Haskell:
Fun With Types

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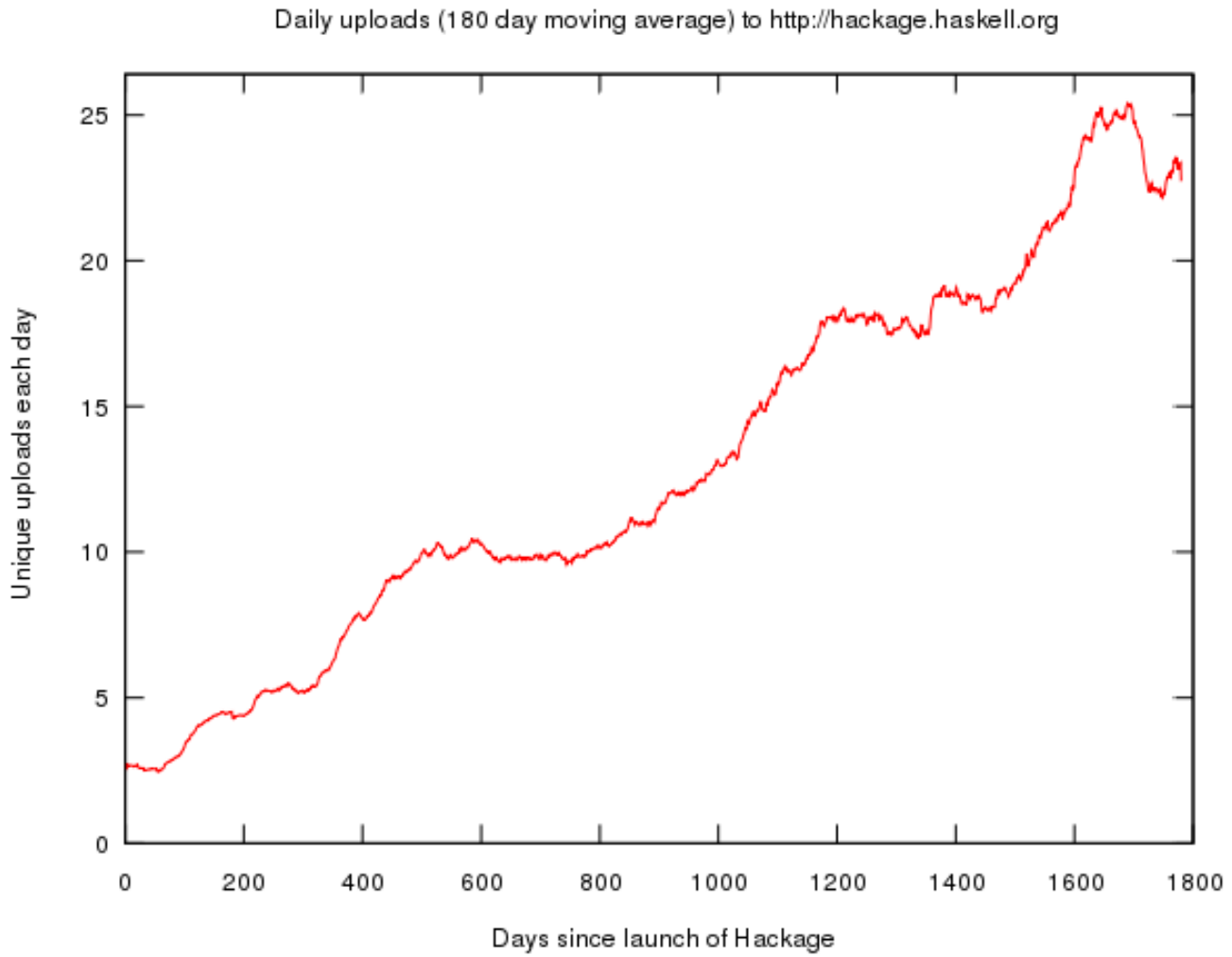

Why is Haskell Hawt?

