1. **Check if a number is positive or negative**

python

CopyEdit

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

if num > 0:

print("Positive")

elif num < 0:

print("Negative")

else:

print("Zero")

1. **Check if a number is even or odd**

python

CopyEdit

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

if num % 2 == 0:

print("Even")

else:

print("Odd")

1. **Check if a number is divisible by 5 and 11**

python

CopyEdit

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

if num % 5 == 0 and num % 11 == 0:

print("Divisible by 5 and 11")

else:

print("Not divisible by 5 and 11")

1. **Check if a year is a leap year**

python

CopyEdit

year = int(input("Enter year: "))

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

print("Leap Year")

else:

print("Not a Leap Year")

1. **Check if a character is a vowel or consonant**

python

CopyEdit

ch = input("Enter a character: ").lower()

if ch in 'aeiou':

print("Vowel")

elif ch.isalpha():

print("Consonant")

else:

print("Not an alphabet")

1. **Find the maximum of two numbers**

python

CopyEdit

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

b = int(input("Enter second number: "))

if a > b:

print("Maximum:", a)

else:

print("Maximum:", b)

1. **Find the maximum of three numbers**

python

CopyEdit

a = int(input("Enter first: "))

b = int(input("Enter second: "))

c = int(input("Enter third: "))

if a >= b and a >= c:

print("Maximum:", a)

elif b >= a and b >= c:

print("Maximum:", b)

else:

print("Maximum:", c)

1. **Check if a number is prime**

python

CopyEdit

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

if num <= 1:

print("Not Prime")

else:

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

if num % i == 0:

print("Not Prime")

break

else:

print("Prime")

1. **Check if a character is uppercase or lowercase**

python

CopyEdit

ch = input("Enter a character: ")

if ch.isupper():

print("Uppercase")

elif ch.islower():

print("Lowercase")

else:

print("Not an alphabet")

1. **Check if a number is zero, positive, or negative**

python

CopyEdit

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

if num == 0:

print("Zero")

elif num > 0:

print("Positive")

else:

print("Negative")

1. **Check if a number is a palindrome**

python

CopyEdit

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

if str(num) == str(num)[::-1]:

print("Palindrome")

else:

print("Not a Palindrome")

1. **Check if a number is an Armstrong number**  
   *(Armstrong number: sum of cubes of digits equals the number – for 3-digit numbers)*

python

CopyEdit

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

digits = [int(d) for d in str(num)]

power = len(digits)

if sum(d\*\*power for d in digits) == num:

print("Armstrong Number")

else:

print("Not an Armstrong Number")

1. **Check if a number is a perfect square**

python

CopyEdit

import math

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

if int(math.sqrt(num))\*\*2 == num:

print("Perfect Square")

else:

print("Not a Perfect Square")

1. **Check if a number is a perfect number**  
   *(Perfect number: sum of proper divisors equals the number)*

python

CopyEdit

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

sum\_div = sum(i for i in range(1, num) if num % i == 0)

if sum\_div == num:

print("Perfect Number")

else:

print("Not a Perfect Number")

1. **Check if a number is divisible by 3 or 7**

python

CopyEdit

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

if num % 3 == 0 or num % 7 == 0:

print("Divisible by 3 or 7")

else:

print("Not Divisible by 3 or 7")

1. **Check if a number is within a specific range**  
   *(Let's assume the range is 10 to 100)*

python

CopyEdit

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

if 10 <= num <= 100:

print("Within range")

else:

print("Out of range")

1. **Check if the sum of digits is even or odd**

python

CopyEdit

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

digit\_sum = sum(int(d) for d in str(num))

if digit\_sum % 2 == 0:

print("Sum of digits is Even")

else:

print("Sum of digits is Odd")

1. **Compare the sum and product of digits**

python

CopyEdit

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

digits = [int(d) for d in str(num)]

sum\_digits = sum(digits)

product\_digits = 1

for d in digits:

product\_digits \*= d

if sum\_digits > product\_digits:

print("Sum is greater")

elif product\_digits > sum\_digits:

print("Product is greater")

else:

print("Sum and Product are equal")

1. **Check if a number is a multiple of 10**

python

CopyEdit

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

if num % 10 == 0:

print("Multiple of 10")

else:

print("Not a Multiple of 10")

1. **Check if a number ends with digit 5**

python

CopyEdit

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

if num % 10 == 5:

print("Ends with digit 5")

else:

print("Does not end with digit 5")

