1. Check number is less than 10

```
1    if float(input("Enter a number: "))<10:
2        print("less than 10")
3    else:
4        print("Not less than 10")
```

```
Enter a number: 7
less than 10
```

2. Check numbers are equivalent

```
1    if float(input("Enter a number: "))==float(input("Enter another number: ")):
2        print("Both numbers are equal")
3    else:
4        print("Both numbers are not equal")
```

```
Enter a number: 5.6
Enter another number: 5.6
Both numbers are equal
```

3. Check voting eligibility

```
1    if int(input("Enter your age: "))>=18:
2        print("You're eligible to vote")
3    else:
4        print("You're not eligible to vote")
```

4. Check if number is even or odd

```
1 n=int(input("Enter a number: "))
2 if n%2==0:
3   print(n, "is even")
4 else:
5   print(n, "is odd")
```

```
Enter a number: 5
5 is odd
```

5. Enter three angles & check if it is a triangle

```
1 angla=float(input("Enter angle A of tiangle: "))
2 anglb=float(input("Enter angle B of tiangle: "))
3 anglc=float(input("Enter angle C of tiangle: "))
4 if angla+anglb+anglc == 180:
```

```
5   print("It is a trianlge")
6 else:
7   print("It is not a trianlge")
```

```
    Enter angle A of tiangle: 30
    Enter angle B of tiangle: 45
    Enter angle C of tiangle: 105
    It is a trianlge
```

6. Find total marks & percentage

```
 1 #  assume max marks per subject is 100
 2 totalM=0
 3 subjectcount=0
 4 while True:
 5   marks=float(input("Enter marks: "))
 6   if (marks==0):
 7     break
 8   totalM+=marks
 9   subjectcount+=100
10 print("Total Marks: ", totalM)
11 print("Percentage: ", 100*totalM/subjectcount)
```

```
    Enter marks: 78
    Enter marks: 95
    Enter marks: 87
    Enter marks: 69
    Enter marks: 82
    Enter marks: 0
    Total Marks:  411.0
    Percentage:  82.2
```

7. Check for leap year

```
1 y=int(input("Enter year: "))
2 if (y%4==0 and y%100!=0) or y%400==0 :
3   print("Leap Year")
4 else:
5   print("Non-Leap Year")
```

```
    Enter year: 2020
    Leap Year
```

8. Check number is +ve, -ve or zero

```
1 n=float(input("Enter a number: "))
2 if n>0:
3   print(n, "is positive")
4 elif n<0:
5   print(n, "is negative")
```

```
6 else:
7   print(n, "is zero")
```

```
Enter a number: .4587
0.4587 is positive
```

9. Largest amongst three numbers

```
1 no1=float(input("Enter number 1: "))
2 no2=float(input("Enter number 2: "))
3 no3=float(input("Enter number 3: "))
4 if no1>no2 and no1>no3:
5   print(no1, "is greatest")
6 elif  no2>no1 and no2>no3:
7   print(no2, "is greatest")
8 elif  no3>no1 and no3>no2:
9   print(no3, "is greatest")
10 elif no1==no2 and no2==no3:
11   print(no1, ",", no2, ",", no3, "are equal")
12 else:
13   print("Any two numbers are equal")
```

```
Enter number 1: 4
Enter number 2: 5
Enter number 3: 5
Any two numbers are equal
```