- Lazy by default.

```
fst (a,b) = a

main = print (fst (1, killallhumans earth))
```

- Purely functional by default.
- Strong type system with inference.

```
main :: IO ()
main = putStrLn "Hello, World!"
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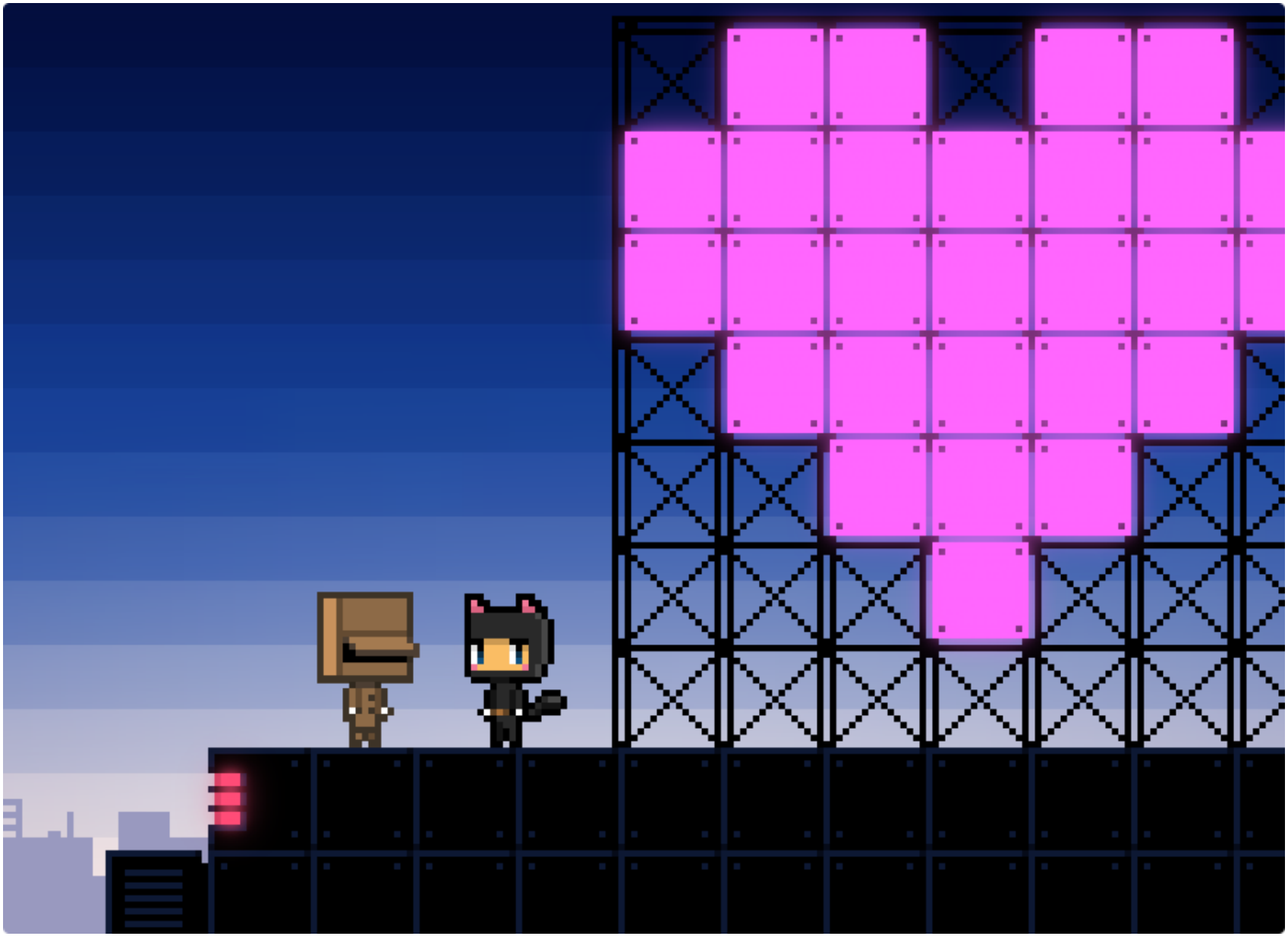

Enough sales talk, send me teh codez!

Task: Generate random values by type. User of the Library can declare objects that return a random value.

Requirement: Must be able to make random list whenever we can make random elements of that list.

```
class Random a where
  random :: IO a
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generateRandomInt :: IO Int
generateRandomInt = ...

instance Random Int where
  random = generateRandomInt
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instance Random Int where
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instance (Random a) => Random [a] where
  random = do
    randLength <- generateRandomInt
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import Control.Monad(replicateM)

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instance (Random a) => Random [a] where
  random = do
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    replicateM randLength (random :: IO a)
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