

TESTE & CONFIABILIDADE DE SISTEMAS

INTEGRANTES: Leonardo Severino
PROFESSOR(A): Rafael Garibotti
SEMESTRE: 2021/02
TURMA: 030

Trabalho Final

1. Classes de Equivalência

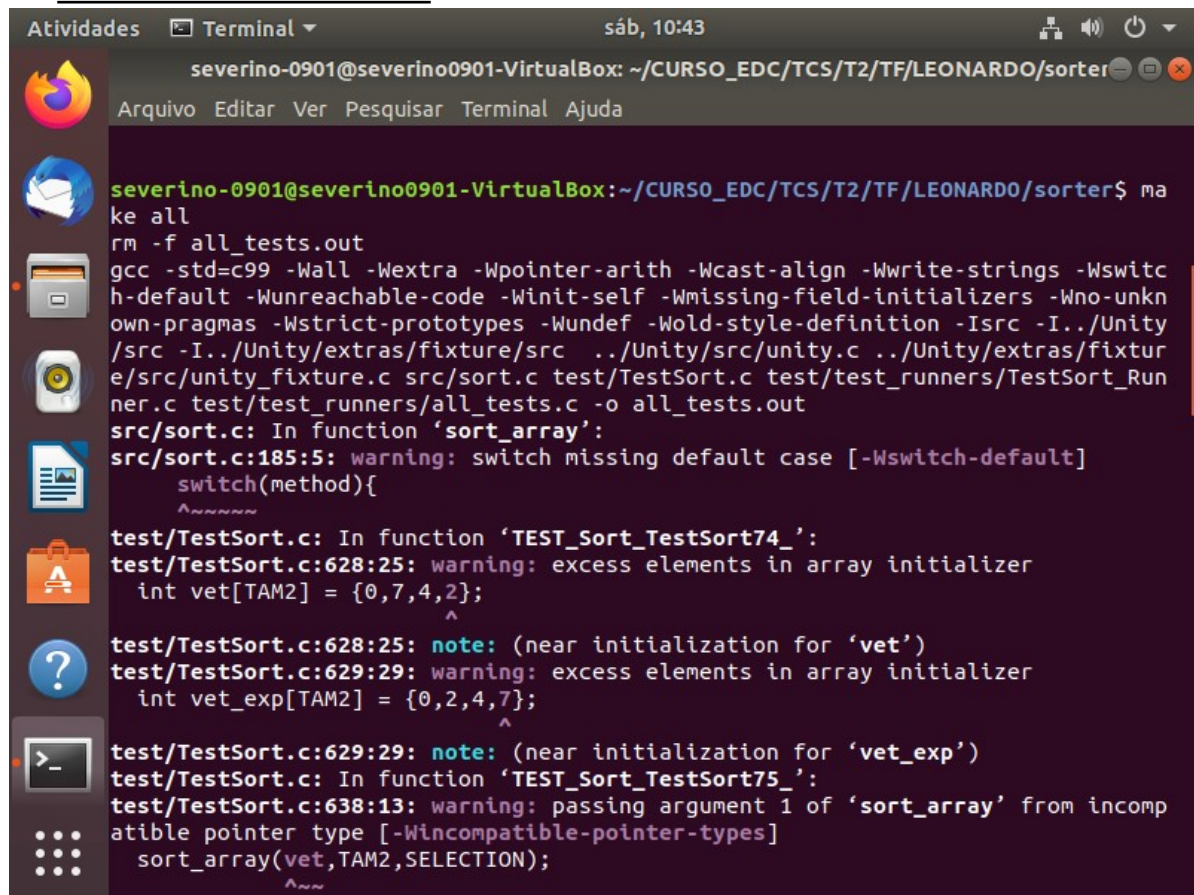
VARIÁVEL	CLASSES VÁLIDAS	CLASSES INVÁLIDAS
array	números inteiros	não números inteiros
size	números inteiros equivalentes à quantidade de dados presentes em 'array'	números inteiros maiores ou menores que a quantidade de dados presentes em 'array'
method	números inteiros equivalentes a 0,1,2,3,4 & 5	números inteiros diferentes de 0,1,2,3,4 & 5