10. Print grade of employee

```
1 while True:
2   ch=int(input("\n\n1. Director\t2. Manager\n3. Team Lead\t4. Devops Engineer\n5. Developer\t6. Tester\nChoose to print employee grade: "))
3   if ch==1:
4     print("Director is Grade 'A' employee")
5   elif ch==2:
6     print("Manager is Grade 'B' employee")
7   elif ch==3:
8     print("Team Lead is Grade 'C' employee")
9   elif ch==4:
10     print("Devops Engineer is Grade 'D' employee")
11   elif ch==5:
12     print("Developer is Grade 'E' employee")
13   elif ch==6:
14     print("Tester is Grade 'F' employee")
15   elif ch==0:
16     break
17   else:
18     print("invalid option selection")
```

```
1. Director      2. Manager
3. Team Lead     4. Devops Engineer
5. Developer     6. Tester
```

```
Choose to print employee grade: 1
Director is Grade 'A' employee


1. Director      2. Manager
3. Team Lead     4. Devops Engineer
5. Developer     6. Tester
Choose to print employee grade: 2
Manager is Grade 'B' employee


1. Director      2. Manager
3. Team Lead     4. Devops Engineer
5. Developer     6. Tester
Choose to print employee grade: 5
Developer is Grade 'E' employee


1. Director      2. Manager
3. Team Lead     4. Devops Engineer
5. Developer     6. Tester
Choose to print employee grade: 6
Tester is Grade 'F' employee


1. Director      2. Manager
3. Team Lead     4. Devops Engineer
5. Developer     6. Tester
Choose to print employee grade: 8
invalid option selection


1. Director      2. Manager
3. Team Lead     4. Devops Engineer
5. Developer     6. Tester
Choose to print employee grade: 0
```

11. Print Color Name

```python
1  while True:
2    ch=int(input("\nEnter level of color in rainbow from bottom to top: "))
3    if ch==1:
4      print("1st color in rainbow is Violet")
5    elif ch==2:
6      print("2nd color in rainbow is Indigo")
7    elif ch==3:
8      print("3rd color in rainbow is Blue")46
9    elif ch==4:
10     print("4th color in rainbow is Green")
11   elif ch==5:
12     print("5th color in rainbow is Yellow")
13   elif ch==6:
14     print("6th color in rainbow is Orange")
15   elif ch==7:
16     print("7th color in rainbow is Red")
17   elif ch==0:
18     break
```

```
19  else:
20    print("invalid level of color in rainbow, it only has 7 colors")
```

```
Enter level of color in rainbow from bottom to top: 1
1st color in rainbow is Violet

Enter level of color in rainbow from bottom to top: 2
2nd color in rainbow is Indigo

Enter level of color in rainbow from bottom to top: 3
3rd color in rainbow is Blue

Enter level of color in rainbow from bottom to top: 4
4th color in rainbow is Green

Enter level of color in rainbow from bottom to top: 5
5th color in rainbow is Yellow

Enter level of color in rainbow from bottom to top: 6
6th color in rainbow is Orange

Enter level of color in rainbow from bottom to top: 7
7th color in rainbow is Red

Enter level of color in rainbow from bottom to top: 8
invalid level of color in rainbow, it only has 7 colors

Enter level of color in rainbow from bottom to top: 0
```

12. Print gross salary of employee

```
1 while True:
2   basesalary=float(input("\n\nEnter Base salary: "))
3   if basesalary>0:
4     da=basesalary*38/100
5     while True:
6       citytype=int(input("1. Metro city Employee\n2. Non-Metro City Employee\nEnter City type: "))
7       if citytype==1:
8         hra=basesalary*50/100
9         break
10      elif citytype==2:
11        hra=basesalary*40/100
12        break
13      else:
14        print("Invalid City type")
15    print("Gross salary is", basesalary+da+hra)
16  elif basesalary==0:
17    print("Exiting salary calculator")
18    break
19  else:
20    print("invalid salary input")
```

```
Enter Base salary: 12000
1. Metro city Employee
```

```
2. Non-Metro City Employee
Enter City type: 1
Gross salary is 22560.0


Enter Base salary: 12000
1. Metro city Employee
2. Non-Metro City Employee
Enter City type: 2
Gross salary is 21360.0


Enter Base salary: 0
Exiting salary calculator
```

13. Print division scored by student

```
1 while True:
2   per=int(input("\nEnter percentage scored by student: "))
3   if 100<per :
4     print("invalid percentage")
5   elif 75<=per:
6     print("Distinction")
7   elif 60<=per:
8     print("1st division")
9   elif 45<=per:
10    print("2nd division")
11  elif 40<=per:
12    print("3rd division")
13  elif 0<=per:
14    print("Fail")
15  elif 0>per:
16    print("Exiting program")
17    break
```

```
Enter percentage scored by student: 112
invalid percentage

Enter percentage scored by student: 78
Distinction

Enter percentage scored by student: 62
1st division

Enter percentage scored by student: 55
2nd division

Enter percentage scored by student: 43
3rd division

Enter percentage scored by student: 33
Fail

Enter percentage scored by student: -12
Exiting program
```

