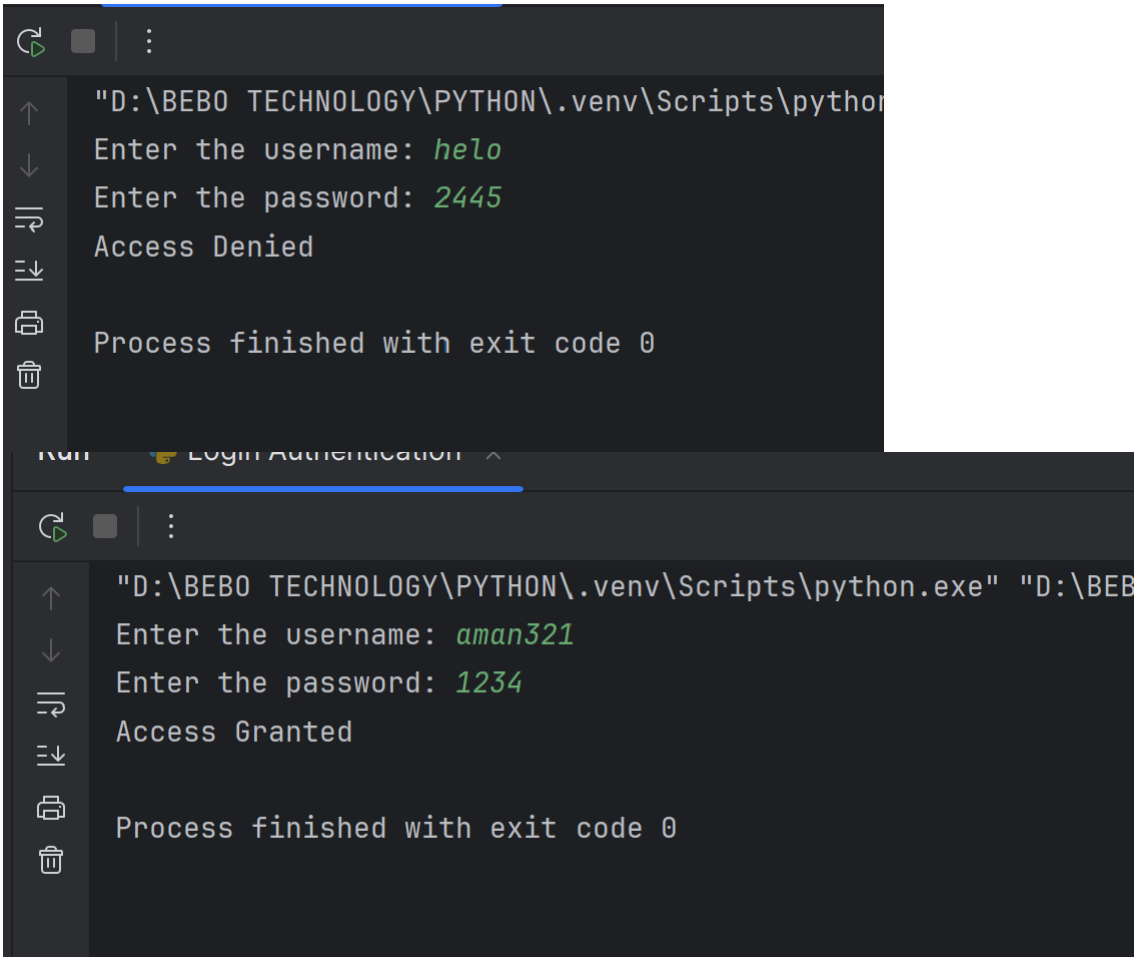
6 Sum of Digits Until Single Digit: Create a function that takes an integer as input and repeatedly finds the sum of its digits until a single-digit number is obtained. For example, if the input is 9875, the output should be 2 (9+8+7+5=29 -> 2+9=11 -> 1+1=2).

```
def sum_of_digit(n):
    while n >= 10:
        sum_digits = 0
        while n > 0:
            rem = n % 10
            sum_digits += rem
            n //= 10
        n = sum_digits

    return n

# Get input from the user
n = int(input("Enter the number:"))
result = sum_of_digit(n)

print("The single-digit result is:", result)
```



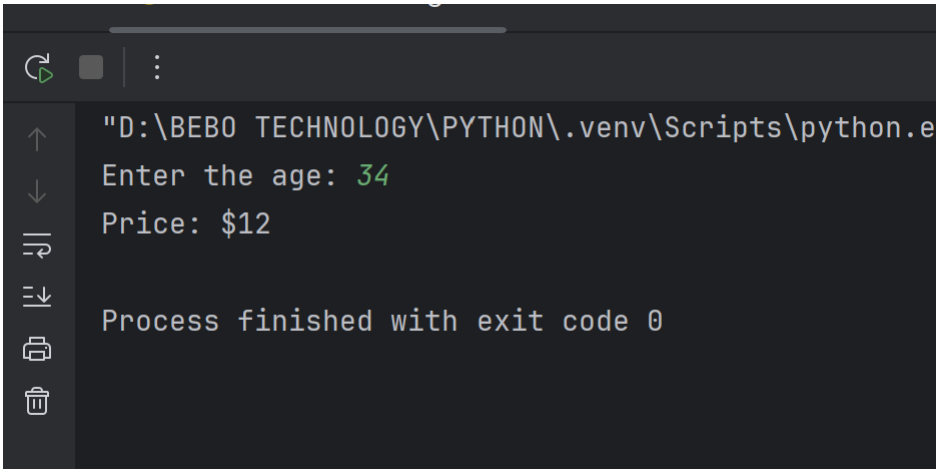
7 Login Authentication: Write a program that accepts a username and password from the user and checks if they match the pre-set username and password. If both match, print "Access Granted"; otherwise, print "Access Denied."

```
_username = "aman321"
_password = "1234"

username = input("Enter the username: ")
password = input("Enter the password: ")

if(username == _username and password == _password):
    print("Access Granted")
else:
    print("Access Denied")
```