Figura_01 – Classes de Equivalência

2. Tabelas de Planejamento

NÚMERO DO TESTE	NOME DO TESTE	CASOS DE TESTE
1	TestSort1	{{(47,37,46,31,47),5,SELECTION},{PASS}}
2	TestSort2	{{(47,37,46,31,47),5,INSERTION},{PASS}}
3	TestSort3	{{(47,37,46,31,47),5,SHELL},{PASS}}
4	TestSort4	{{(47,37,46,31,47),5,HEAP},{PASS}}
5	TestSort5	{{(47,37,46,31,47),5,MERGE},{PASS}}
6	TestSort6	{{(47,37,46,31,47),5,UNDEFINED},{FAIL}}
7	TestSort7	{{(-47,-37,-46,-31,-47),5,SELECTION},{PASS}}
8	TestSort8	{{(-47,-37,-46,-31,-47),5,INSERTION},{PASS}}
9	TestSort9	{{(-47,-37,-46,-31,-47),5,SHELL},{PASS}}
10	TestSort10	{{(-47,-37,-46,-31,-47),5,HEAP},{PASS}}
11	TestSort11	{{(-47,-37,-46,-31,-47),5,MERGE},{PASS}}
12	TestSort12	{{(-47,-37,-46,-31,-47),5,UNDEFINED},{FAIL}}
13	TestSort13	{{(31,37,46,47,47),5,SELECTION},{PASS}}
14	TestSort14	{{(31,37,46,47,47),5,INSERTION},{PASS}}
15	TestSort15	{{(31,37,46,47,47),5,SHELL},{PASS}}
16	TestSort16	{{(31,37,46,47,47),5,HEAP},{PASS}}
17	TestSort17	{{(31,37,46,47,47),5,MERGE},{PASS}}
18	TestSort18	{{(31,37,46,47,47),5,UNDEFINED},{PASS}}
19	TestSort19	{{(-47,-47,-46,-37,-31),5,SELECTION},{PASS}}
20	TestSort20	{{(-47,-47,-46,-37,-31),5,INSERTION},{PASS}}
21	TestSort21	{{(-47,-47,-46,-37,-31),5,SHELL},{PASS}}
22	TestSort22	{{(-47,-47,-46,-37,-31),5,HEAP},{PASS}}
23	TestSort23	{{(-47,-47,-46,-37,-31),5,MERGE},{PASS}}
24	TestSort24	{{(-47,-47,-46,-37,-31),5,UNDEFINED},{PASS}}
25	TestSort25	{{(47,47,46,37,31),5,SELECTION},{PASS}}
26	TestSort26	{{(47,47,46,37,31),5,INSERTION},{PASS}}
27	TestSort27	{{(47,47,46,37,31),5,SHELL},{PASS}}
28	TestSort28	{{(47,47,46,37,31),5,HEAP},{PASS}}
29	TestSort29	{{(47,47,46,37,31),5,MERGE},{PASS}}
30	TestSort30	{{(47,47,46,37,31),5,UNDEFINED},{FAIL}}
31	TestSort31	{{(-31,-37,-46,-47,-47),5,SELECTION},{PASS}}
32	TestSort32	{{(-31,-37,-46,-47,-47),5,INSERTION},{PASS}}
33	TestSort33	{{(-31,-37,-46,-47,-47),5,SHELL},{PASS}}
34	TestSort34	{{(-31,-37,-46,-47,-47),5,HEAP},{PASS}}
35	TestSort35	{{(-31,-37,-46,-47,-47),5,MERGE},{PASS}}
36	TestSort36	{{(-31,-37,-46,-47,-47),5,UNDEFINED},{FAIL}}
37	TestSort37	{{(57,98,70,71,2,22,14,65,2,6),10,SELECTION},{PASS}}
38	TestSort38	{{(57,98,70,71,2,22,14,65,2,6),10,INSERTTION},{PASS}}
39	TestSort39	{{(57,98,70,71,2,22,14,65,2,6),10,SHELL},{PASS}}
40	TestSort40	{{(57,98,70,71,2,22,14,65,2,6),10,HEAP},{PASS}}
41	TestSort41	{{(57,98,70,71,2,22,14,65,2,6),10,MERGE},{PASS}}
42	TestSort42	{{(57,98,70,71,2,22,14,65,2,6),10,UNDEFINED},{FAIL}}
43	TestSort43	{{(57,98,70,71,2,22,14,65,2,6),10,SELECTION},{PASS}}
44	TestSort44	{{(-57,-98,-70,-71,-2,-22,-14,-65,-2,-6),10,INSERTTION},{PASS}}
45	TestSort45	{{(-57,-98,-70,-71,-2,-22,-14,-65,-2,-6),10,SHELL},{PASS}}
46	TestSort46	{{(-57,-98,-70,-71,-2,-22,-14,-65,-2,-6),10,HEAP},{PASS}}
47	TestSort47	{{(-57,-98,-70,-71,-2,-22,-14,-65,-2,-6),10,MERGE},{PASS}}
48	TestSort48	{{(-57,-98,-70,-71,-2,-22,-14,-65,-2,-6),10,UNDEFINED},{FAIL}}
49	TestSort49	{{(2,2,6,14,22,57,65,70,71,98),10,SELECTION},{PASS}}
50	TestSort50	{{(2,2,6,14,22,57,65,70,71,98),10,INSERTTION},{PASS}}
51	TestSort51	{{(2,2,6,14,22,57,65,70,71,98),10,SHELL},{PASS}}
52	TestSort52	{{(2,2,6,14,22,57,65,70,71,98),10,HEAP},{PASS}}
53	TestSort53	{{(2,2,6,14,22,57,65,70,71,98),10,MERGE},{PASS}}
54	TestSort54	{{(2,2,6,14,22,57,65,70,71,98),10,UNDEFINED},{PASS}}
55	TestSort55	{{(2,2,6,14,22,57,65,70,71,98),10,SELECTION},{PASS}}
56	TestSort56	{{(-98,-71,-70,-65,-57,-22,-14,-6,-2,-2),10,INSERTTION},{PASS}}
57	TestSort57	{{(-98,-71,-70,-65,-57,-22,-14,-6,-2,-2),10,SHELL},{PASS}}
58	TestSort58	{{(-98,-71,-70,-65,-57,-22,-14,-6,-2,-2),10,HEAP},{PASS}}
59	TestSort59	{{(-98,-71,-70,-65,-57,-22,-14,-6,-2,-2),10,MERGE},{PASS}}
60	TestSort60	{{(-98,-71,-70,-65,-57,-22,-14,-6,-2,-2),10,UNDEFINED},{PASS}}
61	TestSort61	{{(98,71,70,65,57,22,14,6,2,2),10,SELECTION},{PASS}}
62	TestSort62	{{(98,71,70,65,57,22,14,6,2,2),10,INSERTTION},{PASS}}
63	TestSort63	{{(98,71,70,65,57,22,14,6,2,2),10,SHELL},{PASS}}
64	TestSort64	{{(98,71,70,65,57,22,14,6,2,2),10,HEAP},{PASS}}
65	TestSort65	{{(98,71,70,65,57,22,14,6,2,2),10,MERGE},{PASS}}
66	TestSort66	{{(98,71,70,65,57,22,14,6,2,2),10,UNDEFINED},{FAIL}}
67	TestSort67	{{(-2,-2,-6,-14,-22,-57,-65,-70,-71,-98),10,SELECTION},{PASS}}
68	TestSort68	{{(-2,-2,-6,-14,-22,-57,-65,-70,-71,-98),10,INSERTTION},{PASS}}
69	TestSort69	{{(-2,-2,-6,-14,-22,-57,-65,-70,-71,-98),10,SHELL},{PASS}}
70	TestSort70	{{(-2,-2,-6,-14,-22,-57,-65,-70,-71,-98),10,HEAP},{PASS}}
71	TestSort71	{{(-2,-2,-6,-14,-22,-57,-65,-70,-71,-98),10,MERGE},{PASS}}
72	TestSort72	{{(-2,-2,-6,-14,-22,-57,-65,-70,-71,-98),10,UNDEFINED},{FAIL}}
73	TestSort73	{{(0,7,4),3,10},{FAIL}}
74	TestSort74	{{(0,7,4,2),10,SELECTION},{FAIL}}
75	TestSort75	{{('a','v','d'),10,SELECTION},{FAIL}}

