# 写出下列程序的运行结果

```
int main()
{  const char *c[]={"John learn C++ language",
                    "Be well!", "You", "Not very"};
   const char **p[]={c+3, c+2, c+1, c};
   const char ***pp=p;
   cout << (**++pp);
   cout << (*--*++pp+4);
   cout << (*pp[-2]+3);
   cout << (pp[-1][-1]+2);
   cout << endl;
   return 0;
}
```

注：直接在本文件上作答，画出程序执行过程的内存变化即可

★ 首先画出三句定义语句结束后内存中各变量的所占空间及初值

★ 每个执行语句的每一步执行完成后的内存中各变量的所占空间及值

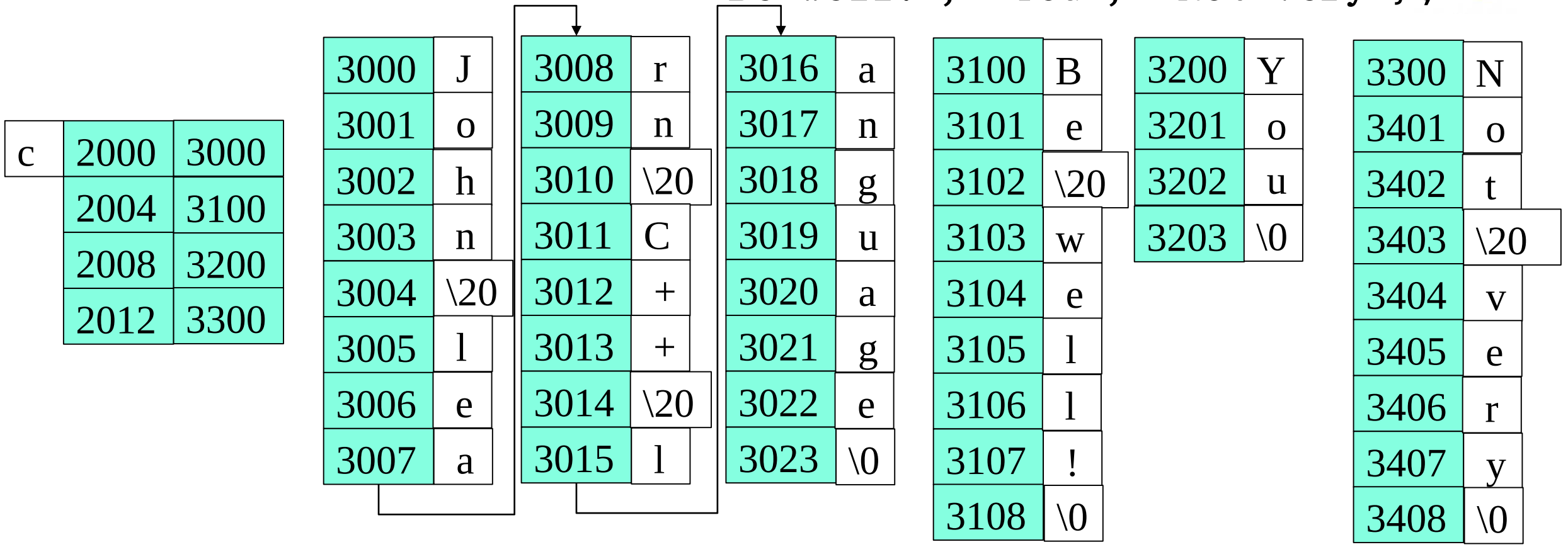
★ 每步变化一个页面(例：**++pp，分三步计算，需要三页)

★ 不允许手写在纸上，再拍照贴图

★ 允许在各种软件工具上完成，再截图贴图

★ 转换为pdf后提交

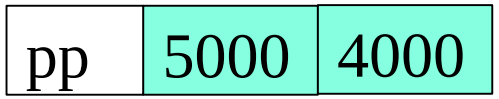
```
const char *c[]={"John learn C++ language",
                 "Be well!", "You", "Not very"};
```



```
const char **p[]={c+3, c+2, c+1, c};
```

