

Matthew Silva

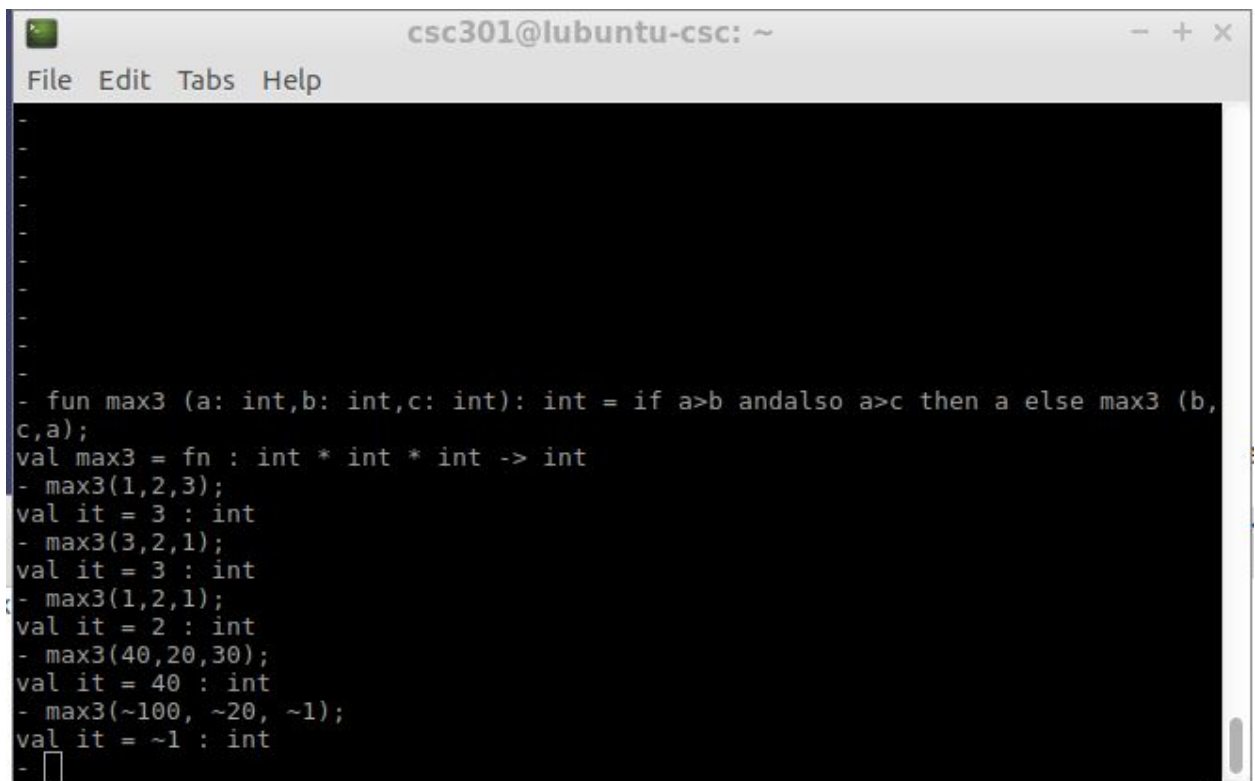
Professor Hamel

CSC 301

8 October 2017

CSC 301 Assignment #4

1. `fun max3 (a: int,b: int,c: int): int = if a>b andalso a>c then a else max3 (b,c,a);`