1. **Check if a character is an alphabet or not**

python

CopyEdit

ch = input("Enter a character: ")

if ('A' <= ch <= 'Z') or ('a' <= ch <= 'z'):

print("Alphabet")

else:

print("Not an Alphabet")

1. **Check if a character is a digit**

python

CopyEdit

ch = input("Enter a character: ")

if '0' <= ch <= '9':

print("Digit")

else:

print("Not a Digit")

1. **Check if a character is a special symbol**

python

CopyEdit

ch = input("Enter a character: ")

if not (('A' <= ch <= 'Z') or ('a' <= ch <= 'z') or ('0' <= ch <= '9') or ch == ' '):

print("Special Symbol")

else:

print("Not a Special Symbol")

1. **Check if a character is a lowercase vowel**

python

CopyEdit

ch = input("Enter a character: ")

if ch in ['a', 'e', 'i', 'o', 'u']:

print("Lowercase Vowel")

else:

print("Not a Lowercase Vowel")

1. **Check if a character is an uppercase consonant**

python

CopyEdit

ch = input("Enter a character: ")

if 'A' <= ch <= 'Z' and ch not in ['A', 'E', 'I', 'O', 'U']:

print("Uppercase Consonant")

else:

print("Not an Uppercase Consonant")

1. **Check if a character is a whitespace**

python

CopyEdit

ch = input("Enter a character: ")

if ch == ' ':

print("Whitespace Character")

else:

print("Not a Whitespace Character")

1. **Check if a character is in the range A–Z**

python

CopyEdit

ch = input("Enter a character: ")

if 'A' <= ch <= 'Z':

print("In range A-Z")

else:

print("Not in range A-Z")

1. **Check if two characters are equal**

python

CopyEdit

ch1 = input("Enter first character: ")

ch2 = input("Enter second character: ")

if ch1 == ch2:

print("Characters are Equal")

else:

print("Characters are Not Equal")

1. **Check if a character is between ‘a’ and ‘m’**

python

CopyEdit

ch = input("Enter a character: ")

if 'a' <= ch <= 'm':

print("Character is between 'a' and 'm'")

else:

print("Character is not between 'a' and 'm'")

1. **Check if a character is between ‘0’ and ‘5’**

python

CopyEdit

ch = input("Enter a character: ")

if '0' <= ch <= '5':

print("Character is between '0' and '5'")

else:

print("Character is not between '0' and '5'")

1. **Check if a person is eligible to vote** (Age ≥ 18)

python

CopyEdit

age = int(input("Enter age: "))

if age >= 18:

print("Eligible to vote")

else:

print("Not eligible to vote")

1. **Assign grade based on marks**

python

CopyEdit

marks = int(input("Enter marks (0-100): "))

if marks >= 90:

print("Grade: A")

elif marks >= 80:

print("Grade: B")

elif marks >= 70:

print("Grade: C")

elif marks >= 60:

print("Grade: D")

elif marks >= 40:

print("Grade: E")

else:

print("Grade: F (Fail)")

1. **Check if a year is a century year** (Divisible by 100)

python

CopyEdit

year = int(input("Enter a year: "))

if year % 100 == 0:

print("Century Year")

else:

print("Not a Century Year")

1. **Determine tax based on income**

python

CopyEdit

income = float(input("Enter income: "))

if income <= 250000:

print("No Tax")

elif income <= 500000:

print("Tax: 5%")

elif income <= 1000000:

print("Tax: 20%")

else:

print("Tax: 30%")

1. **Check eligibility for admission based on marks**

python

CopyEdit

math = int(input("Enter Math marks: "))

physics = int(input("Enter Physics marks: "))

chemistry = int(input("Enter Chemistry marks: "))

total = math + physics + chemistry

mp\_total = math + physics

if math >= 60 and physics >= 50 and chemistry >= 40:

if total >= 200 or mp\_total >= 150:

print("Eligible for Admission")

else:

print("Not Eligible")

else:

print("Not Eligible")

1. **Check eligibility for loan based on salary and age**

python

CopyEdit

salary = int(input("Enter monthly salary: "))

age = int(input("Enter age: "))

if age >= 21 and age <= 60:

if salary >= 25000:

print("Eligible for Loan")

else:

print("Not Eligible due to low salary")

else:

print("Not Eligible due to age")

