Week 4.Homework 2. Conditional Ststaments & Loops

Question 1: Write a program to check if a given number is positive.

```
def check_positive(number):
    if number > 0:
        return True
    else:
        return False
num = float(input("Enter a number: "))
if check_positive(num):
    print("The number is positive.")
else:
    print("The number is not positive.")
```

```
    Enter a number: 5
    The number is positive.
```

Question 2: Write a program to check if a given number is zero.

```
def check_zero(number):
    if number == 0:
        return True
    else:
        return False
num = float(input("Enter a number: "))
if check_zero(num):
    print("The number is zero.")
else:
    print("The number is not zero.")
```

```
    Enter a number: 6
    The number is not zero.
```

Question 3: Write a program to check if a number is even or odd.

```
def check_even_odd(number):
    if number % 2 == 0:
        return "even"
    else:
        return "odd"
num = int(input("Enter a number: "))
result = check_even_odd(num)
print("The number is", result + ".")
```

```
    Enter a number: 7
    The number is odd.
```

Question 4: Write a program to categorize a person's age: Child (< 13), Teen (13-19), Adult (>= 20).

```
def categorize_age(age):
    if age < 13:
        return "Child"
    elif 13 <= age <= 19:
        return "Teen"
    else:
        return "Adult"
age = int(input("Enter your age: "))
category = categorize_age(age)
print("You are categorized as a", category + ".")
```

```
    Enter your age: 20
    You are categorized as a Adult.
```

Question 5: Write a program to find the largest among three numbers.

```
num=int(input("Enter a number "))
num2=int(input("Enter another number "))
num3=int(input("Enter a last number "))
if num>num2 and num>num3:
    print("Your first number was the largest")
elif num2>num and num2>num3:
    print("Your second number was the largest")
else:
    print("Your third number was the largest")
```

```
        Enter a number 5
        Enter another number 0
        Enter a last number 4
        Your first number was the largest
```

Question 6: Write a program to check if a year is a leap year.

```
year=int(input("Enter the year to check if it is a leap year?:"))

if year%4==0:
  print("This year is a leap year!")
else:
  print("This year is not a leap year.")
```

```
        Enter the year to check if it is a leap year?:2024
        This year is a leap year!
```

Question 7: Write a for loop that prints numbers from 1 to 10. Answer:

```
for num in range(1, 11):
    print(num)
```

```
    1
    2
    3
    4
```

```
5
6
7
8
9
10
```

Question 8: Use a for loop to print all even numbers between 1 and 20. Answer:

```
for num in range(2, 21, 2):
    print(num)
```

```
2
4
6
8
10
12
14
16
18
20
```

Question 9: Write a for loop that counts down from 10 to 1.

```
for num in range(10, 0, -1):
    print(num)
```

```
10
9
8
7
6
5
4
3
2
1
```

Question 10: Write a while loop that prints "Hello" 5 times.

```
count = 0
while count < 5:
    print("Hello")
    count += 1
```

Question 11: Use a while loop to continuously ask the user for input until they enter 'quit'.

```
while True:
    user_input = input("Enter something (type 'quit' to exit): ")
    if user_input.lower() == 'quit':
        break
```

```
    Enter something (type 'quit' to exit): QUIT
```

Question 12: Write a program that uses a while loop to sum numbers entered by the user until the user enters 0. Print the total sum after the loop ends.

```
total_sum = 0

while True:
    num = float(input("Enter a number (enter 0 to stop): "))
    if num == 0:
        break
    total_sum += num

print("Total sum:", total_sum)
```