3. Testes Unitários



The image shows a terminal window titled "Atividades Terminal" with the user "severino-0901" at the host "severino0901-VirtualBox". The current directory is "~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter". The terminal output shows the execution of the following commands and their results:

```

severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$ make all
rm -f all_tests.out
gcc -std=c99 -Wall -Wextra -Wpointer-arith -Wcast-align -Wwrite-strings -Wswitch-default -Wunreachable-code -Winit-self -Wmissing-field-initializers -Wno-unknown-pragmas -Wstrict-prototypes -Wundef -Wold-style-definition -Isrc -I../Unity/src -I../Unity/extras/fixture/src ../Unity/src/unity.c ../Unity/extras/fixture/src/unity_fixture.c src/sort.c test/TestSort.c test/test_runners/TestSort_Runner.c test/test_runners/all_tests.c -o all_tests.out
src/sort.c: In function 'sort_array':
src/sort.c:185:5: warning: switch missing default case [-Wswitch-default]
    switch(method){
    ^
test/TestSort.c: In function 'TEST_Sort_TestSort74_':
test/TestSort.c:628:25: warning: excess elements in array initializer
    int vet[TAM2] = {0,7,4,2};
                        ^
test/TestSort.c:628:25: note: (near initialization for 'vet')
test/TestSort.c:629:29: warning: excess elements in array initializer
    int vet_exp[TAM2] = {0,2,4,7};
                            ^
test/TestSort.c:629:29: note: (near initialization for 'vet_exp')
test/TestSort.c: In function 'TEST_Sort_TestSort75_':
test/TestSort.c:638:13: warning: passing argument 1 of 'sort_array' from incompatible pointer type [-Wincompatible-pointer-types]
    sort_array(vet,TAM2,SELECTION);
               ^
  