1. **Calculate discount based on purchase amount**

python

CopyEdit

amount = float(input("Enter purchase amount: "))

if amount >= 5000:

discount = amount \* 0.20

elif amount >= 2000:

discount = amount \* 0.10

else:

discount = 0

print("Discount:", discount)

print("Final Amount:", amount - discount)

1. **Check if a student passed all subjects**

python

CopyEdit

sub1 = int(input("Enter marks of subject 1: "))

sub2 = int(input("Enter marks of subject 2: "))

sub3 = int(input("Enter marks of subject 3: "))

if sub1 >= 40 and sub2 >= 40 and sub3 >= 40:

print("Passed in all subjects")

else:

print("Failed")

1. **Determine if a shop is open or closed (based on time)**

python

CopyEdit

time = int(input("Enter time in 24-hour format (0–23): "))

if 9 <= time < 21:

print("Shop is Open")

else:

print("Shop is Closed")

1. **Determine if a date is valid**

python

CopyEdit

day = int(input("Enter day: "))

month = int(input("Enter month: "))

year = int(input("Enter year: "))

valid = False

# Check month validity

if 1 <= month <= 12:

# February

if month == 2:

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

if 1 <= day <= 29:

valid = True

else:

if 1 <= day <= 28:

valid = True

# Months with 30 days

elif month in [4, 6, 9, 11]:

if 1 <= day <= 30:

valid = True

# Months with 31 days

else:

if 1 <= day <= 31:

valid = True

if valid:

print("Valid Date")

else:

print("Invalid Date")

1. **Check if three sides form a valid triangle**  
   *(Sum of any two sides must be greater than the third)*

python

CopyEdit

a = int(input("Enter side 1: "))

b = int(input("Enter side 2: "))

c = int(input("Enter side 3: "))

if a + b > c and b + c > a and c + a > b:

print("Valid Triangle")

else:

print("Invalid Triangle")

1. **Check if a triangle is equilateral, isosceles, or scalene**

python

CopyEdit

a = int(input("Enter side 1: "))

b = int(input("Enter side 2: "))

c = int(input("Enter side 3: "))

if a == b == c:

print("Equilateral Triangle")

elif a == b or b == c or c == a:

print("Isosceles Triangle")

else:

print("Scalene Triangle")

1. **Check if three angles form a valid triangle**  
   *(Sum of angles must be 180° and all should be > 0)*

python

CopyEdit

a1 = int(input("Enter angle 1: "))

a2 = int(input("Enter angle 2: "))

a3 = int(input("Enter angle 3: "))

if a1 + a2 + a3 == 180 and a1 > 0 and a2 > 0 and a3 > 0:

print("Valid Triangle")

else:

print("Invalid Triangle")

1. **Print largest among three equal numbers**  
   (If all equal, print that number)

python

CopyEdit

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

b = int(input("Enter second number: "))

c = int(input("Enter third number: "))

if a == b == c:

print("All numbers are equal:", a)

else:

if a >= b and a >= c:

print("Largest:", a)

elif b >= c:

print("Largest:", b)

else:

print("Largest:", c)

1. **Print whether a person is child, teenager or adult**

python

CopyEdit

age = int(input("Enter age: "))

if age < 13:

print("Child")

elif age <= 19:

print("Teenager")

else:

print("Adult")

1. **Find the smallest of three numbers**

python

CopyEdit

a = int(input("Enter first: "))

b = int(input("Enter second: "))

c = int(input("Enter third: "))

if a <= b and a <= c:

print("Smallest:", a)

elif b <= c:

print("Smallest:", b)

else:

print("Smallest:", c)

1. **Check if two numbers are equal**

python

CopyEdit

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

b = int(input("Enter second number: "))

if a == b:

print("Numbers are Equal")

else:

print("Numbers are Not Equal")

1. **Check if the number is between 1 and 100**

python

CopyEdit

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

if 1 <= num <= 100:

print("Number is between 1 and 100")

else:

print("Number is outside the range")

1. **Compare two integers and print the greater one**

python

CopyEdit

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

b = int(input("Enter second number: "))

if a > b:

print("Greater:", a)

elif b > a:

print("Greater:", b)

else:

print("Both are Equal")

1. **Check if a given number is even and greater than 100**

python

CopyEdit

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

if num % 2 == 0 and num > 100:

print("Even and Greater than 100")

else:

print("Does not meet the condition")