In [6]:
```python
'''
1
22
333
4444
55555
'''

for i in range(1,6):
    print(str(i)*i)
```

```
1
22
333
4444
55555
```

In [14]:
```python
x=5
print(type(x))
y=str(x)
print(type(y))
```

```
<class 'int'>
<class 'str'>
```

In [19]:
```python
print(5*2)
print("5"*2)
print("aman"*3)
print("12"*3)
```

```
10
55
amanamanaman
121212
```

In [28]:
```python
for i in range(1,6): #1 2 3 4 5
    for j in range(1,i+1): #run i items(4)
        print(i,end='')
    print()
```

```
1
22
333
4444
55555
```

In [31]:
```python
for i in range(5,0,-1):
    for j in range(1,i+1):
        print(i,end='')
    print()
```

```
55555
4444
333
22
1
```

In [35]:
```python
for i in range(1,6): #1 2 3 4 5
    for j in range(1,i+1): #run i items(4)
        print("*",end='')
    print()
for i in range(4,0,-1):
    for j in range(1,i+1):
        print("*",end='')
    print()
```

```
*
**
***
****
*****
****
***
**
*
```

In [42]:

```python
sp=3
for i in range(1,5): #row 5
    print(" "*sp,end='')
    for j in range(1,i+1):
        print(j,end='')
    for k in range(j-1,0,-1):
        print(k,end='')
    sp=sp-1    #decrease space by 1
    print()
sp=1
for i in range(3,0,-1): #row 5
    print(" "*sp,end='')
    for j in range(1,i+1):
        print(j,end='')
    for k in range(j-1,0,-1):
        print(k,end='')
    sp+=1    #increase space by 1
    print()
```

```
   1
  121
 12321
1234321
 12321
  121
   1
```

In [43]:

```python
sp=3
for i in range(1,5): #row 5
    print(" "*sp,end='')
    for j in range(1,i+1):
        print("*",end='')
    for k in range(j-1,0,-1):
        print("*",end='')
    sp=sp-1    #decrease space by 1
    print()
sp=1
for i in range(3,0,-1): #row 5
    print(" "*sp,end='')
    for j in range(1,i+1):
        print("*",end='')
    for k in range(j-1,0,-1):
        print("*",end='')
    sp+=1    #increase space by 1
    print()
```

```
   *
  ***
 *****
*******
 *****
  ***
   *
```

In [48]:

```python
for i in range(1,11):
    if i%2==1:
        start=0
        for j in range(1,i+1):
            if start==1:
                start=0
            else:
                start=1
            print(start,end='')
    else:
        start=1
        for j in range(1,i+1):
            if start==1:
                start=0
            else:
                start=1
            print(start,end='')
    print()
```

```
1
01
101
0101
10101
010101
1010101
01010101
101010101
0101010101
```

In [ ]: