```
##1.FACTORIAL fact=1
n=int(input('enter a num:'))
for i in range(n,0,-1):
    fact=fact*i print(fact)


##2.FIBINOCI
n=int(input('enter a number:'))
a=0 b=1 i=0 while i<n:
print(a)      c=a+b      a=b
b=c      i+=1


##3.ARMSTRONG def armstrong():
num=int(input('enter a number:'))
arms=str(num)      result = 0      for i
in arms:
result=result+int(i)**len(arms)
print(result)      if result==num:
        print('armstrong')      else:
print('not armstrong') armstrong()
##lambda def arm_lambda():
num=int(input('Enter a number:'))
arms=str(num)
    result=list(map(lambda a:int(a)**len(arms),arms))
final=0
    for i in result:
final=final+i
print(final) arm_lambda()


##4.REVERSE INTEGER l
= []
n =int(input('Enter the num of elements:')) for
i in range(n):
    l.append(int(input('enter the elements')))
print('list=',l)
print('Reveresed list=',l[::-1])
```

```
##5.RECUSSION FACTORIAL
def cal_fac(n):     fact =
1     for i in
range(1,n+1):          fact
= fact * i     print(fact)
cal_fac(4)


# 6.RIGHT SIDE TRIANGLE UPWARD
def pattern():
    n=5     for i in
range(1,n+1):
        print(' *'*i)
pattern()


##7.RIGHT SIDE TRIANGLE DOWNWARD
def pattern1():
    n=5     for i in range(n ,
0, -1):
          print(' *'*i)
pattern1()


##8.LEFT SIDE TRIANGLE UPWARD def
pattern3():
    n=5     for i in
range(1,n+1):          print('
'*(n-i),'*'*i) pattern3()


##9.LEFT SIDE TRIANGLE DOWNWARD
def pattern4():
  n=5   for i in
range(1,n+1):
        print(' '*i,'*'*(n-i))
pattern4()
```

```
##10.USER NAME PASSWORD
name=input('Enter a name:') if
name=='RANGU':
print('hi,RANGU')
pas=input('Enter a password:')
if pas=='123':
        print('Access granted')
while pas!='123':
        new_pas=input('Enter a new password')
if new_pas=='123':
            print("Access granted")
break else:
    print('name is not found')


##11.USER NAME PASSWORD WITH ATTEMPTS
u_n=input('Enter a name:') if
u_n=='RANGU':
    print('hi,RANGU')
for i in range(1,4):
        u_p=input("enter a password")
if u_p=='123':
            print('welcome')
            break         else:
print(f"{i}attempts done/n {3-i} attempts are
remaining")          if i==3:
            print('Account block')
else:
    print('invalid user')


 ##12.ATM
name=['gavi','kamal','venu','RANGU'] pas=[1,2,3,4]
balance=[1000,1500,1200,1000]
  def
withdraw(current):
    amt=int(input('Enter a amount:'))
if amt<=balance[current]:
balance[current]-=amt
print(balance[current])
```

```
else:print('insufficient') def
deposit(current):
    amt=amt=int(input('Enter a amount:'))
balance[current]+= amt
print(balance[current]) def
c_balance(current):
    print('Balance is:',balance[current]) def
default(current):
    print("enter crt option")


u_n=input('Enter a name:')
u_p=int(input('Enter a password:'))
for i in range(len(name)):     if
u_n==name[i]:
print('hello')          if
u_p==pas[i]:              while
True:
                print('1:withdraw\n 2:deposit\n
3:balance')
                option=int(input('Enter option:'))
                if option==0:break

data={1:withdraw,2:deposit,3:c_balance}
res=data.get(option,default)                    res(i)



##13.SQUARE PATTERN
n=int(input('Enter a value:'))
for i in range(1,n+1):     if
i==1 or i==n:          print('*
'*n)
    else:print('* ',' '*(n-2),'*')


##14.UPWARD TRIANGLE def
pattern6():
    n = int(input('Enter a num:'))
for i  in range(1,n+1):
        print(' '*(n-i),'*'*(i+(i-1))) pattern6()
```

```
##15.DOWNWORD TRIANGLE def
pattern7():
    n = int(input('Enter a num:'))
for i in range(n,0,-1):
        print(' '*(n-i),'*' *(i+(i-1))) pattern7()


##16.WORD PATTERN def
name1():
    w=input('Enter a word:')
for i in range(len(w)):
print(w[0:i+1])     for i in
range(len(w), 1, -1):
        print(w[0:i - 1])
name1()
```