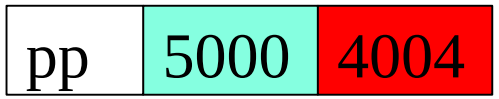
| | | |
|---|---|---|
| p | 4000 | 3300 |
| | 4004 | 3200 |
| | 4008 | 3100 |
| | 4012 | 3000 |

```
const char ***pp=p;
```



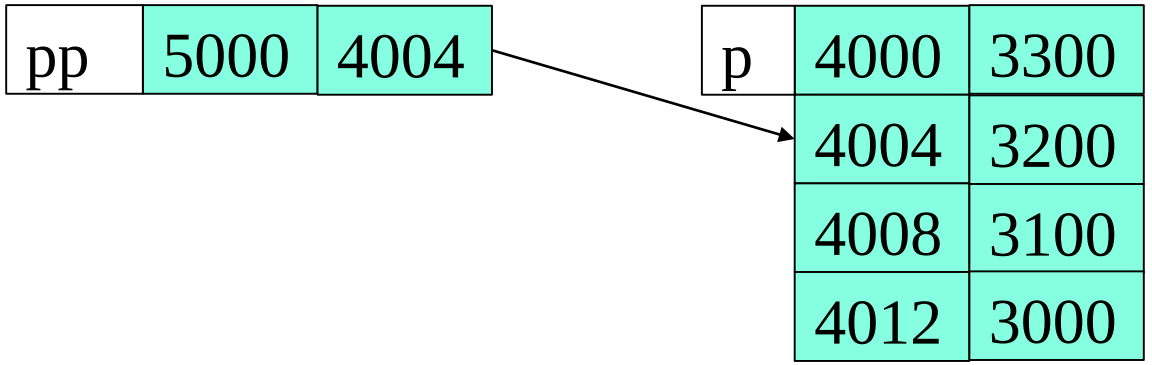
cout << (**++pp);

++pp



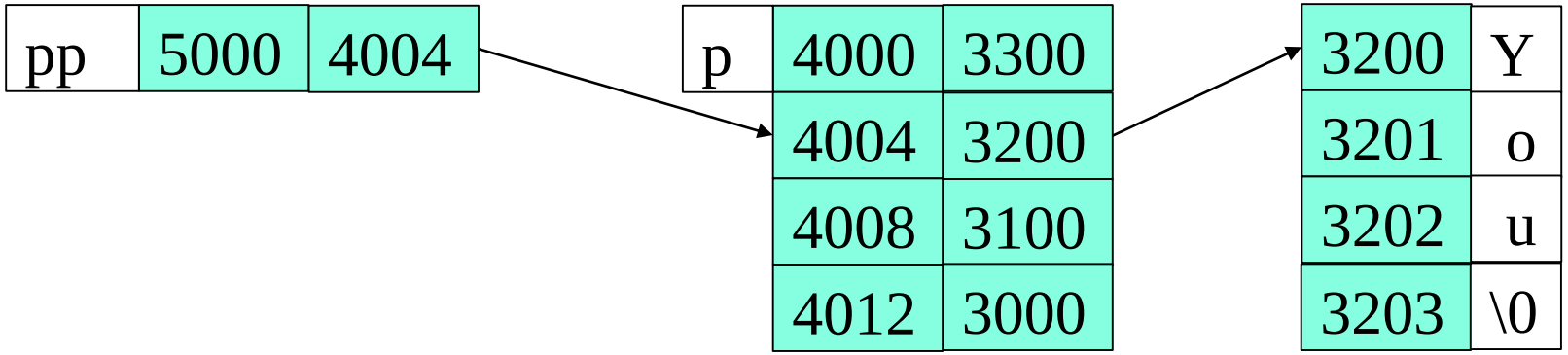
cout << (**++pp);

*++pp



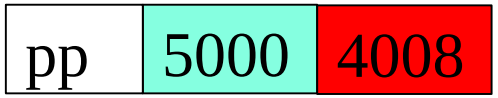
cout << (**++pp);

