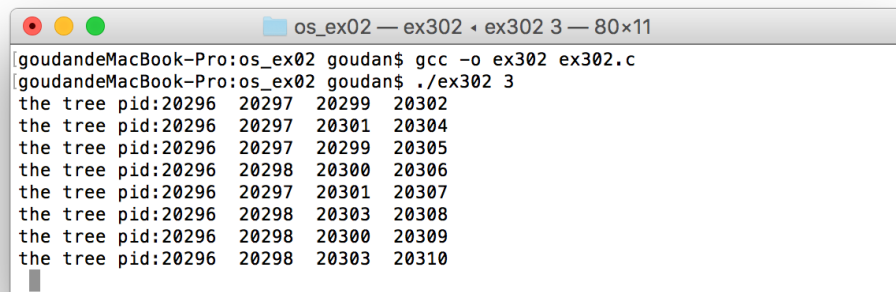


1. With E03_ex1.c

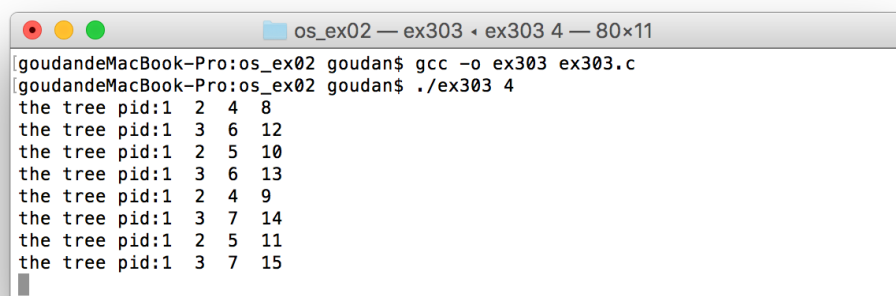
```
os_ex02 — ex301 ◀ ex301 3 — 80×46
[goudandeMacBook-Pro:os_ex02 goudan$ gcc -o ex301 ex301.c ]
[goudandeMacBook-Pro:os_ex02 goudan$ ./ex301 3 ]
the current pid:20185
the left child pid:20186
20186's parent pid is:20185
the right child pid:20187
20187's parent pid is:20185
the current pid:20186
the left child pid:20188
20188's parent pid is:20186
the current pid:20187
the left child pid:20189
20189's parent pid is:20187
the current pid:20188
the right child pid:20190
20190's parent pid is:20186
the current pid:20189
the left child pid:20191
20191's parent pid is:20188
the leaf pid:20191
the right child pid:20192
20192's parent pid is:20187
the current pid:20190
the left child pid:20193
20193's parent pid is:20189
the leaf pid:20193
the right child pid:20194
20194's parent pid is:20188
the leaf pid:20194
the left child pid:20195
20195's parent pid is:20190
the leaf pid:20195
the right child pid:20196
20196's parent pid is:20189
the leaf pid:20196
the current pid:20192
the left child pid:20197
20197's parent pid is:20192
the leaf pid:20197
the right child pid:20198
20198's parent pid is:20190
the leaf pid:20198
the right child pid:20199
20199's parent pid is:20192
the leaf pid:20199
```

2. With E03_ex2.c



```
os_ex02 — ex302 • ex302 3 — 80×11
goudandeMacBook-Pro:os_ex02 goudan$ gcc -o ex302 ex302.c
goudandeMacBook-Pro:os_ex02 goudan$ ./ex302 3
the tree pid:20296 20297 20299 20302
the tree pid:20296 20297 20301 20304
the tree pid:20296 20297 20299 20305
the tree pid:20296 20298 20300 20306
the tree pid:20296 20297 20301 20307
the tree pid:20296 20298 20303 20308
the tree pid:20296 20298 20300 20309
the tree pid:20296 20298 20303 20310
```

3. With E03_ex3.c



```
os_ex02 — ex303 • ex303 4 — 80×11
goudandeMacBook-Pro:os_ex02 goudan$ gcc -o ex303 ex303.c
goudandeMacBook-Pro:os_ex02 goudan$ ./ex303 4
the tree pid:1 2 4 8
the tree pid:1 3 6 12
the tree pid:1 2 5 10
the tree pid:1 3 6 13
the tree pid:1 2 4 9
the tree pid:1 3 7 14
the tree pid:1 2 5 11
the tree pid:1 3 7 15
```