**✅ [A] Number Basics (1–20)**

1. Check if a number is even or odd

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

if num % 2 == 0:

    print("The number is Even")

else:

    print("The number is Odd")

1. Check if a number is positive or negative

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

if num >= 0:

    print("The number is Positive")

else:

    print("The number is Negative")

1. Check if a number is zero or non-zero

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

if num == 0:

    print("The number is Zero")

else:

    print("The number is Non-Zero")

1. Check if a number is divisible by 2

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

if num % 2 == 0:

    print("The number is divisible by 2")

else:

    print("The number is not divisible by 2")

1. Check if a number is divisible by 5

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

if num % 5 == 0:

    print("The number is divisible by 5")

else:

    print("The number is not divisible by 5")

1. Check if a number is divisible by 3 and 5

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

if num % 3 == 0 and num % 5 == 0:

    print("The number is divisible by 3 and 5")

else:

    print("The number is not divisible by 3 and 5")

1. Check if a number is divisible by 7 or 11

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

if num % 7 == 0 and num % 11 == 0:

    print("The number is divisible by 7 and 11")

else:

    print("The number is not divisible by 7 and 11")

1. Check if a number is a multiple of another
2. Compare two numbers: greater, smaller or equal
3. Compare three numbers: find the greatest
4. Check if a number is less than 100
5. Check if a number is between 50 and 100
6. Check if a number is exactly 100
7. Check if the number is not equal to 10
8. Check if sum of two numbers is even or odd
9. Check if the product of two numbers is > 100
10. Check if the difference between two numbers is zero
11. Check if a number is positive and even
12. Check if number is divisible by 6 and > 50
13. Check if number is a perfect square (from a fixed set)

**🔢 [B] Number Properties (21–40)**

1. Check if number is a two-digit number
2. Check if number is a three-digit number
3. Check if a number is less than 10 or greater than 100
4. Check if two numbers are equal
5. Check if the square of a number is > 1000
6. Check if cube of a number is < 500
7. Check if number is divisible by 4 or 6
8. Check if the sum of three numbers is zero
9. Check if number is a prime (for small numbers)
10. Check if number is divisible by both 2 and 3
11. Compare square and cube of a number
12. Check if one number is square of another
13. Check if number is divisible by 10 and less than 1000
14. Check if number ends with digit 5 (last digit == 5)
15. Check if first digit and last digit of number are same (for 2-digit)
16. Compare absolute values of two numbers

num1 = int(input("Enter the first value: "))

num2 = int(input("Enter the second value: "))

if abs(num1) > abs(num2):

    print("The absolute value of ", num1," is greater than ", num2)

elif abs(num1) < abs(num2):

    print("The absolute value of ", num2," is greater than ", num1)

else:

    print("The absolute value of both the number is same.")

1. Check if a number is in a specific fixed list (e.g., 1, 2, 3, 5)

n1 = [1, 2, 3, 5]

print("The list is ", n1)

num = int(input("Enter a number to find in the list: "))

i = 0

while i < len(n1):

    if num == n1[i]:

        print("The number ", num," is in the list at ", i, "th index")

        break

    else:

        print("The element is not in the list")

    i +=1

1. Check if number is odd and greater than 100

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

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

    print("The number is odd and greater than 100.")

else:

    print("The number is not odd and greater than 100.")

1. Check if number is even and divisible by 4

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

if num % 2 == 0 and num % 4 == 0:

    print("The number is even and divisible by 4.")

else:

    print("The number is not even and divisible by 4")

1. Check if number is odd and divisible by 3

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

if num % 2 != 0 and num % 3 == 0:

    print("The number is odd and divisible by 3.")

else:

    print("The number is not odd and divisible by 3")

**🔤 [C] Character & String (41–60)**

1. Check if a character is a vowel

ch = input("Enter a character: ")

if ch=='a' or ch=='e' or ch=='i' or ch=='o' or ch=='u' or ch=='A' or ch=='E' or ch=='I' or ch=='O' or ch=='U':

    print("The character is a vowel.")

else:

    print("The character is a consonant.")

1. Check if a character is a consonant

ch = input("Enter a character: ")

if ch=='a' or ch=='e' or ch=='i' or ch=='o' or ch=='u' or ch=='A' or ch=='E' or ch=='I' or ch=='O' or ch=='U':

    print("The character is a vowel.")

else:

    print("The character is a consonant.")

1. Check if a character is uppercase

ch = input("Enter a character: ")

if ch.isupper():

    print("The character is in Upper Case")

else:

    print("The character is not in Upper Case")

1. Check if a character is lowercase

ch = input("Enter a character: ")

if ch.islower():

    print("The character is in Lower Case")

else:

    print("The character is not in Lower Case")

1. Check if a character is a digit

ch = input("Enter a character: ")

if ch.isdigit():

    print("The character entered is a digit.")

else:

    print("The character entered is not a digit.")

1. Check if a character is alphabet or not

ch = input("Enter a character: ")

if ch.isalpha():

    print("The character entered is an alphabet.")

else:

    print("The character entered is not an alphabet.")