14. Find greatest among 3 numbers

```
1 no1=float(input("Enter number 1: "))
2 no2=float(input("Enter number 2: "))
3 no3=float(input("Enter number 3: "))
4 if no1>no2 and no1>no3:
5   print(no1, "is greatest")
6 elif  no2>no1 and no2>no3:
7   print(no2, "is greatest")
8 elif  no3>no1 and no3>no2:
9   print(no3, "is greatest")
10 elif no1==no2 and no2==no3:
11   print(no1, ",", no2, ",", no3, "are equal")
12 else:
13   print("Any two numbers are equal")
```

```
Enter number 1: 2
Enter number 2: 3
Enter number 3: 8
8.0 is greatest
```

15. Check if student scored distinction

```
1 while True:
2   per=int(input("\nEnter percentage scored by student: "))
3   if 100<per :
4     print("invalid percentage")
5   elif 75<=per:
6     print("Scored marks with distinction")
7   elif 0<=per:
8     print("Didn't score marks with distinction")
9   elif 0>per:
10     print("Exiting program")
11     break
```

```
Enter percentage scored by student: 120
invalid percentage

Enter percentage scored by student: 98
Scored marks with distinction

Enter percentage scored by student: 75
Scored marks with distinction

Enter percentage scored by student: 65
Didn't score marks with distinction

Enter percentage scored by student: 33
Didn't score marks with distinction

Enter percentage scored by student: -152
Exiting program
```

16. Check type of triangle

```
1 anga=float(input("Enter angle A of Triangle: "))
2 angb=float(input("Enter angle B of Triangle: "))
3 angc=float(input("Enter angle C of Triangle: "))
4 if (anga+angb+angc==180):
5   if anga==60 and angb==60 and angc==60:
6     print("Equilateral Triangle")
7   elif anga==90 or angb==90 or angc==90 :
8     print("Right angled Triangle")
9   elif (anga>90 and angb+angc<90) or (angb>90 and anga+angc<90) or (angc>90 and angb+anga<90):
10    print("Obtuse angled Triangle")
11  else:
12    print("Acute angled Triangle")
13 else:
14   print("Not a triangle")
```

```
    Enter angle A of Triangle: 80
    Enter angle B of Triangle: 40
    Enter angle C of Triangle: 60
    Acute angled Triangle
```

17. Check sum of digit greater than 10

```
1 no=int(input("Enter a number: "))
2 nocopy=no
3 sum=0
4 while nocopy>0:
5   d=nocopy%10
6   nocopy=nocopy//10
7   sum=sum+d
8 if sum>10:
9   print("Sum of digits is", sum, ", which is greater than 10")
10 else:
11   print("Sum of digits is", sum, ", which is not greater than 10")
```

```
    Enter a number: 12345
    Sum of digits is 15 , which is greater than 10
```

18. Print single digit number in words

```
1 n=int(input("Enter a single-digit number: "))
2 if n==0:
3   print("zero")
4 elif n==1:
5   print("one")
6 elif n==2:
7   print("two")
8 elif n==3:
9   print("three")
```

```
10 elif n==4:
11   print("four")
12 elif n==5:
13   print("five")
14 elif n==6:
15   print("six")
16 elif n==7:
17   print("seven")
18 elif n==8:
19   print("eight")
20 elif n==9:
21   print("nine")
22 else:
23   print("Not a single-digit number")
```

```
Enter a single-digit number: 5
five
```