**++pp


pp
5000
4004
p
4000
3300
4004
3200
4008
3100
4012
3000
3200
Y
3201
o
3202
u
3203
\0

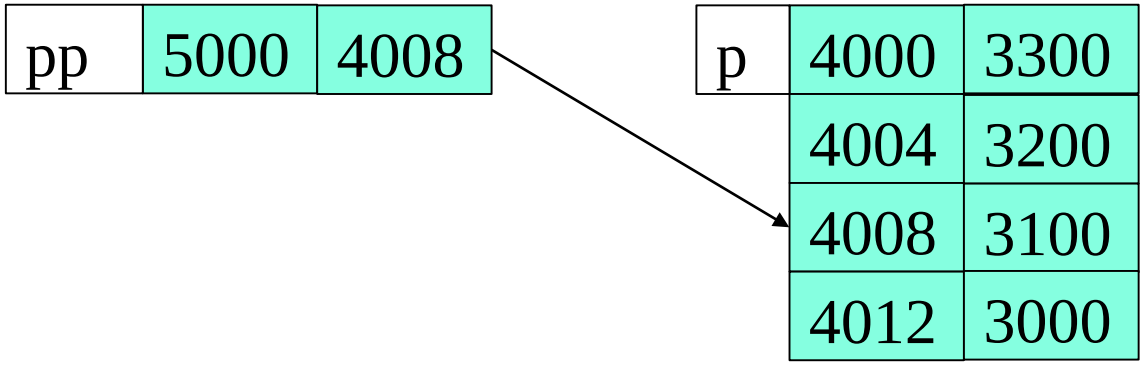
cout << (*--*++pp+4);

++pp



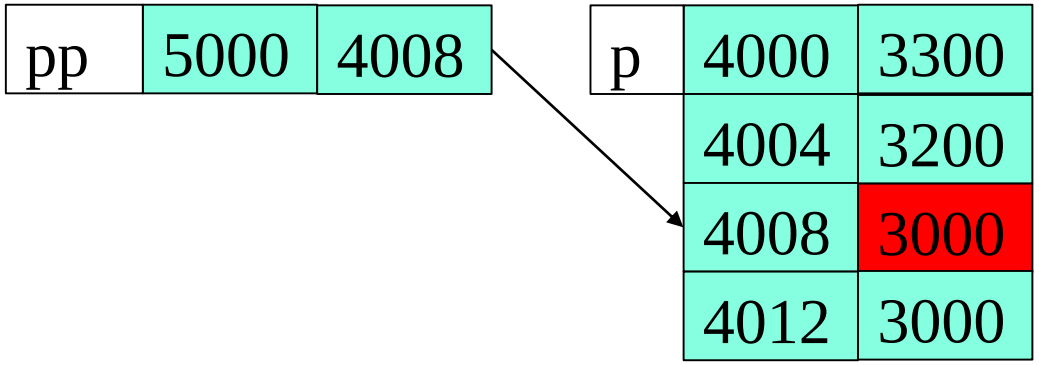
cout << (*--*++pp+4);

