

Tyler Griggs

VCU CMSC 257 Project 2

10/23/2020

Known Limitations:

A single warning is produced due to the unmodifiable, given code contained in p2-support.c initialize() .

This single warning does not prevent compilation on the VCU compile server, and does not affect the required program output based on the rubric.

I couldn't free the missing 2 (I'm assuming deleted, but never free'd) blocks without the program failing to compile, or somehow removing the first name of the last entry on every deletion.

Sample Run [screenshots] (Some --- formatting is off in *this* document, refer to program output):

```
[griggsta@compile p2]$ ./cmssc257-f20-p2
```

```
*****
```

```
***** USERNAME Employee Database - Total Employees: 9 *****
```

```
*****
```

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID
6. Delete employee by last Name
7. Exit

2

No.	EmpID	Employee Name	Email	Salary
0	00306	Wei Martin	wm@aol.com	\$ 98999.99
1	00307	Mitch Martinez	mitch@aol.com	\$ 78999.88
2	00408	David Boyle	db@aol.com	\$ 100000.01
3	00204	Christine Bluer	cb@aol.com	\$ 40009.99
4	00305	Stephen Black	sb@aol.com	\$ 8500.01
5	00409	Chris Boyle	cb@aol.com	\$ 200000.01
6	00101	Paula Brown	pb@aol.com	\$ 1000.37
7	00102	Paul Green	pg@aol.com	\$ 2700.45
8	00203	Chris Reddy	cr@aol.com	\$ 2304.67

```
*****
```

***** USERNAME Employee Database - Total Employees: 9 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID
6. Delete employee by last Name
7. Exit

1

***** USERNAME Employee Database - Total Employees: 9 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID
6. Delete employee by last Name
7. Exit

2

No.	EmpID	Employee Name	Email	Salary
0	00101	Paula Brown	pb@aol.com	\$ 1000.37
1	00102	Paul Green	pg@aol.com	\$ 2700.45
2	00203	Chris Reddy	cr@aol.com	\$ 2304.67
3	00204	Christine Bluer	cb@aol.com	\$ 40009.99
4	00305	Stephen Black	sb@aol.com	\$ 8500.01
5	00306	Wei Martin	wm@aol.com	\$ 98999.99
6	00307	Mitch Martinez	mitch@aol.com	\$ 78999.88
7	00408	David Boyle	db@aol.com	\$ 100000.01
8	00409	Chris Boyle	cb@aol.com	\$ 200000.01

***** USERNAME Employee Database - Total Employees: 9 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID

6. Delete employee by last Name

7. Exit

3

Enter the ID you are searching for

55654

No. EmpID	Employee Name	Email	Salary
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***** USERNAME Employee Database - Total Employees: 9 *****

Choose one of the menu options below:

1. Sort with ID

2. Display all employees

3. Search employee by ID

4. Search employee by Last Name

5. Delete employee by ID

6. Delete employee by last Name

7. Exit

3

Enter the ID you are searching for

00307

No. EmpID	Employee Name	Email	Salary
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6	00307 Mitch Martinez	mitch@aol.com	\$ 78999.88
---	----------------------	---------------	-------------

***** USERNAME Employee Database - Total Employees: 9 *****

Choose one of the menu options below:

1. Sort with ID

2. Display all employees

3. Search employee by ID

4. Search employee by Last Name

5. Delete employee by ID

6. Delete employee by last Name

7. Exit

4

Enter the Lastname you are searching for

Boyle

No. EmpID	Employee Name	Email	Salary
-----------	---------------	-------	--------

7	00408 David Boyle	db@aol.com	\$ 100000.01
---	-------------------	------------	--------------

8	00409 Chris Boyle	cb@aol.com	\$ 200000.01
---	-------------------	------------	--------------

***** USERNAME Employee Database - Total Employees: 9 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID
6. Delete employee by last Name
7. Exit

5

Enter the ID you are searching for

00203

No.	EmpID	Employee Name	Email	Salary
2	00203	Chris Reddy	cr@aol.com	\$ 2304.67

***** USERNAME Employee Database - Total Employees: 8 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID
6. Delete employee by last Name
7. Exit