19. Print numbers in words

```
1 n=int(input("Enter a Number: "))
2 nostr=""
3 ncp=n
4 placecnt=0
5 while ncp>0:
6   d=ncp%10
7   ncp=ncp//10
8   placecnt+=1
9   if placecnt==1:
10     if d==0:
11       nostr="zero"
12     if d==1:
13       nostr=nostr+" one"
14     if d==2:
15       nostr=nostr+" two"
16     if d==3:
17       nostr=nostr+" three"
18     if d==4:
19       nostr=nostr+" four"
20     if d==5:
21       nostr=nostr+" five"
22     if d==6:
23       nostr=nostr+" six"
24     if d==7:
25       nostr=nostr+" seven"
26     if d==8:
27       nostr=nostr+" eight"
28     if d==9:
29       nostr=nostr+" nine"
30   if placecnt==2:
31     if d==0 and nostr=="zero":
32       nostr="zero"
33     if d==1 and nostr=="zero":
34       nostr=" ten"
```

```
35      if d==1 and nostr==" one":
36        nostr=" eleven"
37      if d==1 and nostr==" two":
38        nostr=" twelve"
39      if d==1 and nostr==" three":
40        nostr=" thirteen"
41      if d==1 and nostr==" four":
42        nostr=" fourteen"
43      if d==1 and nostr==" five":
44        nostr=" fifteen"
45      if d==1 and nostr==" six":
46        nostr=" sixteen"
47      if d==1 and nostr==" seven":
48        nostr=" seventeen"
49      if d==1 and nostr==" eight":
50        nostr=" eighteen"
51      if d==1 and nostr==" nine":
52        nostr=" nineteen"
53      if d==2:
54        nostr="twenty -"+nostr
55      if d==3:
56        nostr="thirty -"+nostr
57      if d==4:
58        nostr="forty -"+nostr
59      if d==5:
60        nostr="ffty -"+nostr
61      if d==6:
62        nostr="sixty -"+nostr
63      if d==7:
64        nostr="seventy -"+nostr
65      if d==8:
66        nostr="eighty -"+nostr
67      if d==9:
68        nostr="ninety -"+nostr
69    if placecnt==3:
70      if d==0 and nostr=="zero":
71        nostr="zero"
72      if d==1 and nostr=="zero":
73        nostr=" one-hundred"
74      if d==1 and nostr!=" one-hundred":
75        nostr=" one-hundred "+nostr
76      if d==2 and nostr=="zero":
77        nostr=" two-hundred"
78      if d==2 and nostr!=" two-hundred":
79        nostr=" two-hundered "+nostr
80      if d==3 and nostr=="zero":
81        nostr=" three-hundred"
82      if d==3 and nostr!=" three-hundred":
83        nostr=" three-hundered "+nostr
84      if d==4 and nostr=="zero":
85        nostr=" four-hundred"
86      if d==4 and nostr!=" four-hundred":
87        nostr=" four-hundered "+nostr
88      if d==5 and nostr=="zero":
89        nostr=" five-hundred"
90      if d==5 and nostr!=" five-hundred":
```

```
 91        nostr=" five-hundered "+nostr
 92      if d==6 and nostr=="zero":
 93        nostr=" six-hundred"
 94      if d==6 and nostr!=" six-hundred":
 95        nostr=" six-hundered "+nostr
 96      if d==7 and nostr=="zero":
 97        nostr=" seven-hundred"
 98      if d==7 and nostr!=" seven-hundred":
 99        nostr=" seven-hundered "+nostr
100      if d==8 and nostr=="zero":
101        nostr=" eight-hundred"
102      if d==8 and nostr!=" eight-hundred":
103        nostr=" eight-hundered "+nostr
104      if d==9 and nostr=="zero":
105        nostr=" nine-hundred"
106      if d==9 and nostr!=" nine-hundred":
107        nostr=" nine-hundered "+nostr
108    if placecnt==4:
109      if d==1 and nostr=="zero":
110        nostr=" one-thousand"
111      if d==1 and nostr!=" one-thousand":
112        nostr=" one-thousand "+nostr
113      if d==2 and nostr=="zero":
114        nostr=" two-thousand"
115      if d==2 and nostr!=" two-thousand":
116        nostr=" two-thousand "+nostr
117      if d==3 and nostr=="zero":
118        nostr=" three-thousand"
119      if d==3 and nostr!=" three-thousand":
120        nostr=" three-thousand "+nostr
121      if d==4 and nostr=="zero":
122        nostr=" four-thousand"
123      if d==4 and nostr!=" four-thousand":
124        nostr=" four-thousand "+nostr
125      if d==5 and nostr=="zero":
126        nostr=" five-thousand"
127      if d==5 and nostr!=" five-thousand":
128        nostr=" five-thousand "+nostr
129      if d==6 and nostr=="zero":
130        nostr=" six-thousand"
131      if d==6 and nostr!=" six-thousand":
132        nostr=" six-thousand "+nostr
133      if d==7 and nostr=="zero":
134        nostr=" seven-thousand"
135      if d==7 and nostr!=" seven-thousand":
136        nostr=" seven-thousand "+nostr
137      if d==8 and nostr=="zero":
138        nostr=" eight-thousand"
139      if d==8 and nostr!=" eight-thousand":
140        nostr=" eight-thousand "+nostr
141      if d==9 and nostr=="zero":
142        nostr=" nine-thousand"
143      if d==9 and nostr!=" nine-thousand":
144        nostr=" nine-thousand "+nostr
145 print(n, "is spelled as", nostr)
```

```
Enter a Number: 940
940 is spelled as  nine-hundered forty -zero
```