*++pp



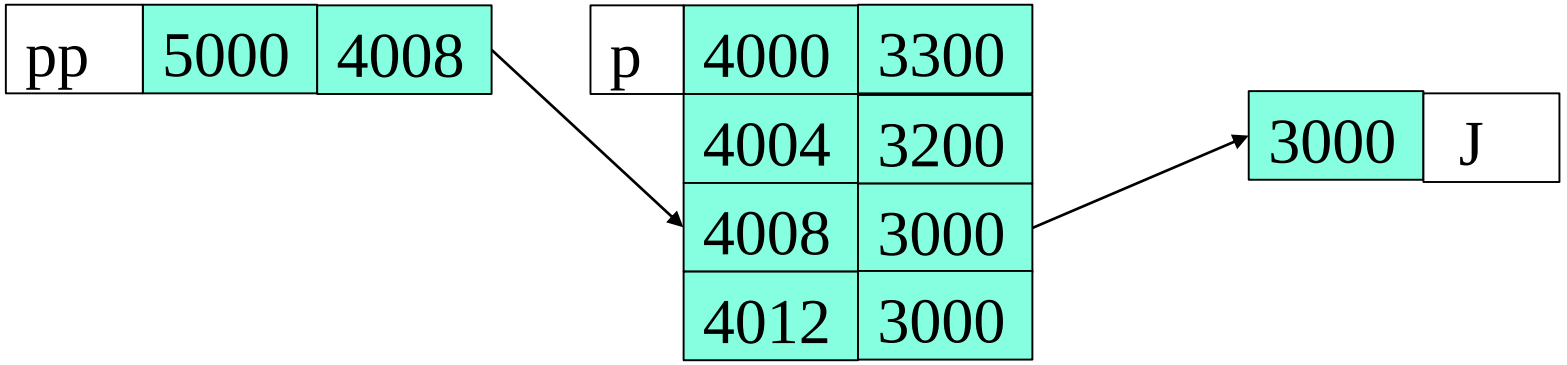
cout << (*--*++pp+4);

--*++pp

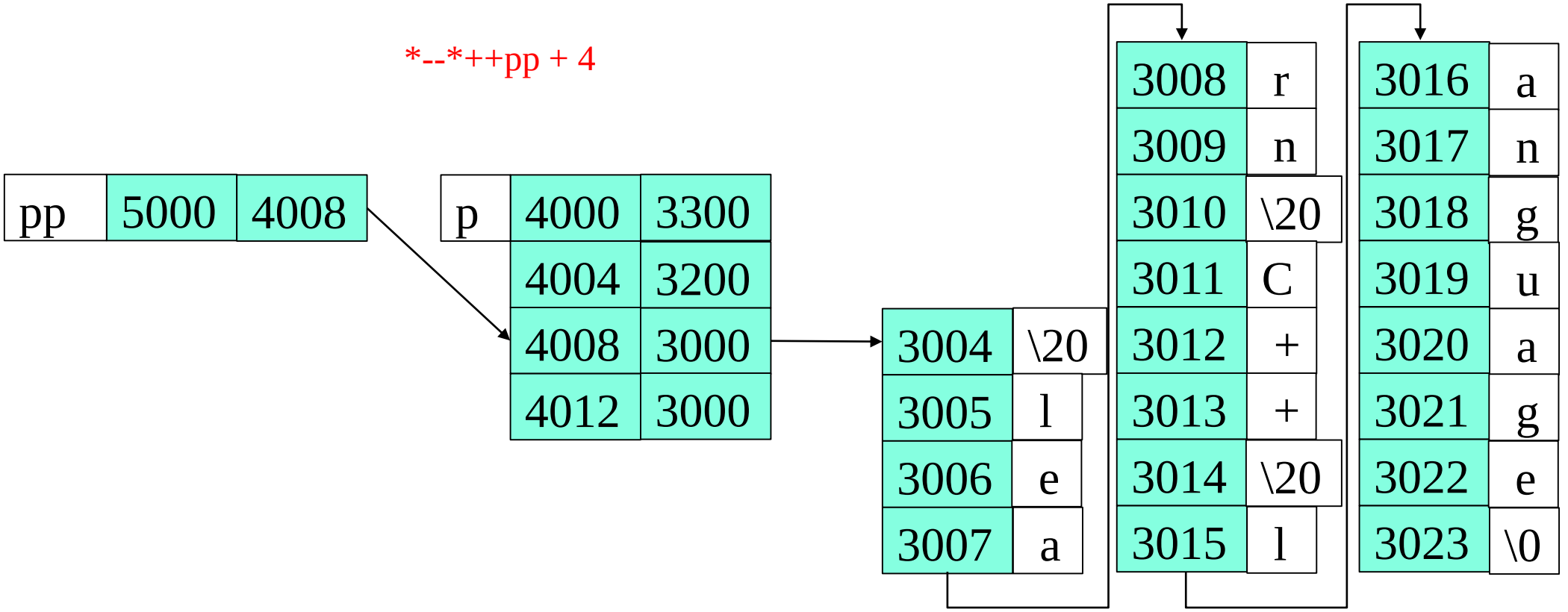


cout << (*--*++pp+4);

