

AUTOMATICALLY GENERATED LATEX

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0.1 INPUT CODE

```
1 bubbleSort(A[N])
2 {
3     do
4     {
5         t = 0;
6         for (i=1; i < N-1; i = i+1)
7         {
8             if (A[i] > A[i+1])
9             {
10                 x = A[i];
11                 A[i] = A[i+1];
12                 A[i+1] = x;
13                 t = 1;
14             }
15         }
16     }
17     while (t == 1);
18     return A;
19 }
```

0.2 CONVERTED LINES

$$\text{bubbleSort}(A[N]) = L_2(A, N, t, i, x)$$

$$L_2(A, N, t, i, x) = L_3(A, N, t, i, x)$$

$$L_3(A, N, t, i, x) = L_4(A, N, t, i, x)$$

$$L_4(A, N, t, i, x) = L_5(A, N, t, i, x)$$

$$L_5(A, N, t, i, x) = L_6(A, N, 0, i, x)$$

$$L_6(A, N, t, i, x) = F_1(A, N, t, 1, x)$$

$$F_1(A, N, t, i, x) = \Delta_{i < N-1} (L_7(A, N, t, i, x), L_{16}(A, N, t, i, x))$$

$$L_7(A, N, t, i, x) = L_8(A, N, t, i, x)$$

$$L_8(A, N, t, i, x) = \Delta_{A_i > A_{i+1}} (L_9(A, N, t, i, x), L_{14}(A, N, t, i, x))$$

$$L_9(A, N, t, i, x) = L_{10}(A, N, t, i, x)$$

$$L_{10}(A, N, t, i, x) = L_{11}(A, N, t, i, A_i)$$

$$L_{11}(A, N, t, i, x) = L_{12}(|A + \delta_N(i)(A_{i+1} - A_i)|, N, t, i, x)$$

$$L_{12}(A, N, t, i, x) = L_{13}(|A + \delta_N(i+1)(x - A_{i+1})|, N, t, i, x)$$

$$L_{13}(A, N, t, i, x) = L_{14}(A, N, 1, i, x)$$

$$L_{14}(A, N, t, i, x) = L_{15}(A, N, t, i, x)$$

$$L_{15}(A, N, t, i, x) = F_1(A, N, t, i+1, x)$$

$$L_{16}(A, N, t, i, x) = L_{17}(A, N, t, i, x)$$

$$L_{17}(A, N, t, i, x) = W_1(A, N, t, i, x)$$

$$W_1(A, N, t, i, x) = \Delta_{t==1} (L_3(A, N, t, i, x), L_{18}(A, N, t, i, x))$$

$$L_{18}(A, N, t, i, x) = A$$

$$L_{19}(A, N, t, i, x) = \infty$$

0.3 SQUISHED LINES

$$\text{bubbleSort}(A[N]) = F_1(A, N, 0, 1, x)$$

$$F_1(A, N, t, i, x)$$

$$= \Delta_{i < N-1} (\Delta_{A_i > A_{i+1}} (F_1(|A + \delta_N(i)(A_{i+1} - |A + \delta_N(i)(A_{i+1} - A_i)|_i) + \delta_N(i+1)(A_i - A_{i+1})|, N, 1, i+1, A_i), F_1(A,$$

$$W_1(A, N, t, i, x) = \Delta_{t==1} (F_1(A, N, 0, 1, x), A)$$

0.4 CONVERTED CODE

```
1 function bubbleSort(A[N]) {
2     return F1(A,N,0,1,x);
3 }
4 function F1(A,N,t,i,x) {
5     return (i < N-1) ? (A_{i} > A_{i+1}) ? F1( | | A + \delta_{N}(i)
      (A_{i+1} - | A + \delta_{N}(i)(A_{i+1} - A_{i})| _{i})| + \
      delta_{N}(i+1)(A_{i} - A_{i+1})| ,N,1,i+1,A_{i}) : F1(A,N,t,i
      +1,x) : W1(A,N,t,i,x);
6 }
7 function W1(A,N,t,i,x) {
8     return (t == 1) ? F1(A,N,0,1,x) : A;
9 }
```