1. Check if a character is special character

ch = input("Enter a character: ")

if ch.isalnum() or ch.isnumeric() or ch.isdecimal() or ch.isalpha():

    print("The character is not special character.")

else:

    print("The character is special character.")

1. Check if a character is space or tab

ch = input("Enter a character: ")

if ch.isspace():

    print("The character has a whitespace.")

else:

    print("The character has not a whitespace.")

1. Compare two characters: which comes first

ch1 = input("Enter first character: ")

ch2 = input("Enter second character: ")

if ord(ch1) < ord(ch2):

    print(ch1," comes before ", ch2)

else:

    print(ch2," comes before ", ch1)

1. Check if character is between 'A' and 'F'

ch = input("Enter a character: ")

if 'A' <= ch <= 'F':

    print("The character is in between A and F")

else:

    print("The character is not in between A and F")

1. Check if character is vowel and uppercase

ch = input("Enter a character: ")

if ch.upper() in 'AEIOU' and ch.isupper:

    print("The character is vowel and in uppercase")

else:

    print("The character is not vowel and not in uppercase")

1. Check if character is vowel and lowercase

ch = input("Enter a character: ")

if ch.lower() in 'aeiou' and ch.islower:

    print("The character is vowel and in lowercase")

else:

    print("The character is not vowel and not in lowercase")

1. Check if character is alphabet or digit

ch = input("Enter a character: ")

if ch.isalpha() or ch.isdigit():

    print("The character is alphabet or digit")

else:

    print("The character is not alphabet or digit")

1. Check if character is alphanumeric

ch = input("Enter a character: ")

if ch.isalnum():

    print("The character is Alphanumeric.")

else:

    print("The character is not Alphanumeric.")

1. Check if character is a punctuation

ch = input("Enter a character: ")

if ch.isalnum() or ch.isalpha() or ch.isdigit() or ch.isdigit() or ch.isdecimal() or ch.isnumeric() or ch.isspace():

    pass

else:

    print("The character is a punctuation")

1. Check if character is letter and comes before ‘m’

ch = input("Enter a character: ")

if ch.isalpha() and ord(ch) < ord('m'):

    print("The character is an alphabet and comes before 'm'.")

elif not ch.isalpha():

    print("The character is not an alphabet.")

else:

    print("The character is an alphabet but does not come before 'm'.")

1. Check if character is ASCII code < 100

ch = input("Enter a character: ")

if ord(ch) < 100:

    print("The ASCII of the character ", ch," is less than 100")

else:

    print("The ASCII of the character ", ch," is not less than 100")

1. Check if two characters are equal

ch1 = input("Enter first character: ")

ch2 = input("Enter second character: ")

if ch1 == ch2:

    print("Both the characters are same.")

else:

    print("Both the character are not same.")

1. Check if one character is next to another in alphabet

ch1 = input("Enter first character: ")

ch2 = input("Enter second character: ")

if ord(ch1) == ord(ch2)+1:

    print("The character ", ch1," is after ", ch2)

elif ord(ch2) == ord(ch1)+1:

    print("The character ", ch2," is after ", ch1)

else:

    print("The character are not after one another")

1. Check if string is exactly “hello” or not

**👨‍🎓 [D] Student / Marks Logic (61–75)**

1. Check if student passed (marks ≥ 40)
2. Grade student based on marks (A, B, C, F)
3. Check if student passed all three subjects
4. Check if total marks > 300
5. Check if student has distinction (marks ≥ 75 in all subjects)
6. Check if any subject is failed
7. Check if marks are valid (0 to 100)
8. Compare marks of two students
9. Check if average marks > 50
10. Check if all subjects have same marks
11. Check if one subject is topper (highest among 3)
12. Assign pass/fail using internal and external marks
13. Check if student eligible for scholarship (total > 270)
14. Check if improvement exam is needed (marks < 40)
15. Compare grades of two students (A > B > C > D > F)

**📆 [E] Date / Time / Age / Real-life (76–90)**

1. Check if year is leap year
2. Check if a person is eligible to vote (age ≥ 18)
3. Check if person is a minor, adult, or senior citizen
4. Check if time is morning, afternoon, or evening
5. Check if age is valid (0 to 120)
6. Check if person is teenager
7. Check if height is tall/medium/short
8. Compare two people by age
9. Determine driving license eligibility
10. Determine insurance eligibility based on age and health
11. Validate a basic date (day in 1-31, month 1-12)
12. Determine discount based on amount
13. Calculate fine based on number of late days
14. Determine eligibility for interview (age + marks)
15. Categorize body temperature (fever, normal, low)

**🧠 [F] Logical & Miscellaneous (91–100)**

1. Check if 3 numbers form a valid triangle (sides)
2. Check if 3 angles form a valid triangle
3. Identify triangle type (equilateral, isosceles, scalene)
4. Check if three numbers are equal
5. Find middle of three numbers
6. Check if one rectangle has larger area than another
7. Check if square can be formed with given length & breadth
8. Check if a person qualifies for sports team (based on age & height)
9. Check whether a shop is open based on time
10. Simple calculator: compare operator (+, -, \*, /) and apply accordingly