LIST

print multiples of 3 upto 200 using a list

```
In [4]:  ▶ print(*range(3, 200, 3))
```

```
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84 8
7 90 93 96 99 102 105 108 111 114 117 120 123 126 129 132 135 138 141 144 147 150
153 156 159 162 165 168 171 174 177 180 183 186 189 192 195 198
```

print the nos only divisable by 5 and 7 between 1000 and 2000 using a list

```
In [5]:  ▶ nl=[]
           for x in range(1000, 2000):
               if (x%5==0) and (x%7==0):
                   nl.append(str(x))
           print (','.join(nl))
```

```
1015,1050,1085,1120,1155,1190,1225,1260,1295,1330,1365,1400,1435,1470,1505,1540,15
75,1610,1645,1680,1715,1750,1785,1820,1855,1890,1925,1960,1995
```

Add the n number of names in a list and print them alphabetically and reverse alphabetically

```
In [2]:  ▶ a=[]
           n=int(input("Enter number of elements:"))
           for i in range(1,n+1):
               b=str(input("Enter element:"))
               a.append(b)
           print(a)
           a.sort()
           print("sorted list in alphabetical order",a)
           a.reverse()
           print("list in the reverse alphabetical order",a)
```

```
Enter number of elements:5
Enter element:bhadravathi
Enter element:shivamogga
Enter element:koppa
Enter element:chitradurga
Enter element:davangere
['bhadravathi', 'shivamogga', 'koppa', 'chitradurga', 'davangere']
sorted list in alphabetical order ['bhadravathi', 'chitradurga', 'davangere', 'kop
pa', 'shivamogga']
list in the reverse alphabetical order ['shivamogga', 'koppa', 'davangere', 'chitr
adurga', 'bhadravathi']
```

Print perfect squares and divisible by 5 between 500 and 1000 (both inclusive using list comprehension

```
In [6]:  ▶ import math
            print([x for x in range(500,1000)if(x%5==0 and x==math.isqrt(x)**2)])
```

```
            ---------------------------------------------------------------------------
            AttributeError                            Traceback (most recent call last)
            <ipython-input-6-28e514c67d78> in <module>
                  1 import math
            ----> 2 print([x for x in range(500,1000)if(x%5==0 and x==math.isqrt(x)**2)])

            <ipython-input-6-28e514c67d78> in <listcomp>(.0)
                  1 import math
            ----> 2 print([x for x in range(500,1000)if(x%5==0 and x==math.isqrt(x)**2)])

            AttributeError: module 'math' has no attribute 'isqrt'
```

Calculate the Average of the numbers in a List by getting the elements of list from keyboard

```
In [31]:  ▶ a=[]
            n=int(input("Enter number of elements:"))
            for i in range(1,n+1):
                b=int(input("Enter element:"))
                a.append(b)
            print("the element of the list are",a)
            print("averageof the number in the list is",sum(a)/len(a))
```

```
            Enter number of elements:5
            Enter element:1
            Enter element:2
            Enter element:3
            Enter element:4
            Enter element:5
            the element of the list are [1, 2, 3, 4, 5]
            averageof the number in the list is 3.0
```

Print lists of odd,even and multiples of 5 numbers from 1 to 1000 using list comprehension

```
In [9]:  ▶ odd = [x for x in range(1000) if x % 5 == 0]
            print("list of add numbers in range (1,1000) is: ",odd)
```

```
            list of add numbers in range (1,1000) is:  [0, 5, 10, 15, 20, 25, 30, 35, 40, 45,
            50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 14
            0, 145, 150, 155, 160, 165, 170, 175, 180, 185, 190, 195, 200, 205, 210, 215, 220,
            225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, 290, 295, 300, 30
            5, 310, 315, 320, 325, 330, 335, 340, 345, 350, 355, 360, 365, 370, 375, 380, 385,
            390, 395, 400, 405, 410, 415, 420, 425, 430, 435, 440, 445, 450, 455, 460, 465, 47
            0, 475, 480, 485, 490, 495, 500, 505, 510, 515, 520, 525, 530, 535, 540, 545, 550,
            555, 560, 565, 570, 575, 580, 585, 590, 595, 600, 605, 610, 615, 620, 625, 630, 63
            5, 640, 645, 650, 655, 660, 665, 670, 675, 680, 685, 690, 695, 700, 705, 710, 715,
            720, 725, 730, 735, 740, 745, 750, 755, 760, 765, 770, 775, 780, 785, 790, 795, 80
            0, 805, 810, 815, 820, 825, 830, 835, 840, 845, 850, 855, 860, 865, 870, 875, 880,
            885, 890, 895, 900, 905, 910, 915, 920, 925, 930, 935, 940, 945, 950, 955, 960, 96
            5, 970, 975, 980, 985, 990, 995]
```