```


Atividades Terminal sáb, 10:44 severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter

```
Arquivo Editar Ver Pesquisar Terminal Ajuda
sort_array(vet,TAM2,SELECTION);

In file included from test/TestSort.c:1:0:
src/sort.h:43:6: note: expected 'int *' but argument is of type 'char *'
int* sort_array(int *vet, int size, int method);

./all_tests.out -v
Unity test run 1 of 1
TEST(Sort, TestSort1) PASS
TEST(Sort, TestSort2) PASS
TEST(Sort, TestSort3) PASS
TEST(Sort, TestSort4) PASS
TEST(Sort, TestSort5) PASS
TEST(Sort, TestSort7) PASS
TEST(Sort, TestSort8) PASS
TEST(Sort, TestSort9) PASS
TEST(Sort, TestSort10) PASS
TEST(Sort, TestSort11) PASS
TEST(Sort, TestSort13) PASS
TEST(Sort, TestSort14) PASS
TEST(Sort, TestSort15) PASS
TEST(Sort, TestSort16) PASS
TEST(Sort, TestSort17) PASS
TEST(Sort, TestSort18) PASS
TEST(Sort, TestSort19) PASS
TEST(Sort, TestSort20) PASS
TEST(Sort, TestSort21) PASS
TEST(Sort, TestSort22) PASS
TEST(Sort, TestSort23) PASS
```