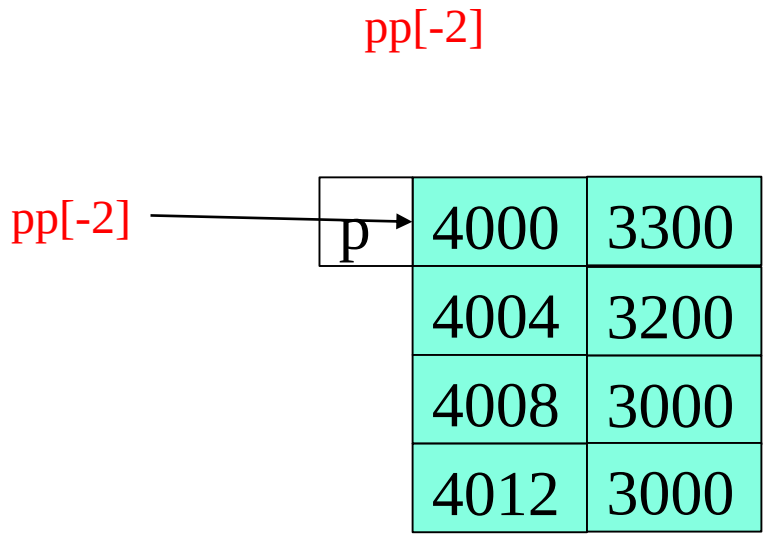
*--*++pp



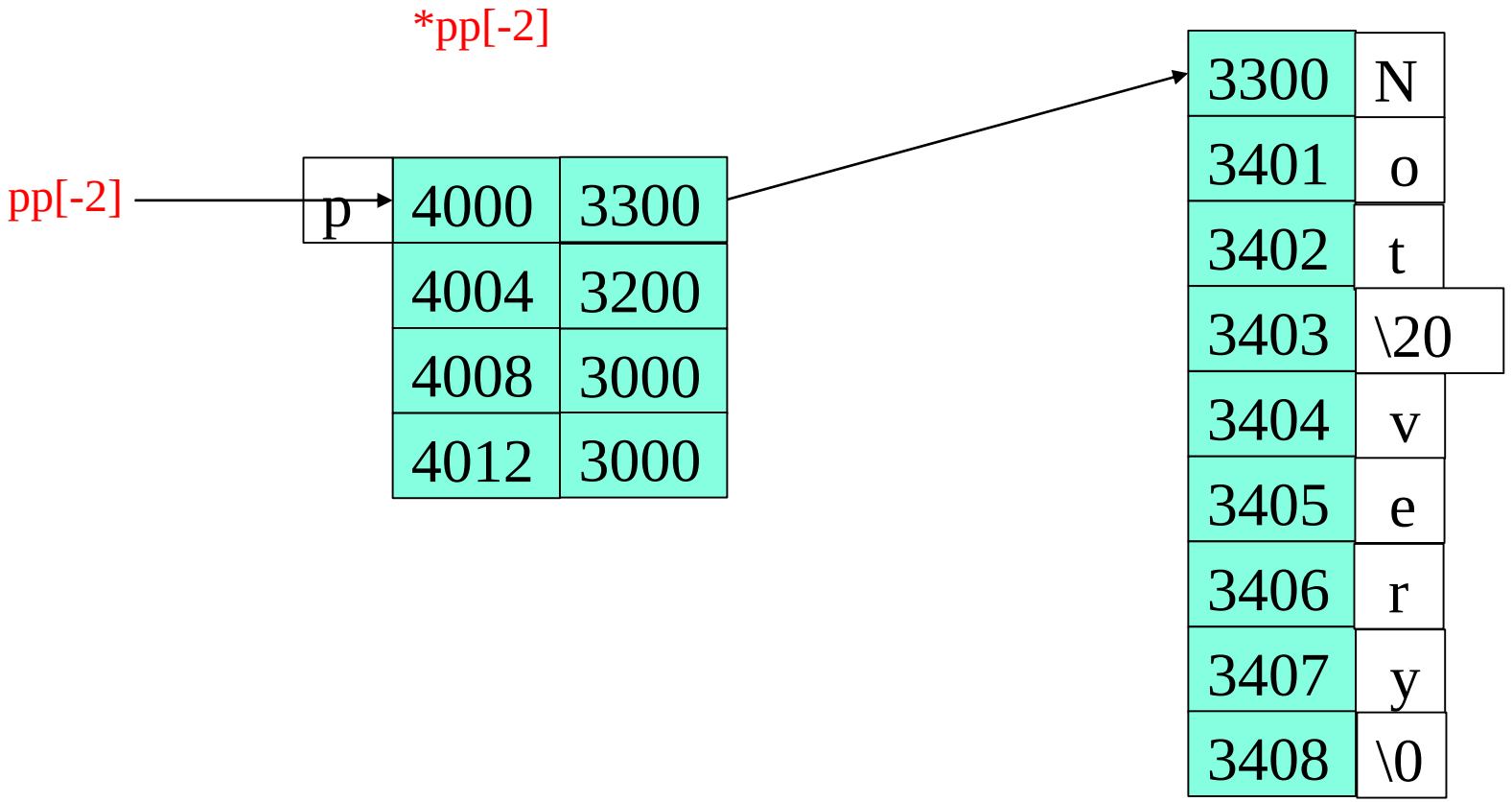
cout << (*--*++pp+4);


