```c
//An implementation of Algorithms 6.1 and 6.2 (Quick Sort)
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#include <stdio.h>
#define n 10
#define SWAP(x,y) {typeof(x) tmp; tmp=x; x=y; y=tmp;} // xとyの値を交換する

void show_array(int A[], int l, int r) {//配列の中身を表示する関数
  int i;
  printf("[");
  for (i=l;i<=r;i++) {
    printf(" %2d",A[i]);
    if(i<r) printf(",");
  }
  printf("]\n");
}

int partition(int D[], int left, int right) {
  int i,j,k;
  //k= left;
  //SWAP(D[k],D[right]);

  i = left; j = right-1;
  while(i<j) {
    while(D[i]<D[right]) i++;
    while(D[right]<=D[j] && i<=j) j--;
    if(i<j) SWAP(D[i],D[j]);
  }
  if(D[i]>=D[right]) SWAP(D[i],D[right]); //<-教科書と違うので注意
  return i;
}

void quicksort(int D[], int left, int right) {
  int pivot_index;
  printf("----------------\n");
  show_array(D,left,right);
  pivot_index=partition(D,left,right);
  printf("left =%d, right =%d, pivot_index = %d\n",left,right,pivot_index);
  show_array(D,left,right);

  if(left<pivot_index-1) quicksort(D,left,pivot_index-1);   //<-教科書と違うので注意
  if(pivot_index+1<right) quicksort(D,pivot_index+1,right);//<-教科書と違うので注意
}

main(){
  //int D[n]={17,39,1,9,5,24,2,11,23,6};
  //int D[n]={1,2,3,4,5,6,7,8,9,10};
  int D[n]={10,9,8,7,6,5,4,3,2,1};

  show_array(D,0,n-1);

  quicksort(D,0,n-1);

  printf("----------------\n");
  show_array(D,0,n-1);
}
```