Atividades Terminal sáb, 10:45 severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter

```
Arquivo Editar Ver Pesquisar Terminal Ajuda
TEST(Sort, TestSort23) PASS
TEST(Sort, TestSort24) PASS
TEST(Sort, TestSort25) PASS
TEST(Sort, TestSort26) PASS
TEST(Sort, TestSort27) PASS
TEST(Sort, TestSort28) PASS
TEST(Sort, TestSort29) PASS
TEST(Sort, TestSort31) PASS
TEST(Sort, TestSort32) PASS
TEST(Sort, TestSort33) PASS
TEST(Sort, TestSort34) PASS
TEST(Sort, TestSort35) PASS
TEST(Sort, TestSort37) PASS
TEST(Sort, TestSort38) PASS
TEST(Sort, TestSort39) PASS
TEST(Sort, TestSort40) PASS
TEST(Sort, TestSort41) PASS
TEST(Sort, TestSort43) PASS
TEST(Sort, TestSort44) PASS
TEST(Sort, TestSort46) PASS
TEST(Sort, TestSort47) PASS
TEST(Sort, TestSort49) PASS
TEST(Sort, TestSort50) PASS
TEST(Sort, TestSort51) PASS
TEST(Sort, TestSort52) PASS
TEST(Sort, TestSort53) PASS
TEST(Sort, TestSort54) PASS
TEST(Sort, TestSort55) PASS
TEST(Sort, TestSort56) PASS
```

```
Atividades Terminal sáb, 10:45
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
Arquivo Editar Ver Pesquisar Terminal Ajuda
TEST(Sort, TestSort56) PASS
TEST(Sort, TestSort57) PASS
TEST(Sort, TestSort58) PASS
TEST(Sort, TestSort59) PASS
TEST(Sort, TestSort60) PASS
TEST(Sort, TestSort61) PASS
TEST(Sort, TestSort62) PASS
TEST(Sort, TestSort63) PASS
TEST(Sort, TestSort64) PASS
TEST(Sort, TestSort65) PASS
TEST(Sort, TestSort67) PASS
TEST(Sort, TestSort68) PASS
TEST(Sort, TestSort69) PASS
TEST(Sort, TestSort70) PASS
TEST(Sort, TestSort71) PASS
TEST(Sort, TestSort6)test/TestSort.c:69::FAIL: Element 0 Expected 31 Was 47
TEST(Sort, TestSort12)test/TestSort.c:118::FAIL: Element 1 Expected -47 Was -37
TEST(Sort, TestSort30)test/TestSort.c:266::FAIL: Element 0 Expected 31 Was 47
TEST(Sort, TestSort36)test/TestSort.c:315::FAIL: Element 0 Expected -47 Was -31
TEST(Sort, TestSort42)test/TestSort.c:367::FAIL: Element 0 Expected 2 Was 57
TEST(Sort, TestSort48)test/TestSort.c:416::FAIL: Element 0 Expected -98 Was -57
TEST(Sort, TestSort66)test/TestSort.c:564::FAIL: Element 0 Expected 2 Was 98
TEST(Sort, TestSort72)test/TestSort.c:613::FAIL: Element 0 Expected -98 Was -2
TEST(Sort, TestSort73)test/TestSort.c:623::FAIL: Element 1 Expected 4 Was 7
TEST(Sort, TestSort74)test/TestSort.c:631::FAIL: Element 0 Expected 0 Was -1407
689728
TEST(Sort, TestSort75)test/TestSort.c:639::FAIL: Element 0 Expected 7758890 Was
710585368
```

```
Atividades Terminal sáb, 10:45
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
Arquivo Editar Ver Pesquisar Terminal Ajuda
TEST(Sort, TestSort63) PASS
TEST(Sort, TestSort64) PASS
TEST(Sort, TestSort65) PASS
TEST(Sort, TestSort67) PASS
TEST(Sort, TestSort68) PASS
TEST(Sort, TestSort69) PASS
TEST(Sort, TestSort70) PASS
TEST(Sort, TestSort71) PASS
TEST(Sort, TestSort6)test/TestSort.c:69::FAIL: Element 0 Expected 31 Was 47
TEST(Sort, TestSort12)test/TestSort.c:118::FAIL: Element 1 Expected -47 Was -37
TEST(Sort, TestSort30)test/TestSort.c:266::FAIL: Element 0 Expected 31 Was 47
TEST(Sort, TestSort36)test/TestSort.c:315::FAIL: Element 0 Expected -47 Was -31
TEST(Sort, TestSort42)test/TestSort.c:367::FAIL: Element 0 Expected 2 Was 57
TEST(Sort, TestSort48)test/TestSort.c:416::FAIL: Element 0 Expected -98 Was -57
TEST(Sort, TestSort66)test/TestSort.c:564::FAIL: Element 0 Expected 2 Was 98
TEST(Sort, TestSort72)test/TestSort.c:613::FAIL: Element 0 Expected -98 Was -2
TEST(Sort, TestSort73)test/TestSort.c:623::FAIL: Element 1 Expected 4 Was 7
TEST(Sort, TestSort74)test/TestSort.c:631::FAIL: Element 0 Expected 0 Was -1407
689728
TEST(Sort, TestSort75)test/TestSort.c:639::FAIL: Element 0 Expected 7758890 Was
710585368
-----
74 Tests 11 Failures 0 Ignored
FAIL
makefile:77: recipe for target 'run' failed
make: [run] Error 11 (ignored)
severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$
```



```
Atividades Terminal sáb, 10:46
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
Arquivo Editar Ver Pesquisar Terminal Ajuda

severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$ make cov
gcc -std=c99 -Wall -Wextra -Wpointer-arith -Wcast-align -Wwrite-strings -Wswitch-default -Wunreachable-code -Winit-self -Wmissing-field-initializers -Wno-unknown-pragmas -Wstrict-prototypes -Wundef -Wold-style-definition -fprofile-arcs -ftest-coverage -Isrc -I../Unity/src -I../Unity/extras/fixture/src -I../Unity/src/unity.c -I../Unity/extras/fixture/src/unity_fixture.c src/sort.c test/TestSort.c test/test_runners/TestSort_Runner.c test/test_runners/all_tests.c -o all_tests.out
src/sort.c: In function 'sort_array':
src/sort.c:185:5: warning: switch missing default case [-Wswitch-default]
    switch(method){
    ^~~~~~
test/TestSort.c: In function 'TEST_Sort_TestSort74_':
test/TestSort.c:628:25: warning: excess elements in array initializer