20. Read a day of week in digit

```
1  d=int(input("Enter digit for a day in week: "))
2  if n==1:
3    print("Monday")
4  elif n==2:
5    print("Tuesday")
6  elif n==3:
7    print("Wednesday")
8  elif n==4:
9    print("Thursday")
10 elif n==5:
11   print("Friday")
12 elif n==6:
13   print("Saturday")
14 elif n==7:
15   print("Sunday")
16 else:
17   print("invalid digit for day of week")
```

```
Enter digit for a day in week: 6
Friday
```

21. Perform arithmetic operations

```
1  op=int(input("1. Addition\t\t2. Subtraction\n3. Multiplication\t4. Division\n5. Modulus\t\t6. Floor Division\n7. Power/Exponent\nChoose Operation: "))
2  no1=float(input("Enter 1st operand: "))
3  no2=float(input("Enter 2nd operand: "))
4  if op==1:
5    print(no1, "+", no2, "=", no1+no2)
6  elif op==2:
7    print(no1, "-", no2, "=", no1-no2)
8  elif op==3:
9    print(no1, "*", no2, "=", no1*no2)
10 elif op==4:
11   print(no1, "/", no2, "=", no1/no2)
12 elif op==5:
13   print(no1, "%", no2, "=", no1%no2)
14 elif op==6:
15   print(no1, "//", no2, "=", no1//no2)
16 elif op==7:
17   print(no1, "**", no2, "=", no1**no2)
18 else:
19   print("Invlid operator choice")
```

```
1. Addition          2. Subtraction
3. Multiplication    4. Division
5. Modulus           6. Floor Division
7. Power/Exponent
```

```
Choose Operation: 5
Enter 1st operand: 9
Enter 2nd operand: 4
9.0 % 4.0 = 1.0
```

22. Check alphabet is vowel or consonant

```
1 alp=input("Enter an alphabet: ")
2 if alp=='a' or alp=='e' or alp=='i' or alp=='o' or alp=='u' or alp=='A' or alp=='E' or alp=='I' or alp=='O' or alp=='U':
3   print("Vowel alphabet")
4 else:
5   print("Consonant alphabet")
```

```
Enter an alphabet: G
Consonant alphabet
```

23. Check number is even or odd

```
1 n=int(input("Enter a number: "))
2 if n%2==0:
3   print("Even number")
4 else:
5   print("Odd Number")
```

```
Enter a number: 45
Odd Number
```

24. Right Shift & Left Shift Operations

```
1 no1=int(input("Enter 1st operand: "))
2 no2=int(input("Enter 2nd operand/ number of bits: "))
3 print(no1, "<<", no2, "=", no1<<no2)
4 print(no1, ">>", no2, "=", no1>>no2)
```

```
Enter 1st operand: 32
Enter 2nd operand/ number of bits: 2
32 << 2 = 128
32 >> 2 = 8
```

```
1
2
```