```python
import numpy as np
n=int(input())
l=[]
for i in range(3):
    k=[i for i in str(input())]
    l+=[k]
A=np.array([['.','*','.'],['*','*','*'],['*','.','*']])
E=np.array([['*','*','*'],['*','*','*'],['*','*','*']])
I=np.array([['*','*','*'],['.','*','.'],['*','*','*']])
O=np.array([['*','*','*'],['*','.','*'],['*','*','*']])
U=np.array([['*','.','*'],['*','.','*'],['*','*','*']])

import numpy as np
arr=np.array(l)
st=""
i=0
while(i<n):
    if arr[0][i]=='#':
        st+="#"
        i+=1
    else:
        d=arr[:,i:i+3]
        if(d==A).all():
            st+='A'
            i+=3
        elif(d==E).all():
            st+='E'
            i+=3
        elif(d==I).all():
            st+='I'
            i+=3
        elif(d==O).all():
            st+='O'
            i+=3

        elif(d==U).all():
            st+='U'
            i+=3
        else:
            i+=1
print(st)
```