1. Write a pseudocode to display the smallest input between two numbers.

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| --- | --- | --- |
| input | process | Output |
| Get two inputs | Compare two input number and identify the smallest number | Display the smallest number |
| Get Num1, Num 2 | Num1 > Num2 | Display num2 |
|  | Num2 > Num1 | Display num1 |

Start/Begin

Get num1, num2

Prompt “Please enter the first number”, num1

Prompt “Please enter the second number”, num2

Read num1, num2

If num1 > num2 then

Display num2

Else

Display num1

End if

End

num1 = float(input("Please enter the first number:"))

num2 = float(input("Please enter the second number:"))

if num1 > num2:

    print("The smallest number is",num2)

elif num1 < num2:

    print("The smallest number is", num1)

else:

    print("The number is equal")

1. Number given by user is even or odd

|  |  |  |
| --- | --- | --- |
| Input | process | Output |
| Get two number |  |  |
| Get one number from user, num1 | If the number divisible with 2 without remainder | Display odd |
|  | If the number divisible with 2 with remainder | Display even |
| Num1 = 5 | 5/2 = 2.5 | Display odd |
| Num2 = 4 | 4/2 = 2 | Display even |

Start

Declare num1

Prompt num1

Read num1

If num1/2 = remainder then

Display “odd”

Else

Display “even”

num1 = int(input("Enter a number: "))

if num1 % 2 == 0:

    print(f"{num1} is an even number.")

else:

    print(f"{num1} is an odd number.")

1. Determine the type of triangle

Input: Get three numbers representing the lengths of the three sides of a triangle.

Processing: Determine the type of the triangle based on the lengths of the three sides: equilateral, isosceles, or unequal.

Output: Display the type of the triangle.

If three sides are equal, output “equilateral triangle”.

If two sides are equal, output “isosceles triangle”

If all three sides are unequal, output “unequal triangle”

num1 = float(input("Please enter the first number:"))

num2 = float(input("Please enter the second numebr:"))

num3 = float(input("Please enter the third number:"))

if num1 == num2 == num3:

    print("This is equilateral triangle")

elif num1 == num2 or num1 == num3 or num2 == num3:

    print("This is isosceles triangle")

else:

    print("This is scalene triangle")

1. Determine if a year is a leap year

Input: Get a year.

Processing: Determine if the year is a leap year. The condition for leap year is that the year is divisible by 4 and not divisible by 100, or divisible by 400.

Output: Displays whether the year is a leap year.

If it is a leap year, output “Leap Year”

If it is not a leap year, output “Flat year”

year = int(input("Please enter the year:"))

if (year % 4 == 0 and year % 100 != 0 or year % 400 == 0):

    print(f"{year} is lunar calendar")

else:

    print(f"{year} is not lunar calendar")

1. Grade Leveling

Input: Get a score between 0 and 100.

Processing: Divide the grade according to the score.

Output: Display the corresponding grade.

If the score is above 90, output “Excellent”.

80-89 points, output “good”.

70-79 points, output “Medium”.

60-69 points, output “Pass”

Below 60 points, output “Fail”

score = int(input("Please enter your score (0-100): "))

if score < 0 or score > 100:

    print("Invalid score! Please enter a score between 0 and 100.")

else:

    if score >= 90:

        print("Excellent")

    elif score >= 80:

        print("Good")

    elif score >= 70:

        print("Moderate")

    elif score >= 60:

        print("Pass")

    else:

        print("Fail")

Simple Calculator

Input: Get two numbers and an operator (+, -, \*, /).

Processing: Performs the corresponding operations on the two numbers according to the operators.

Output: Display the result of the operation.

If the operator is +, output the sum of the two numbers.

If the operator is -, output the difference between the two numbers.

If the operator is \*, output the product of the two numbers.

If the operator is /, the quotient of the two numbers is output (note that the divisor cannot be zero).

num1 = float(input("Please enter the first number:"))

num2 = float(input("Please enter the second number:"))

operator = input("Please enter the operator")

if operator == '+':

    print(f"{num1} + {num2} = {num1 + num2}")

elif operator == '-':

    print(f"{num1} - {num2} = {num1 - num2}")

elif operator == '\*':

    print(f"{num1} \* {num2} = {num1 \* num2}")

elif operator == '/':

    if num2 != 0:

        print(f"{num1} / {num2} = {num1 / num2}")

    else:

        print("The divisor cannot be zero!")

else:

    print("Please enter the valid operator")

Determine the number positive or negative

Input: Get a number.

Processing: Determine whether the number is positive, negative or zero.

Output: Display the result.

If the number is positive, output “Positive”.

If it is negative, output “Negative”.

If it is zero, output “zero”.

number = float(input("Please enter the number: "))

if number < 0:

    print("The number is negative")

elif number == 0:

    print("The number is zero")

else:

    print("The number is positive")

Number Reversal

Input: Get a positive integer.

Processing: Inverts the integer.

Output: Displays the inverted number.

Example: Input 12345, output 54321

number = int(input("Please enter a positive integer: "))

reversed\_number = int(str(number)[::-1])

print(f"The reversed number is: {reversed\_number}")

Calculate the factorial of a number

Input: Get a positive integer.

Processing: Calculate the factorial of the number.

Output: Display the factorial result.

Example: Input 5, output 120 (5! = 5 \* 4 \* 3 \* 2 \* 1)

n = int(input("Please enter the positive integer: "))

factorial = 1

for i in range(1, n + 1):

    factorial \*= i

print(f"The factorial of{n} is {factorial}")

List all primes in a range

Input: Get two positive integers representing the start and end of the range.

Processing: List all primes in the range. A prime number is a number that is only divisible by 1 and itself.

Output: Displays a list of primes in the range.

start = int(input("Please enter the range of value for start: "))

end = int(input("Please enter the range of value for end: "))

def is\_prime(num):

    if num < 2:

        return False

    for i in range(2, int(num \*\* 0.5) + 1):

        if num % i == 0:

            return False

    return True

print(f"The prime number between {start} to {end} have: ")

for number in range(start, end + 1):

    if is\_prime(number):

        print(number, end=' ')

Fibonacci series generation

Input: Get a positive integer n. Processing: Generate and display the first n numbers of the Fibonacci series.

Processing: Generate and display the first n numbers of the Fibonacci series, which is defined as the first two numbers 0 and 1, followed by the sum of the first two numbers.

Output: Displays the first n numbers of the Fibonacci series.

n = int(input("Please enter the positive integer, n: "))

a, b = 0, 1

print("The first number in the Fibonacci series", n, "is:")

for \_ in range(n):

    print(a, end=' ')

    a, b = b, a + b

Daffodil Count Determination

Input: Get a three-digit number.

Processing: Determine if the three-digit number is a daffodil number. A daffodil number is a number whose cubic sum of the digits is equal to the number itself, e.g. 153 = 1^3 + 5^3 + 3^3.

OUTPUT: Displays whether the number is a daffodil number.

number = int(input("Please enter a three-digit number: "))

hundreds = number // 100

tens = (number // 10) % 10

units = number % 10

narcissistic\_sum = hundreds\*\*3 + tens\*\*3 + units\*\*3

if narcissistic\_sum == number:

    print(f"{number} is a daffodil count")

else:

    print(f"{number} is not a daffodil count.")