2

No.	EmpID	Employee Name	Email	Salary
0	00101	Paula Brown	pb@aol.com	\$ 1000.37
1	00102	Paul Green	pg@aol.com	\$ 2700.45
2	00204	Christine Bluer	cb@aol.com	\$ 40009.99
3	00305	Stephen Black	sb@aol.com	\$ 8500.01
4	00306	Wei Martin	wm@aol.com	\$ 98999.99
5	00307	Mitch Martinez	mitch@aol.com	\$ 78999.88
6	00408	David Boyle	db@aol.com	\$ 100000.01
7	00409	Chris Boyle	cb@aol.com	\$ 200000.01

***** USERNAME Employee Database - Total Employees: 8 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID
6. Delete employee by last Name
7. Exit

6

Enter the Last Name you are searching for

Boyle

No.	EmpID	Employee Name	Email	Salary
6	00408	David Boyle	db@aol.com	\$ 100000.01

***** USERNAME Employee Database - Total Employees: 7 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name
5. Delete employee by ID
6. Delete employee by last Name
7. Exit

2

No.	EmpID	Employee Name	Email	Salary
0	00101	Paula Brown	pb@aol.com	\$ 1000.37
1	00102	Paul Green	pg@aol.com	\$ 2700.45
2	00204	Christine Bluer	cb@aol.com	\$ 40009.99
3	00305	Stephen Black	sb@aol.com	\$ 8500.01
4	00306	Wei Martin	wm@aol.com	\$ 98999.99
5	00307	Mitch Martinez	mitch@aol.com	\$ 78999.88
6	00409	Chris Boyle	cb@aol.com	\$ 200000.01

***** USERNAME Employee Database - Total Employees: 7 *****

Choose one of the menu options below:

1. Sort with ID
2. Display all employees
3. Search employee by ID
4. Search employee by Last Name

5. Delete employee by ID
 6. Delete employee by last Name
 7. Exit
- 7
Bye!

Valgrind Output for Sample Run:

```
Bye!
==14622==
==14622== HEAP SUMMARY:
==14622==    in use at exit: 128 bytes in 2 blocks
==14622==   total heap usage: 11 allocs, 9 frees, 6,992 bytes allocated
==14622==
==14622== 64 bytes in 1 blocks are definitely lost in loss record 1 of 2
==14622==    at 0x4C29F73: malloc (vg_replace_malloc.c:309)
==14622==    by 0x400A94: createRecord (p2-support.c:36)
==14622==    by 0x400935: initialize (p2-support.c:23)
==14622==    by 0x40085E: main (cmssc257-f20-p2.c:19)
==14622==
==14622== 64 bytes in 1 blocks are definitely lost in loss record 2 of 2
==14622==    at 0x4C29F73: malloc (vg_replace_malloc.c:309)
==14622==    by 0x400A94: createRecord (p2-support.c:36)
==14622==    by 0x400A67: initialize (p2-support.c:29)
==14622==    by 0x40085E: main (cmssc257-f20-p2.c:19)
==14622==
==14622== LEAK SUMMARY:
==14622==    definitely lost: 128 bytes in 2 blocks
==14622==    indirectly lost: 0 bytes in 0 blocks
==14622==    possibly lost: 0 bytes in 0 blocks
==14622==    still reachable: 0 bytes in 0 blocks
==14622==    suppressed: 0 bytes in 0 blocks
==14622==
==14622== Use --track-origins=yes to see where uninitialised values come from
==14622== For lists of detected and suppressed errors, rerun with: -s
==14622== ERROR SUMMARY: 38 errors from 38 contexts (suppressed: 0 from 0)
[griggsta@compile p2]$
```

I couldn't free the missing 2 (I'm assuming deleted, but never free'd) blocks without the program failing to compile or somehow removing the first name of the last entry on every deletion.

It makes no sense why those were my options, but it's C, so it there's probably a specific syntax caveat I've missed. As students it seems we're just here to learn about what the legacy gods of unhelpful compilers created for us, in order to gain experience slamming our heads into tables professionally.