*--*++pp + 4
pp
5000
4008
p
4000
3300
4004
3200
4008
3000
4012
3000
3004
\20
3005
l
3006
e
3007
a
3008
r
3009
n
3010
\20
3011
C
3012
+
3013
+
3014
\20
3015
l
3016
a
3017
n
3018
g
3019
u
3020
a
3021
g
3022
e
3023
\0

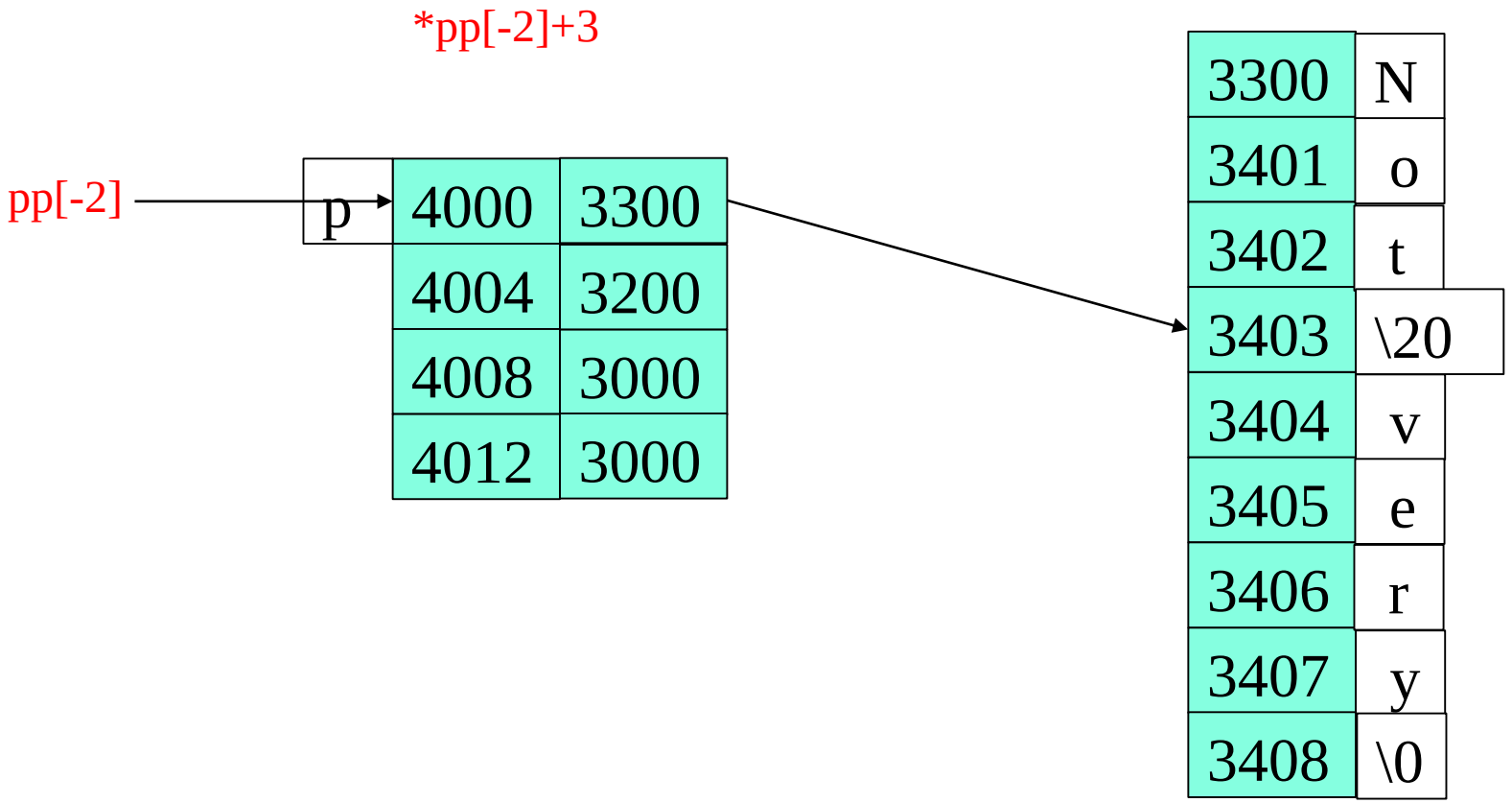