    int vet[TAM2] = {0,7,4,2};
                        ^
test/TestSort.c:628:25: note: (near initialization for 'vet')
test/TestSort.c:629:29: warning: excess elements in array initializer
    int vet_exp[TAM2] = {0,2,4,7};
                            ^
test/TestSort.c:629:29: note: (near initialization for 'vet_exp')
test/TestSort.c: In function 'TEST_Sort_TestSort75_':
test/TestSort.c:638:13: warning: passing argument 1 of 'sort_array' from incompatible pointer type [-Wincompatible-pointer-types]
    sort_array(vet,TAM2,SELECTION);
               ^~~~
In file included from test/TestSort.c:1:0:
```

```
Atividades Terminal sáb, 10:47
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
Arquivo Editar Ver Pesquisar Terminal Ajuda

In file included from test/TestSort.c:1:0:
src/sort.h:43:6: note: expected 'int *' but argument is of type 'char *'
    int* sort_array(int *vet, int size, int method);
           ^~~~~~
./all_tests.out
Unity test run 1 of 1
.....test/TestSort.c
:69:TEST(Sort, TestSort6):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:118:TEST(Sort, TestSort12):FAIL: Element 1 Expected -47 Was -37
.test/TestSort.c:266:TEST(Sort, TestSort30):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:315:TEST(Sort, TestSort36):FAIL: Element 0 Expected -47 Was -31
.test/TestSort.c:367:TEST(Sort, TestSort42):FAIL: Element 0 Expected 2 Was 57
.test/TestSort.c:416:TEST(Sort, TestSort48):FAIL: Element 0 Expected -98 Was -57
.test/TestSort.c:564:TEST(Sort, TestSort66):FAIL: Element 0 Expected 2 Was 98
.test/TestSort.c:613:TEST(Sort, TestSort72):FAIL: Element 0 Expected -98 Was -2
.test/TestSort.c:623:TEST(Sort, TestSort73):FAIL: Element 1 Expected 4 Was 7
.test/TestSort.c:631:TEST(Sort, TestSort74):FAIL: Element 0 Expected 0 Was -1403693424
.test/TestSort.c:639:TEST(Sort, TestSort75):FAIL: Element 0 Expected -317730432 Was -2147453340
-----
74 Tests 11 Failures 0 Ignored
FAIL
makefile:63: recipe for target 'cov' failed
```

```
Atividades Terminal sáb, 10:47
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
Arquivo Editar Ver Pesquisar Terminal Ajuda
./all_tests.out
Unity test run 1 of 1
.....test/TestSort.c
:69:TEST(Sort, TestSort6):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:118:TEST(Sort, TestSort12):FAIL: Element 1 Expected -47 Was -3
7
.test/TestSort.c:266:TEST(Sort, TestSort30):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:315:TEST(Sort, TestSort36):FAIL: Element 0 Expected -47 Was -3
1
.test/TestSort.c:367:TEST(Sort, TestSort42):FAIL: Element 0 Expected 2 Was 57
.test/TestSort.c:416:TEST(Sort, TestSort48):FAIL: Element 0 Expected -98 Was -5
7
.test/TestSort.c:564:TEST(Sort, TestSort66):FAIL: Element 0 Expected 2 Was 98
.test/TestSort.c:613:TEST(Sort, TestSort72):FAIL: Element 0 Expected -98 Was -2
.test/TestSort.c:623:TEST(Sort, TestSort73):FAIL: Element 1 Expected 4 Was 7
.test/TestSort.c:631:TEST(Sort, TestSort74):FAIL: Element 0 Expected 0 Was -140
3693424
.test/TestSort.c:639:TEST(Sort, TestSort75):FAIL: Element 0 Expected -317730432
Was -2147453340
-----
74 Tests 11 Failures 0 Ignored
FAIL
makefile:63: recipe for target 'cov' failed
make: *** [cov] Error 11
severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$
```

```
Atividades Terminal sáb, 10:49
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
Arquivo Editar Ver Pesquisar Terminal Ajuda
severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$ ma
ke sanitizer
gcc -g -Wall -Wfatal-errors -fsanitize=address -Isrc -I../Unity/src -I../Unity/
extras/fixture/src ../Unity/src/unity.c ../Unity/extras/fixture/src/unity_fixtu
re.c src/sort.c test/TestSort.c test/test_runners/TestSort_Runner.c test/test_r
unners/all_tests.c -o all_tests.out
test/TestSort.c: In function 'TEST_Sort_TestSort74_':
test/TestSort.c:628:25: warning: excess elements in array initializer
    int vet[TAM2] = {0,7,4,2};
                        ^
test/TestSort.c:628:25: note: (near initialization for 'vet')
test/TestSort.c:629:29: warning: excess elements in array initializer
    int vet_exp[TAM2] = {0,2,4,7};
                        ^
test/TestSort.c:629:29: note: (near initialization for 'vet_exp')
test/TestSort.c: In function 'TEST_Sort_TestSort75_':
test/TestSort.c:638:13: warning: passing argument 1 of 'sort_array' from incomp
atible pointer type [-Wincompatible-pointer-types]
    sort_array(vet,TAM2,SELECTION);
               ^
In file included from test/TestSort.c:1:0:
src/sort.h:43:6: note: expected 'int *' but argument is of type 'char *'
    int* sort_array(int *vet, int size, int method);
           ^
./all_tests.out
Unity test run 1 of 1
.....test/TestSort.c
:69:TEST(Sort, TestSort6):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:118:TEST(Sort, TestSort12):FAIL: Element 1 Expected -47 Was -3
```



```
Atividades Terminal sáb, 10:49
