

Problem Domain:	Integral Conversion
Mission Summary:	Convert String / Integral Formats
Prerequisite:	Completion of "Python 1000" (available at Udemy.com)
Your Script Name:	PR03_HexReaderWriter.py
Solution Name:	PR03S_HexReaderWriter_BONUS.py
Version:	1.0

Synopsis

The student who has completed Python 1000 will recall that every character has a numeric representation. From hex dumps to scientific notation, new software developers need to be comfortable converting between common data formats. In this exercise, our mission is to write ("encode") and read ("decode") a string into a hexadecimal (or "base 16") format. Along the way, we should take the opportunity to add a hexadecimal string reader & writer pair of functions to our personal library collection.

Requirements

- 1) Create a script called PR03_HexReader.py
- 2) Convert the hexadecimal output from project PR02 back to its original representation
- 3) BONUS
 - A) Using your own hex-dump style, take this opportunity to create a "Hex Writer" and a "Hex Reader" function
 - B) The Writer will
 - 1) Accept an input string
 - 2) Return a hex-encoded string
 - C) The Reader will
 - 1) Convert the output from the Writer
 - 2) Back to the original input string representation
 - D) BEST PRACTICE: Functions should return None / NULL upon error

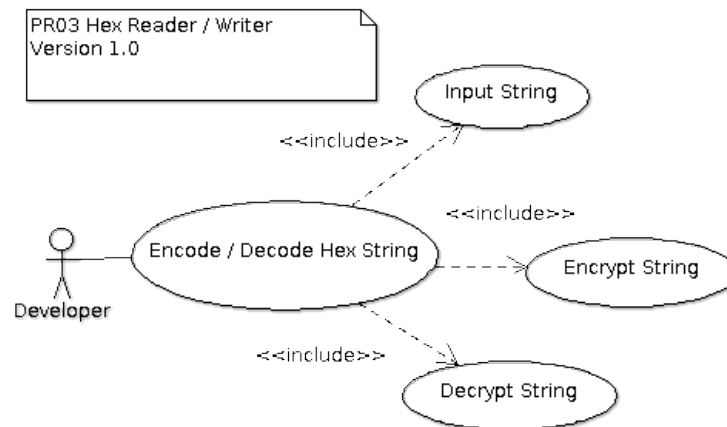
Developer Notes

- 1) A string is merely a collection of characters
- 2) The hex codes display in PR02 are strings
- 3) In order to convert hex() strings:
 - A) Use **int(STR, BASE)** where
 - 1) **STR** is the previously generated hex() string
 - 2) **BASE** is an integer used to define the conversion's "option base"
 - 3) Note the any hexadecimal conversion must use an "option base" of **16**
 - B) We can use Python's **char()** function to convert an ordinal / integral value, to a character

