

HW07 - Pointers & Dynamic Arrays [100 pts]

Develop software using dynamic arrays (using the new and delete operators) that allows a user to enter the names of the athletic equipment below.

1. If Mark purchases two pairs of Nike basketball shoes, three Under Armour T-shirts, four Nike shorts, and one pair of Brooks running shoes; print a receipt for the purchase including the total cost before and after tax. Assume the tax rate is 8.25%
2. Print an inventory list before and after Mark's purchase.
3. Add a copy constructor to your inventory management class. Test the copy constructor by instantiating a new inventory management object which is a copy of the original. Print an inventory list for the new object. This should match the original inventory.
4. Your program **must** use pointer variables for all variables.
5. Use at least one user defined namespace.

Run *valgrind* to check for memory leaks

Name of equipment	Cost	Quantity
Nike basketball shoes	\$145.99	22
Under Armour T-shirt	\$29.99	33
Brooks running shoes	\$111.44	11
Asics running shoes	\$165.88	20
Nike shorts	\$45.77	77

Extra Credit [+10 pts]: Maintain a transaction history of all items purchased. Print an audit log of all transactions including cost & quantity for items. Ensure the copy constructor from step 3 also makes a copy of the transaction history.

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Use the command script to capture your interaction compiling and running the program, including all operations, as shown below:

CS1C Spring 2023 TTH HW07 100pts **Due: Tu 2/28/2023**

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ script hw07.scr
```

```
Script started, file is hw07.scr
```

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ date
```

```
...
```

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ ls -l
```

```
...
```

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ make all
```

```
...
```

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ ls -l
```

```
...
```

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ ./hw07
```

... // print out output from step 2 and 3

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ exit
```

```
Script done, file is hw07.scr
```

```
cs1c@cs1c-VirtualBox ~/cs1c/hw/07 $ make tar
```

```
...
```

Submit the tar package file hw07.tar by Tuesday February 28, 2023.