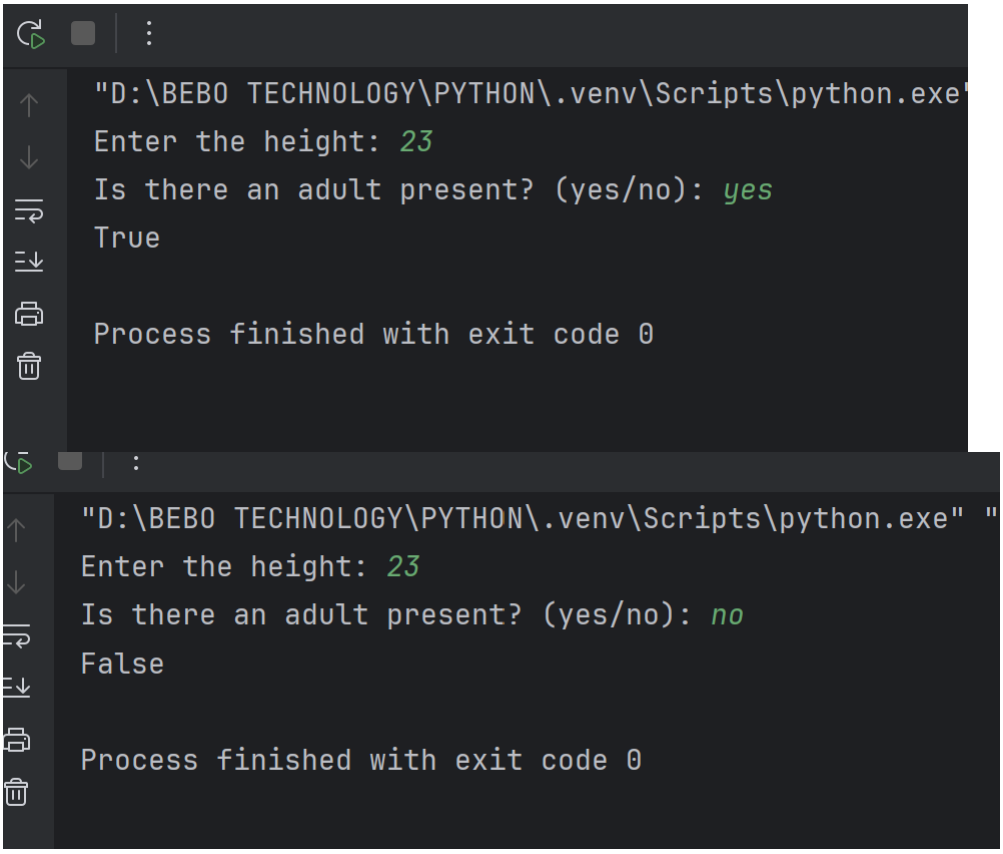
8 Movie Ticket Pricing: Write a function that determines the ticket price based on the age of a person. If the person is under 12 years old, the price is $5. If the person is between 12 and 64, the price is $12. If the person is 65 or older, the price is $7. Return the ticket price as an integer.

```
def movie_ticket_pricing(age):
    if age < 12:
        return 5
    elif 12 <= age <= 64:
        return 12
    else:
        return 7

age = int(input("Enter the age: "))
result = movie_ticket_pricing(age)
print(f"Price: ${result}")
```



9 Ride Height Requirement: Youâ€™re managing a theme park ride. To go on the ride, a person must be at least 48 inches tall. However, if theyâ€™re between 42 and 47 inches, they can ride if accompanied by an adult. If they are under 42 inches, they cannot ride at all. Write a function that takes in the height and a boolean for whether an adult is present, and returns True if they can ride, False otherwise.

```
def can_ride(height, has_adult):
    if height>=48:
        return True
    elif 42<=height<48 and has_adult:
        return True
    else:
        return False

height = int(input("Enter the height: "))
has_adult = input("Is there an adult present? (yes/no): ").lower()=="yes"
result = can_ride(height,has_adult)

print(result)
```



Q.10 Festival Ticket: A festival has different ticket prices based on age and time of day. If the person is 18 or younger, the ticket costs $10. If theyâ€™re between 19 and 59, itâ€™s $20. For those aged 60 and above, itâ€™s $15. However, after 8 pm, all tickets are discounted by 50%. Write a function that takes in age and time (in 24-hour format) and returns the ticket price after any applicable discounts.

```
def festival_ticket_price(age, time):

    if age <= 18:
        price = 10
    elif 19 <= age <= 59:
        price = 20
    else:
        price = 15


    if time >= 20:
        price /= 2

    return price
```

```
age = int(input("Enter your age: "))
time = int(input("Enter the time (24-hour format): "))

ticket_price = festival_ticket_price(age, time)

print(f"Ticket price: ${ticket_price:.2f}")
```