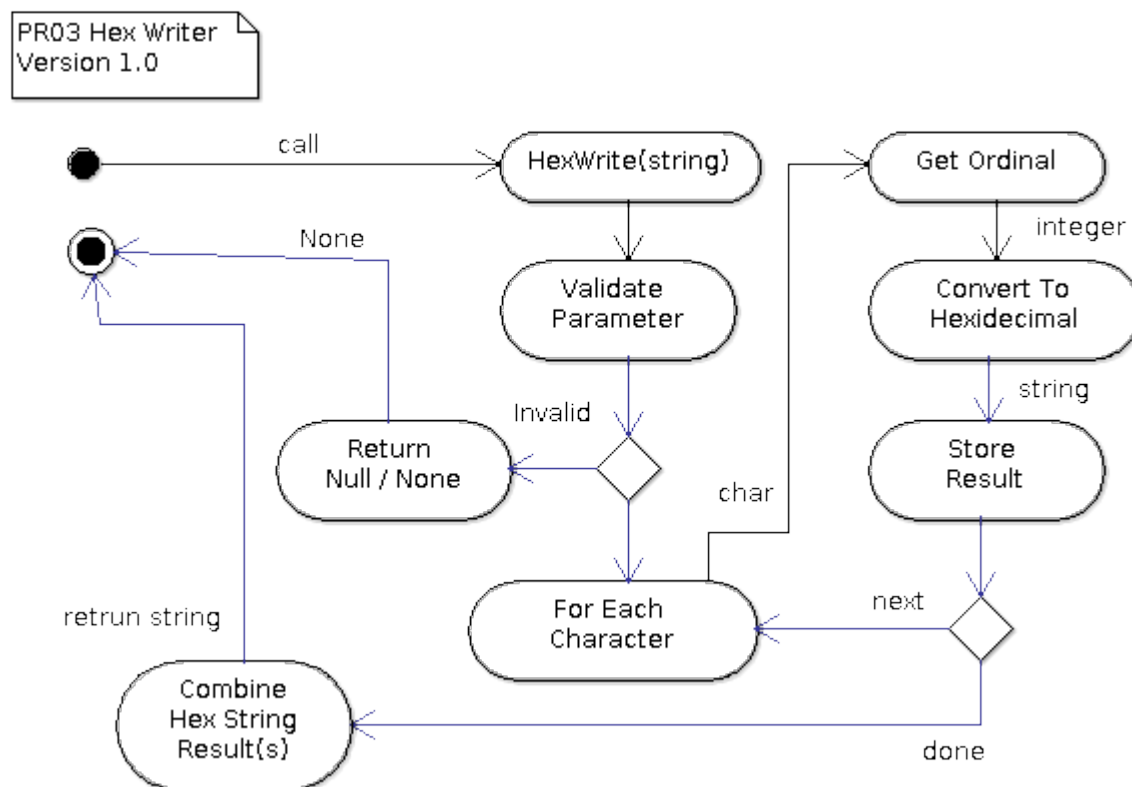
Related Diagrams

The following is a graphical requirement overview.

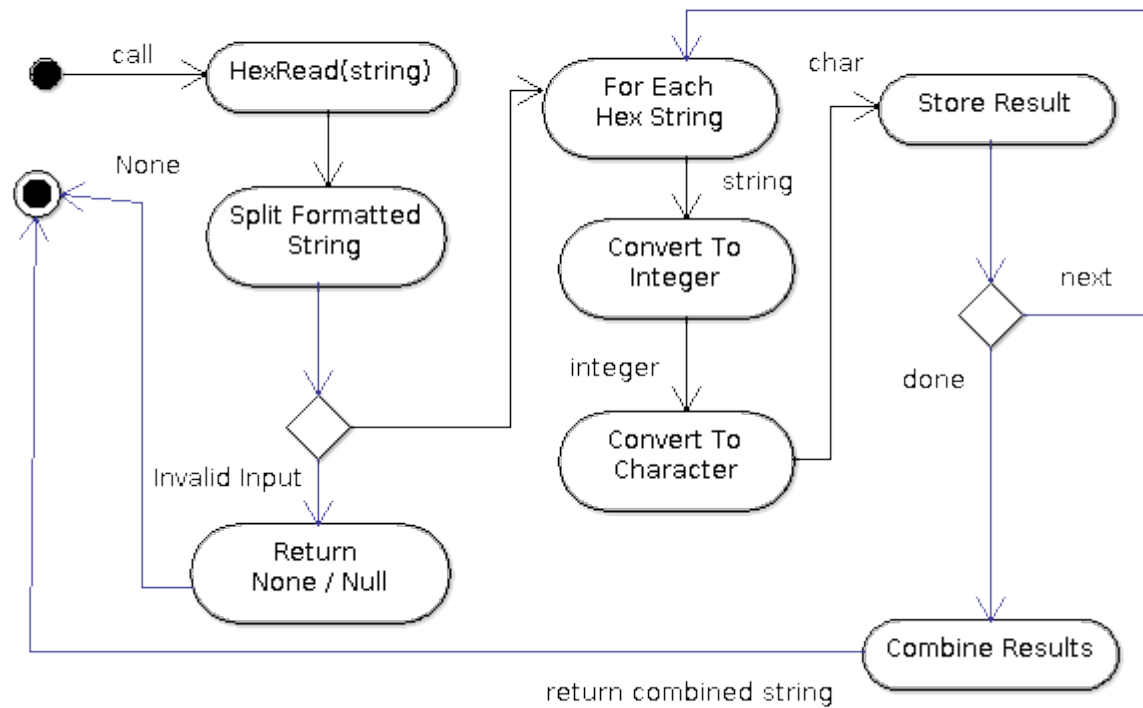
1.) The top-level Use Case depicts the scenarios defined by the Developer Notes section:



2.) The following diagrams depict the Hexadecimal Writer & Reader Functions:



PR03 Hex Reader
Version 1.0



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