

1.2/Shell.h

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1
2
3 #ifndef SHELL_H
4 #define SHELL_H
5
6 #include <stdio.h>
7 #include <stdlib.h>
8 #include <time.h>
9
10 //Medidas de Complexidade
11 int comp; //Num. de comparacoes
12 int mov; //Num. de movimentacoes
13
14 int* copiaVetorShell(int* v, int n){
15     int i;
16     int *v2;
17     v2 = (int*) malloc (n*sizeof(int));
18     for(i=0; i<n; i++) v2[i] = v[i];
19     return v2;
20 }
21 void imprimeVetorShell(int* v, int n){
22     int i, prim = 1;
23     printf("[");
24     for(i=0; i<n; i++)
25         if(prim){ printf("%d", v[i]); prim = 0; }
26         else printf(", %d", v[i]);
27     printf("]\n");
28 }
29
30 void preencheAleatorioShell(int* v, int n, int ini, int fim){
31     int i;
32     for(i=0; i<n; i++)
33         v[i] = ini + rand() % (fim-ini + 1);
34 }
35
36 void trocaShell(int* a, int *b){
37     int aux = *a;
38     *a = *b;
39     *b = aux;
40 }
41
42
43 void ShellSort(int *v, int n) {
44     int i, j, atual;
45     int h = 1;
46     while(h < n) h = 3*h+1;
47     while (h > 0) {
48         for(i = h; i < n; i++) {
49             atual = v[i];
50             j = i;
51             while (j > h-1 && atual >= v[j - h]) {
52                 v[j] = v[j - h];
53                 j = j - h;
54             }
55             v[j] = atual;
56         }
57         h = h/3;
```

```
58 |     }  
59 | }  
60 |  
61 | #endif
```