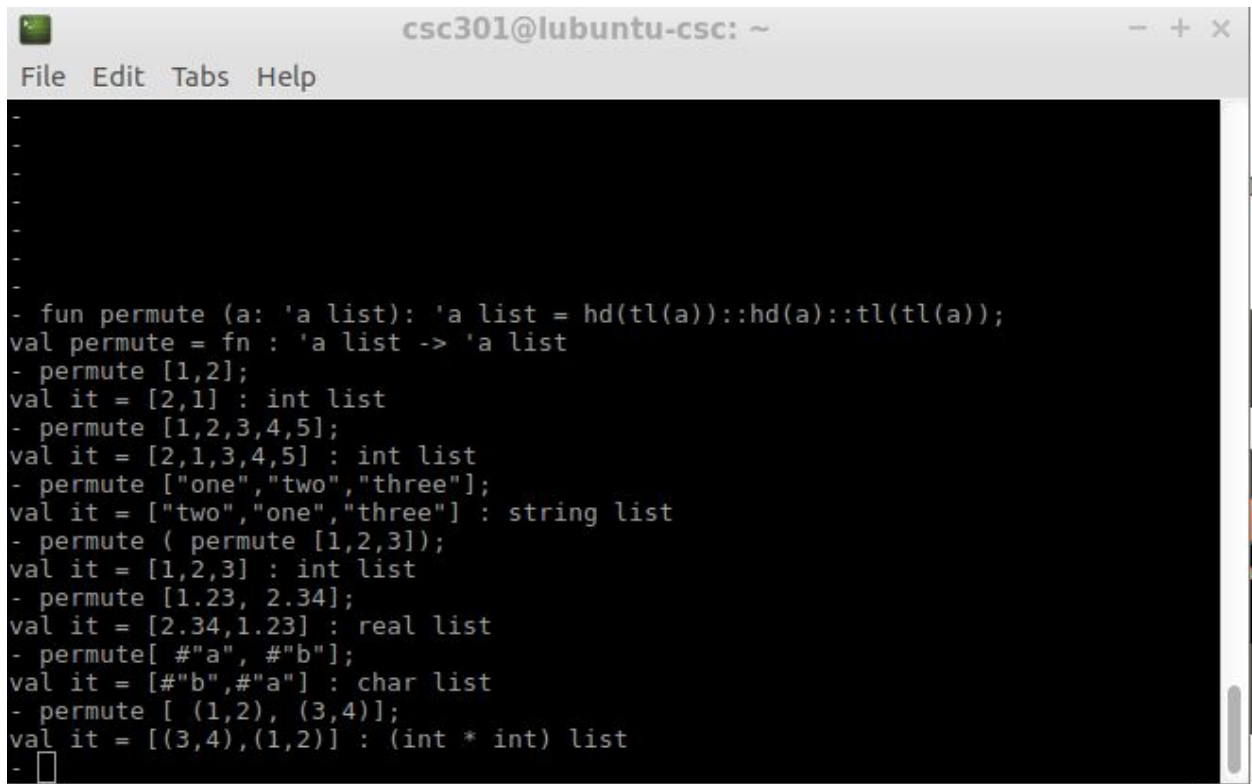
```
csc301@lubuntu-csc: ~  
File Edit Tabs Help  
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- fun max3 (a: int,b: int,c: int): int = if a>b andalso a>c then a else max3 (b,  
c,a);  
val max3 = fn : int * int * int -> int  
- max3(1,2,3);  
val it = 3 : int  
- max3(3,2,1);  
val it = 3 : int  
- max3(1,2,1);  
val it = 2 : int  
- max3(40,20,30);  
val it = 40 : int  
- max3(~100, ~20, ~1);  
val it = ~1 : int  
- 
```

```
2. fun second (a: 'a list): 'a = hd(tl(a));
```

A screenshot of a terminal window titled "csc301@lubuntu-csc: ~". The window has a menu bar with "File", "Edit", "Tabs", and "Help". The terminal displays several lines of Haskell code:

```
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-  
- fun second (a: 'a list): 'a = hd(tl(a));  
val second = fn : 'a list -> 'a  
- second [1,2];  
val it = 2 : int  
- second [1,2,3,4,5];  
val it = 2 : int  
- second ["one", "two", "three"];  
val it = "two" : string  
- second( second [[1,2,3],[4,5,6]]);  
val it = 5 : int  
-  
-  
-  
-  
-  
-  
-
```

3. fun permute (a: 'a list): 'a list = hd(tl(a))::hd(a)::tl(tl(a));



```
csc301@lubuntu-csc: ~  
File Edit Tabs Help  
-  
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-  
-  
- fun permute (a: 'a list): 'a list = hd(tl(a))::hd(a)::tl(tl(a));  
val permute = fn : 'a list -> 'a list  
- permute [1,2];  
val it = [2,1] : int list  
- permute [1,2,3,4,5];  
val it = [2,1,3,4,5] : int list  
- permute ["one","two","three"];  
val it = ["two","one","three"] : string list  
- permute ( permute [1,2,3]);  
val it = [1,2,3] : int list  
- permute [1.23, 2.34];  
val it = [2.34,1.23] : real list  
- permute[ #"a", #"b"];  
val it = [#"b",#"a"] : char list  
- permute [ (1,2), (3,4)];  
val it = [(3,4),(1,2)] : (int * int) list  
- 
```