Cryptol: Functions

Description Illustration of function design and use. Several examples are considered from several applications. Some functions are based on comprehensions and some are recursive. Some functions are designed for infinite sequences. Some functions are designed for finite sequences but use infinite sequences as a workaround for Cryptol's strong typing.

Purpose Functions are the basis for writing and supporting specifications

Audience This module is intended for:

1 The general public
2 K-12 and college classes on cyber defense
3 preparation for proficiency in the use of tools and a computing environment suitable for the study of cyber defense

Objectives After completing the module:

1 Familiarity with function design, especially for specifications
2 Familiarity with recursion for solving computation problems
3 Observed setting up functions for solving simple problems

Keywords function, comprehension, recursion, type signature, sequence, infinite sequence

Category cybersecurity > education

Delivery java applets and written documentation in pdf format

Team John Franco and Ethan Link

Assessment The applets provide the means for experimentation. Questions are asked in the documentation that help with the set up of experiments. The ideas that learners come up with is evidence that the module was successful.

Workflow No particular schedule was established

Environment All materials are contained in a single jar file. The jar file can be run on any computer where java version 11 or higher and some pdf reader such as acroread or evince are available. The jar file may be executed in the cyber range or learners may download the jar file (which is considered to be an executable file) and run it on their personal computers.