```
cout << (*pp[-2]+3);
```



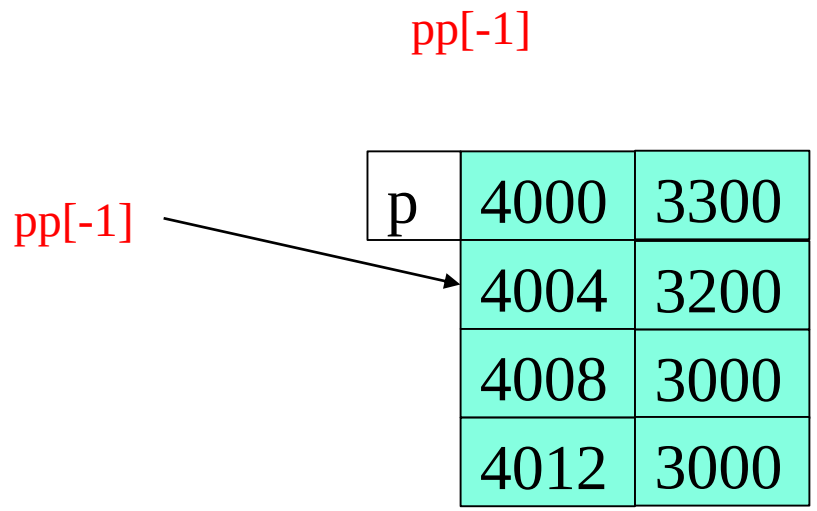
cout << (*pp[-2]+3);


*pp[-2]
pp[-2]
p
4000
3300
4004
3200
4008
3000
4012
3000
3300
N
3401
o
3402
t
3403
\20
3404
v
3405
e
3406
r
3407
y
3408
\0

