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1: #include<stdio.h>
2:
3: void printArray(int* A, int n){
4:     for (int i = 0; i < n; i++)
5:     {
6:         printf("%d ", A[i]);
7:     }
8:     printf("\n");
9: }
10: void bubbleSort(int *A, int n){
11:     int temp;
12:     int isSorted = 0;
13:     for (int i = 0; i < n-1; i++) // For number of pass
14:     {
15:         printf("Working on pass number %d\n", i+1);
16:         for (int j = 0; j < n-1-i ; j++) // For comparison in each pass
17:         {
18:             if(A[j]>A[j+1]){
19:                 temp = A[j];
20:                 A[j] = A[j+1];
21:                 A[j+1] = temp;
22:             }
23:         }
24:     }
25: }
26:
27: void bubbleSortAdaptive(int *A, int n){
28:     int temp;
29:     int isSorted = 0;
30:     for (int i = 0; i < n-1; i++) // For number of pass
31:     {
32:         printf("Working on pass number %d\n", i+1);
33:         isSorted = 1;
34:         for (int j = 0; j < n-1-i ; j++) // For comparison in each pass
35:         {
36:             if(A[j]>A[j+1]){
37:                 temp = A[j];
38:                 A[j] = A[j+1];
39:                 A[j+1] = temp;

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40:             isSorted = 0;
41:         }
42:     }
43:     if(isSorted){
44:         return;
45:     }
46: }
47: }
48:
49: int main(){
50:     // int A[] = {12, 54, 65, 7, 23, 9};
51:     int A[] = {1, 2, 5, 6, 12, 54, 625, 7, 23, 9, 987};
52:     // int A[] = {1, 2, 3, 4, 5, 6};
53:     int n = 11;
54:     printArray(A, n); // Printing the array before sorting
55:     bubbleSort(A, n); // Function to sort the array
56:     printArray(A, n); // Printing the array before sorting
57:     return 0;
58: }
59:
```