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter

Arquivo Editar Ver Pesquisar Terminal Ajuda
:69:TEST(Sort, TestSort6):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:118:TEST(Sort, TestSort12):FAIL: Element 1 Expected -47 Was -3
7
.test/TestSort.c:266:TEST(Sort, TestSort30):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:315:TEST(Sort, TestSort36):FAIL: Element 0 Expected -47 Was -3
1
.test/TestSort.c:367:TEST(Sort, TestSort42):FAIL: Element 0 Expected 2 Was 57
.test/TestSort.c:416:TEST(Sort, TestSort48):FAIL: Element 0 Expected -98 Was -5
7
.test/TestSort.c:564:TEST(Sort, TestSort66):FAIL: Element 0 Expected 2 Was 98
.test/TestSort.c:613:TEST(Sort, TestSort72):FAIL: Element 0 Expected -98 Was -2
.test/TestSort.c:623:TEST(Sort, TestSort73):FAIL: Element 1 Expected 4 Was 7
=====
==3214==ERROR: AddressSanitizer: stack-buffer-overflow on address 0x7ffeab22380
c at pc 0x561ae954610c bp 0x7ffeab223780 sp 0x7ffeab223770
READ of size 4 at 0x7ffeab22380c thread T0
#0 0x561ae954610b in selection_sort src/sort.c:28
#1 0x561ae95470f8 in sort_array src/sort.c:187
#2 0x561ae955fb50 in TEST_Sort_TestSort74_ test/TestSort.c:630
#3 0x561ae9545112 in UnityTestRunner ../Unity/extras/fixture/src/unity_fixt
ure.c:105
#4 0x561ae955f92b in TEST_Sort_TestSort74_run test/TestSort.c:626
#5 0x561ae9560085 in TEST_Sort_GROUP_RUNNER test/test_runners/TestSort_Runn
er.c:78
#6 0x561ae95600a6 in RunAllTests test/test_runners/all_tests.c:5
#7 0x561ae9544eae in UnityMain ../Unity/extras/fixture/src/unity_fixture.c:
41
#8 0x561ae95600d0 in main test/test_runners/all_tests.c:10
#9 0x7faa26a41bf6 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x2
```

```
Atividades Terminal sáb, 10:50
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter

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#8 0x561ae95600d0 in main test/test_runners/all_tests.c:10
#9 0x7faa26a41bf6 in __libc_start_main (/lib/x86_64-linux-gnu/libc.so.6+0x2
1bf6)
#10 0x561ae95414c9 in _start (/home/severino-0901/CURSO_EDC/TCS/T2/TF/LEONA
RDO/sorter/all_tests.out+0x54c9)

Address 0x7ffeab22380c is located in stack of thread T0 at offset 44 in frame
#0 0x561ae955f942 in TEST_Sort_TestSort74_ test/TestSort.c:627

This frame has 2 object(s):
[32, 44) 'vet' <== Memory access at offset 44 overflows this variable
[96, 108) 'vet_exp'
HINT: this may be a false positive if your program uses some custom stack unwi
nd mechanism or swapcontext
(longjmp and C++ exceptions *are* supported)
SUMMARY: AddressSanitizer: stack-buffer-overflow src/sort.c:28 in selection_sor
t
Shadow bytes around the buggy address:
0x10005563c6b0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c6c0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c6d0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c6e0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c6f0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 f1 f1 f1 f1
=>0x10005563c700: 00[04]f2 f2 f2 f2 f2 f2 00 04 f2 f2 00 00 00 00
0x10005563c710: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c720: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c730: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c740: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c750: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```



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0x10005563c710: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c720: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c730: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c740: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0x10005563c750: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
Shadow byte legend (one shadow byte represents 8 application bytes):
Addressable: 00
Partially addressable: 01 02 03 04 05 06 07
Heap left redzone: fa
Freed heap region: fd
Stack left redzone: f1
Stack mid redzone: f2
Stack right redzone: f3
Stack after return: f5
Stack use after scope: f8
Global redzone: f9
Global init order: f6
Poisoned by user: f7
Container overflow: fc
Array cookie: ac
Intra object redzone: bb
ASan internal: fe
Left alloca redzone: ca
Right alloca redzone: cb
==3214==ABORTING
makefile:68: recipe for target 'sanitizer' failed
make: *** [sanitizer] Error 1
severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$
```

```
Atividades Terminal sáb, 10:51
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
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severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$ ma
ke valgrind
gcc -g -Wall -Wfatal-errors -Isrc -I../Unity/src -I../Unity/extras/fixture/src
../Unity/src/unity.c ../Unity/extras/fixture/src/unity_fixture.c src/sort.c tes
t/TestSort.c test/test_runners/TestSort_Runner.c test/test_runners/all_tests.c
-o all_tests.out
