宣言型プログラム論 レポート

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9-1

```
listsum [] = 0
listsum (x:xs) = x + listsum xs
```

```
% ghci 9-1.hs
GHCi, version 7.4.2: http://www.haskell.org/ghc/  :? for help
Loading package ghc-prim ... linking ... done.
Loading package integer-gmp ... linking ... done.
Loading package base ... linking ... done.
[1 of 1] Compiling Main             ( 9-1.hs, interpreted )
Ok, modules loaded: Main.
*Main> listsum [1,1,2,2,3,3]
12
*Main> listsum [1.5, 1.6, 1.7]
4.8
```

9-2

```
pyth (x, y, z) = x * x + y * y == z * z
triads n = [(x, y, z) | z <- [1..n], y <- [1..z], x <- [1..y], pyth (x, y, z)]
```

```
 % ghci 9-2.hs
GHCi, version 7.4.2: http://www.haskell.org/ghc/  :? for help
Loading package ghc-prim ... linking ... done.
Loading package integer-gmp ... linking ... done.
Loading package base ... linking ... done.
[1 of 1] Compiling Main             ( 9-2.hs, interpreted )
Ok, modules loaded: Main.
*Main> pyth (3,4,5)
True
*Main> pyth (1,1,1)
False
*Main> pyth (7, 12, 13)
False
*Main> pyth (5, 12, 13)
True
*Main> triads 10
[(3,4,5),(6,8,10)]
*Main> triads 20
[(3,4,5),(6,8,10),(5,12,13),(9,12,15),(8,15,17),(12,16,20)]
*Main> triads 5
[(3,4,5)]
```

9-3

```
suml [] [] = []
suml (x:xs) (y:ys) = [x + y] ++ (suml xs ys)

fiblist = 1:1:(suml fiblist (tail fiblist))
```

```
 *Main> take 10 (suml [1..] [2..])
[3,5,7,9,11,13,15,17,19,21]
*Main> take 10 fiblist
[1,1,2,3,5,8,13,21,34,55]
```