

lab06

```
1 // EE231002 Lab06. Permutations
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3 // Date: Oct. 21, 2019
4
5 #include <stdio.h>
6 #define bool int
7 // Can use typedef
8 #define n 7
9
10 int main(void)
11 {
12     int p[n];           // set
13     int i, j, k;        // index
14     int temp;           // workspace for swap
15     int cout;           // index of permutation
16     bool findj, findk;  // bool whether we find j and k
17
18     for (i = 0; i < n; i++) p[i] = n - i; //assign element value n to 1
19     for (i = 0; i < n; i++) p[i] = n - i; // assign element value n to 1
20     findj = 1;
21     cout = 0;
22     while (findj) {      // end while we cannot find j
23         printf("permutation #d: ", ++cout);
24         for (i = 0; i < n; i++) printf("%d ", p[i]);
25         printf("\n");    // above 3 line output a permutation
26         for (i = n - 2, findj = 0; findj == 0 && i >= 0; i--)
27             for (i = n - 2, findj = 0; findj == 0 && i >= 0; i--)
28                 if (p[i] > p[i + 1]) {
29                     if (p[i] > p[i + 1]) {
30                         j = i;
31                         findj = 1;
32                     }
33                     //find a j then break
34                     // find a j then break
35                 }
36         for (i = n - 1, findk = 0; findk == 0 && i >= 0; i--)
37             for (i = n - 1, findk = 0; findk == 0 && i >= 0; i--)
38                 if (p[j] > p[i]){
39                     if (p[j] > p[i]) {
40                         k = i;
41                         findk = 1;
42                     }
43                     // find a k then break
44                 }
45         temp = p[k];
46         // swap p[j] and p[k]
47         p[k] = p[j];
48         p[j] = temp;
49         for (i = 1; i <= (n - j - 1) / 2; i++){
50             for (i = 1; i <= (n - j - 1) / 2; i++) {
51                 temp = p[n - i];
52                 // reverse j + 1 to n - 1
53                 p[n - i] = p[j + i];
54                 p[j + i] = temp;
55             }
56         }
57     }
```

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41     }  
42 }  
43 printf("  Total number of permutations is %d\n", cout);  
44 return 0;  
45 }
```

[Format] can be improved.

[Coding] lab06.c spelling errors: asign(1)

Score: 92