test/TestSort.c: In function 'TEST_Sort_TestSort74_':
test/TestSort.c:628:25: warning: excess elements in array initializer
    int vet[TAM2] = {0,7,4,2};
                        ^
test/TestSort.c:628:25: note: (near initialization for 'vet')
test/TestSort.c:629:29: warning: excess elements in array initializer
    int vet_exp[TAM2] = {0,2,4,7};
                        ^
test/TestSort.c:629:29: note: (near initialization for 'vet_exp')
test/TestSort.c: In function 'TEST_Sort_TestSort75_':
test/TestSort.c:638:13: warning: passing argument 1 of 'sort_array' from incomp
atible pointer type [-Wincompatible-pointer-types]
    sort_array(vet,TAM2,SELECTION);
              ^~~
In file included from test/TestSort.c:1:0:
src/sort.h:43:6: note: expected 'int *' but argument is of type 'char *'
    int* sort_array(int *vet, int size, int method);
    ~~~~~^~~~~~
valgrind --leak-check=full --show-leak-kinds=all ./all_tests.out
==3241== Memcheck, a memory error detector
==3241== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==3241== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
```

```
Atividades Terminal sáb, 10:51
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
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valgrind --leak-check=full --show-leak-kinds=all ./all_tests.out
==3241== Memcheck, a memory error detector
==3241== Copyright (C) 2002-2017, and GNU GPL'd, by Julian Seward et al.
==3241== Using Valgrind-3.13.0 and LibVEX; rerun with -h for copyright info
==3241== Command: ./all_tests.out
==3241==
Unity test run 1 of 1
.....test/TestSort.c
:69:TEST(Sort, TestSort6):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:118:TEST(Sort, TestSort12):FAIL: Element 1 Expected -47 Was -3
7
.test/TestSort.c:266:TEST(Sort, TestSort30):FAIL: Element 0 Expected 31 Was 47
.test/TestSort.c:315:TEST(Sort, TestSort36):FAIL: Element 0 Expected -47 Was -3
1
.test/TestSort.c:367:TEST(Sort, TestSort42):FAIL: Element 0 Expected 2 Was 57
.test/TestSort.c:416:TEST(Sort, TestSort48):FAIL: Element 0 Expected -98 Was -5
7
.test/TestSort.c:564:TEST(Sort, TestSort66):FAIL: Element 0 Expected 2 Was 98
.test/TestSort.c:613:TEST(Sort, TestSort72):FAIL: Element 0 Expected -98 Was -2
.test/TestSort.c:623:TEST(Sort, TestSort73):FAIL: Element 1 Expected 4 Was 7
.test/TestSort.c:631:TEST(Sort, TestSort74):FAIL: Element 0 Expected 0 Was -188
0178600
.test/TestSort.c:639:TEST(Sort, TestSort75):FAIL: Element 0 Expected 7759040 Wa
s -1067964074

-----
74 Tests 11 Failures 0 Ignored
FAIL
```

```
Atividades Terminal sáb, 10:52
severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter
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1
.test/TestSort.c:367:TEST(Sort, TestSort42):FAIL: Element 0 Expected 2 Was 57
.test/TestSort.c:416:TEST(Sort, TestSort48):FAIL: Element 0 Expected -98 Was -5
7
.test/TestSort.c:564:TEST(Sort, TestSort66):FAIL: Element 0 Expected 2 Was 98
.test/TestSort.c:613:TEST(Sort, TestSort72):FAIL: Element 0 Expected -98 Was -2
.test/TestSort.c:623:TEST(Sort, TestSort73):FAIL: Element 1 Expected 4 Was 7
.test/TestSort.c:631:TEST(Sort, TestSort74):FAIL: Element 0 Expected 0 Was -188
0178600
.test/TestSort.c:639:TEST(Sort, TestSort75):FAIL: Element 0 Expected 7759040 Wa
s -1067964074

-----
74 Tests 11 Failures 0 Ignored
FAIL
==3241==
==3241== HEAP SUMMARY:
==3241==    in use at exit: 0 bytes in 0 blocks
==3241==   total heap usage: 13 allocs, 13 frees, 1,384 bytes allocated
==3241==
==3241== All heap blocks were freed -- no leaks are possible
==3241==
==3241== For counts of detected and suppressed errors, rerun with: -v
==3241== ERROR SUMMARY: 0 errors from 0 contexts (suppressed: 0 from 0)
makefile:71: recipe for target 'valgrind' failed
make: *** [valgrind] Error 11
severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$
```

Atividades Terminal ▾ sáb, 10:52

severino-0901@severino0901-VirtualBox: ~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter

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```
severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$ make
make cppcheck
cppcheck --enable=all --suppress=missingIncludeSystem src/sort.c src/sort_main.c
Checking src/sort.c ...
[src/sort.c:24]: (style) The scope of the variable 'min' can be reduced.
[src/sort.c:42]: (style) The scope of the variable 'j' can be reduced.
[src/sort.c:42]: (style) The scope of the variable 'selected' can be reduced.
[src/sort.c:108]: (style) The scope of the variable 'father' can be reduced.
[src/sort.c:108]: (style) The scope of the variable 'child' can be reduced.
[src/sort.c:82]: (style) Array index 'i' is used before limits check.
1/2 files checked 97% done
Checking src/sort_main.c ...
2/2 files checked 100% done
severino-0901@severino0901-VirtualBox:~/CURSO_EDC/TCS/T2/TF/LEONARDO/sorter$
```