

```
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-- Section: CST 1-019
```

```
import Data.Char
```

```
getInteger :: IO Integer
getInteger = do line <- getLine
               return (read line :: Integer)
```

```
getFloat :: IO Float
getFloat = do line <- getLine
              return (read line :: Float)
```

```
stats :: IO (Float, Float)
stats = do putStrLn ("Please enter three numbers: ")
          x <- getFloat
          y <- getFloat
          z <- getFloat
          return (sum[x,y,z]/3, sum[x,y,z]-maximum[x,y,z]-
minimum[x,y,z])
```

```
printVert :: String -> IO Int
printVert [] = do return (0)
printVert (c:cs) = do putChar (c)
                      putStrLn (" ")
                      lines (cs)
                      return (length (c:cs))
                      where lines :: String -> IO ()
                            lines []      = return ()
                            lines (x:xs) = do
```

```
putChar (x)
```

```
putStrLn (" ")
```

```
lines
```

```
(xs)
```

return

()

```
displayWords :: IO ()
displayWords = do putStr ("Please enter a line of text: ")
                  line <- getLine
                  let word = words line
                  lines word
                  where lines :: [String] -> IO()
                        lines []      = return()
                        lines (x:xs) = do putStrLn(x)
                                          lines xs
                                          return()
```

```
displayWords2 :: IO ()
displayWords2 = do putStr ("Please enter a line of text: ")
                  line <- getLine
                  let word = words line
                  lines 1 word
                  where lines :: Int -> [String] ->
```

IO ()

```
lines _ []      = return ()
lines n (x:xs) = do putStr
```

(show n ++ ". ")

putStrLn

(x)

lines

(n+1) xs

return

()

```
nonzeros :: IO [Integer]
nonzeros = do x <- getInteger
              if x == 0
              then return []
              else do y <- nonzeros
                      return (list x y)
```

```
list :: Integer -> [Integer] -> [Integer]
```

```
list 0 [] = []
```

```
list x [] = [x]
```

```
list x y = x:y
```

```
posAndNegs :: IO ()
```

```
posAndNegs = do putStrLn ("Please enter a series of  
integers (0 to terminate ): ")
```

```
    x <- nonzeros
```

```
    let a = length (filter (>0) x ++ filter
```

```
(<0) x)
```

```
    putStrLn ("Number of nonzero values
```

```
entered: " ++ show a)
```

```
    let b = length (filter (>0) x)
```

```
    putStrLn ("Number of positive entered: " ++
```

```
show b)
```

```
    let c = minimum x
```

```
    if c < 0
```

```
    then putStrLn ("Smallest negative number
```

```
entered: " ++ show c)
```

```
    else putStrLn ("You did not enter any
```

```
negative numbers.")
```

```
    return ()
```