

# Advanced Programming

Exam 2018

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## 1 Question 1.1: Utility functions

### A Code Listing

#### A.1 Whatever Code is here

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```
1 module Utils where
2
3   -- Any auxiliary code to be shared by Parser, Solver, or tests
4   -- should be placed here.
5
6   import Defs
7   import Data.Bool
8
9   instance Ord Version where
10     (<=) (V[]) _ = False
11     (<=) (V(_:_)) (V []) = True
12     (<=) (V[VN v1int v1str]) (V[VN v2int v2str]) =
13       if checkVersion v1int v2int v1str v2str then True else False
```

```
14     (<=) (V(VN v1int v1str:xs)) (V(VN v2int v2str:ys)) = V(xs) <= V(ys)
15
16     checkVersion :: Int -> Int -> String -> String -> Bool
17     checkVersion a b c d = a <= b && (c <= d || length(c) <= length(d))
18     -- or define 'compare' instead
19
20     merge :: Constrs -> Constrs -> Maybe Constrs
21     merge = undefined
```

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