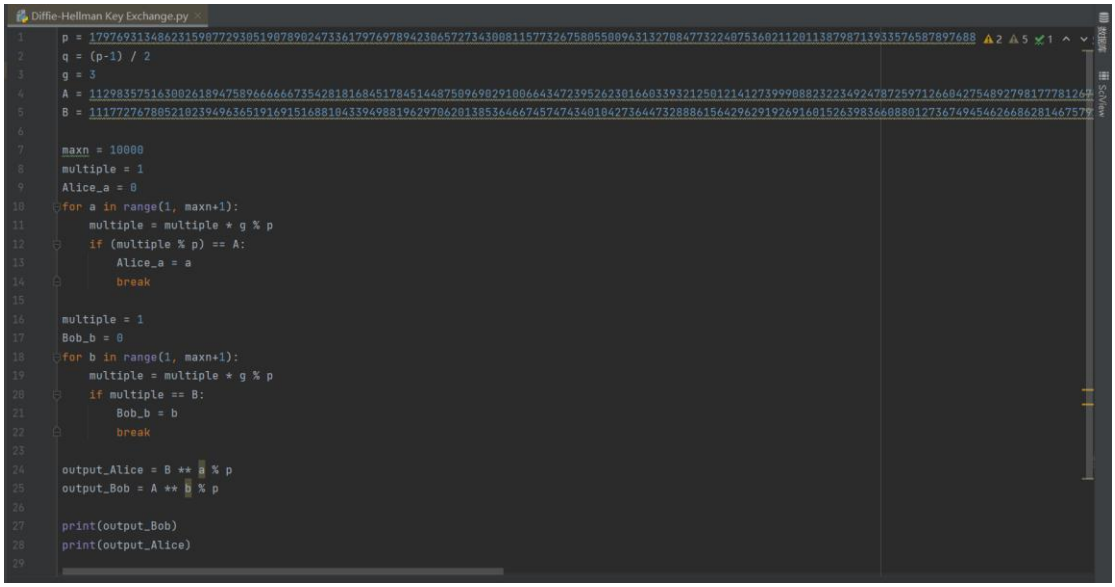


```
p = 179769313486231590772930519078902473361797697894230657273430081157732675805500963132708477322407536021120113879871393357658789768814416622492847430639474124377767893424865485276302219601246094119453082952085005768838150682342462881473913110540827237163350510684586298239947245938479716304835356329624227998859
q = (p-1) / 2
g = 3
A = 112983575163002618947589666666735428181684517845144875096902910066434723952623016603393212501214127399908823223492478725971266042754892798177781267512821607470545283059472689034731313027619864228688466438258327552045437590203790635506728603774799021127049872571983254506993921153718739796769296097404717448108
B = 111772767805210239496365191691516881043394988196297062013853646674574743401042736447328886156429629192691601526398366088012736749454626686281467579205675084461989494513294624066074137247913037330040487275346913253345733429767781900977102687185378411660147190296412313303321533586102552123457499563789255321369

maxn = 10000
multiple = 1
Alice_a = 0
for a in range(1, maxn+1):
    multiple = multiple * g % p
    if (multiple % p) == A:
        Alice_a = a
        break

multiple = 1
Bob_b = 0
```

```
for b in range(1, maxn+1):
        multiple = multiple * g % p
        if multiple == B:
                Bob_b = b
                break

output_Alice = B ** a % p
output_Bob = A ** b % p

print(output_Bob)
print(output_Alice)

# k = output_Alice = output_Bob =
1082811278345346238104170780205614986659639207224390394098745967277926067531952266309908038877090398254625052499242035020020762432742061230017062080266530290575004577768434812582748436500759071863837318793688996730932472265529499222581541091410507221072504595310501935245754077299550897831569910724739835012 8
```