

HW 1

Due: 4 September 2006

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COSC 3015

Enter the following code into a file called *qsort.hs*.

```
qsort [] = []
qsort (h:t) = qsort lesser ++ [h] ++ qsort greater
  where
    lesser = [y | y <- t, y < h]
    greater = [y | y <- t, y >= h]
```

Start the hugs interpreter in the same directory you saved your file in and run the following code.

```
alpamayo 148          hugs
--  --  --  --  ----  -----
||  ||  ||  ||  ||  ||  ||--  Hugs 98: Based on the Haskell 98 standard
||---||  ||--||  ||--||  --||  Copyright (c) 1994-2005
||---||           ---||  World Wide Web: http://haskell.org/hugs
||  ||           Report bugs to: hugs-bugs@haskell.org
||  || Version: May 2006  -----
```

Haskell 98 mode: Restart with command line option -98 to enable extensions

```
Type :? for help
Hugs> :l qsort
:l qsort
Main> :t qsort
:t qsort
qsort :: Ord a => [a] -> [a]
Main> qsort []
qsort []
[]
Main> qsort [2]
qsort [2]
[2]
Main> qsort [5,1,4,2,3]
qsort [5,1,4,2,3]
[1,2,3,4,5]
Main> qsort ['z','y','x','w']
qsort ['z','y','x','w']
"wxyz"
Main> qsort [1,2,3,4,5]
qsort [1,2,3,4,5]
[1,2,3,4,5]
Main> ['a' .. 'z']
['a' .. 'z']
"abcdefghijklmnopqrstuvwxyz"
Main> ['z' .. 'a']
['z' .. 'a']
""
```

```
Main> reverse ['a' .. 'z']
reverse ['a' .. 'z']
"zyxwvutsrqponmlkjihgfedcba"
Main> qsort (reverse ['a' .. 'z'])
qsort (reverse ['a' .. 'z'])
"abcdefghijklmnopqrstuvwxyz"
Main>
```