TUPLE

Python Program to Create a List of Tuples with the First Element as the Number and Second Element as the Square of the Number

In [10]:
```python
l_range=int(input("Enter the lower range:"))
u_range=int(input("Enter the upper range:"))
a=[(x,x**2) for x in range(l_range,u_range+1)]
print(a)
```

```
Enter the lower range:2
Enter the upper range:10
[(2, 4), (3, 9), (4, 16), (5, 25), (6, 36), (7, 49), (8, 64), (9, 81), (10, 100)]
```

python program to have a list of words to sort them from shortest to longest using list of tuples

In [14]:
```python
txt = 'this is aiet in mijar'
words = txt.split()
t = list()
for word in words:
    t.append((len(word), word))
    t.sort()
    res = list()
for length, word in t:
    res.append(word)
print(res)
```

```
['in', 'is', 'aiet', 'this', 'mijar']
```

Write python program to get a list of tuples of Rollno,Name for 5 students through keyboard and sort them Rollno wise ascending order

In [15]: ▶|
```python
t=[]
a=[]
n=int(input("enter num of students: "))
for i in range(0,n):
  e=int(input("enter rollnum: "))
  j=input("enter name: ")
  t.append(e)
  a.append(j)
m = [(t[i], a[i]) for i in range(0, len(t))]
print("input: ",m)
m.sort(key = lambda x:x[0])
print("output",m)
```

```
enter num of students: 2
enter rollnum: 12
enter name: ojhbdx
enter rollnum: 15
enter name: jgfxctyagx
input:  [(12, 'ojhbdx'), (15, 'jgfxctyagx')]
output [(12, 'ojhbdx'), (15, 'jgfxctyagx')]
```

Write python program to get a list of tuples of Rollno,Name for 5 students through keyboard and sort them by Rollno wise descending order

In [16]: ▶|
```python
t=[]
a=[]
n=int(input("enter num of students: "))
for i in range(0,n):
  e=int(input("enter rollnum: "))
  j=input("enter name: ")
  t.append(e)
  a.append(j)
m = [(t[i], a[i]) for i in range(0, len(t))]
print("input: ",m)
m.sort(key = lambda x:x[0], reverse=1)
print("output",m)
```

```
enter num of students: 2
enter rollnum: 12
enter name: ihguykc
enter rollnum: 15
enter name: 'kbvkutyu
input:  [(12, 'ihguykc'), (15, "'kbvkutyu")]
output [(15, "'kbvkutyu"), (12, 'ihguykc')]
```

Write python program to get a list of tuples of Rollno,Name for 5 students through keyboard and sort them by Name wise ascending order

```
t=[]
a=[]
n=int(input("enter num of students: "))
for i in range(0,n):
  e=int(input("enter rollnum: "))
  j=input("enter name: ")
  t.append(e)
  a.append(j)
m = [(t[i], a[i]) for i in range(0, len(t))]
print("input: ",m)
m.sort(key = lambda x:x[1])
print("output",m)
```

```
enter num of students: 2
enter rollnum: 12
enter name: yjdnf
enter rollnum: 15
enter name: fgjfgjd
input:  [(12, 'yjdnf'), (15, 'fgjfgjd')]
output [(15, 'fgjfgjd'), (12, 'yjdnf')]
```

Write python program to get a list of tuples of Rollno,Name for 5 students through keyboard and sort them by Name wise descending order

```
t=[]
a=[]
n=int(input("enter num of students: "))
for i in range(0,n):
  e=int(input("enter rollnum: "))
  j=input("enter name: ")
  t.append(e)
  a.append(j)
m = [(t[i], a[i]) for i in range(0, len(t))]
print("input: ",m)
m.sort(key = lambda x:x[1], reverse=1)
print("output",m)
```

```
enter num of students: 2
enter rollnum: 12
enter name: fkghf
enter rollnum: 15
enter name: fdfdh
input:  [(12, 'fkghf'), (15, 'fdfdh')]
output [(12, 'fkghf'), (15, 'fdfdh')]
```