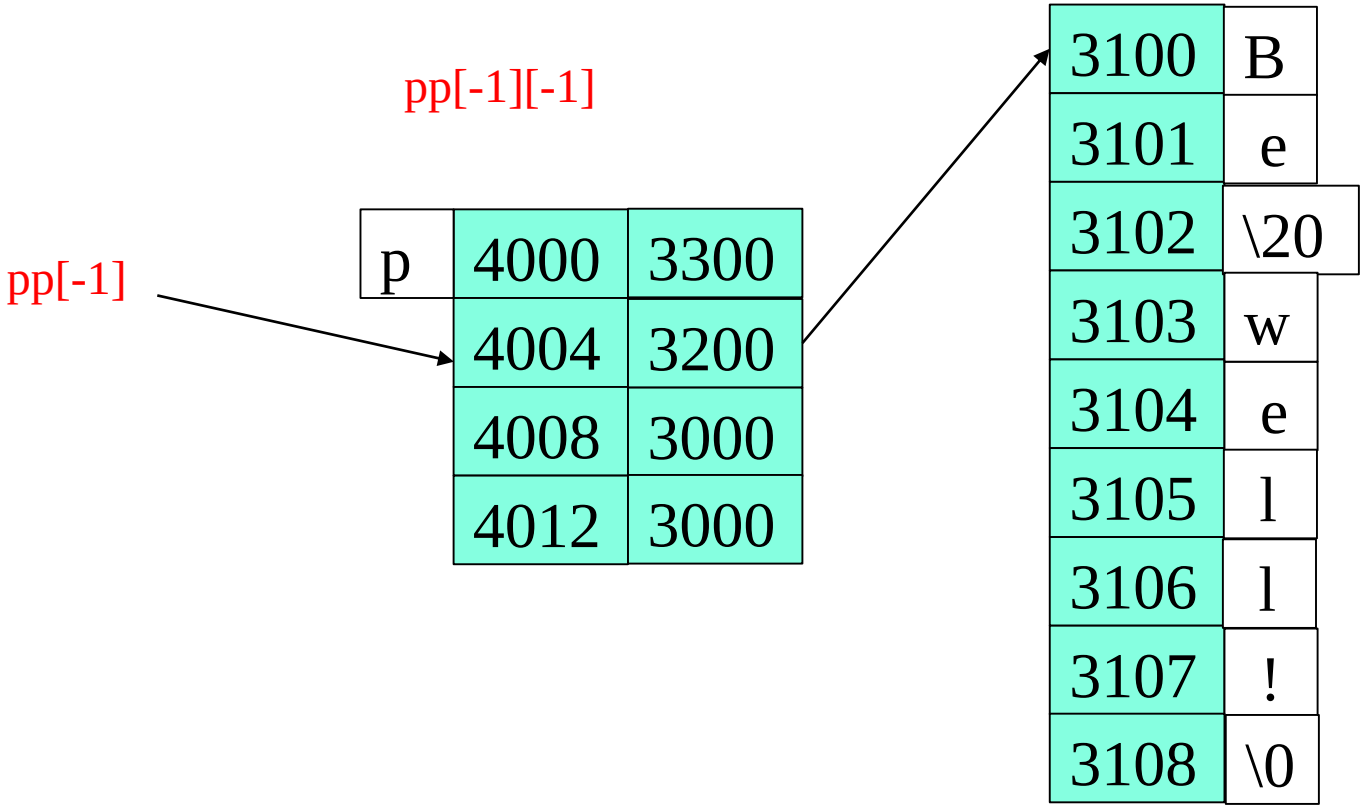
cout << (*pp[-2]+3);


*pp[-2]+3
pp[-2]
p
4000
3300
4004
3200
4008
3000
4012
3000
3300
N
3401
o
3402
t
3403
\20
3404
v
3405
e
3406
r
3407
y
3408
\0

cout << (pp[-1][-1]+2)



cout << (pp[-1][-1]+2)


pp[-1][-1]
pp[-1]
p
4000
3300
4004
3200
4008
3000
4012
3000
3100
B
3101
e
3102
\20
3103
w
3104
e
3105
l
3106
l
3107
!
3108
\0

之后的程序执行中内存无变化