STRANDS AND STANDARDS PYTHON 2, INTRODUCTION



Course Description

Python is a language with a simple syntax, and a powerful set of libraries. It is an interpreted language, with a rich programming environment, including a robust debugger and profiler. While it is easy for beginners to learn, it is widely used in many scientific areas for data exploration.

Intended Grade Level	7-8
Units of Credit	0.5
Core Code	35.02.00.00.006
Concurrent Enrollment Core Code	N/A
Prerequisite	Introduction to Python 1
Skill Certification Test Number	N/A
Test Weight	N/A
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Introduction to Computer Science
Endorsement 2	Programming & Software Development
Endorsement 3	Web Development
Endorsement 4	Information Technology Systems
Endorsement 5	BAM - CTE/General or Basic or Lvl 2

ADA Compliant: September 2022

STRAND 1

Lists (Arrays)

Standard 1

Students will identify when to use a list Student will create a list with strings and numeric values Access a particular element in a list by using an index

Standard 2

Students will use the list methods to manipulate their lists

- .append(), .pop(), and .insert()
- .extend(), +, .reverse(), and .sort()
- .join(), split()

Standard 3

Students will use a for loop with "in"

- For example:
 - fruits = ["apple", "banana", "cherry"]
 - for x in fruits: print (x)

Students will use a for loop with range()

- For example:
 - for x in range (4) print (x)

Performance Skills

- use a variety of list methods
- use a for loop with "in"
- use a for loop with range()

STRAND 2

Indexes

Standard 1

Students will understand an index

• The first index location is zero

Standard 2

Understand how a string is indexed Work with string characters by index

Standard 3

Students will slice a string into substrings Students will slice a list into sub lists

Performance Skills

- Find the location of an element in a list
- Slice a string into substrings
- Slice a list in to sub lists

STRAND 3

Working with Files

Standard 1

Students will be able to:

- Import files into Jupyter notebooks by using the curl command.
- Read a local file in memory.
- Use .read() to read a specific number of characters.

Standard 2

Students will be able to:

- Use .readlines() to read text from files as a list of lines.
- Use .close() to free system resources.

Standard 3

Students will be able to:

- Use .readline() to read data from a file one line at a time.
- Use .strip() to remove newline characters and other whitespaces.

Standard 4

Students will be able to:

- Use .seek() to set file read and write locations.
- Use file append mode.

Standard 5

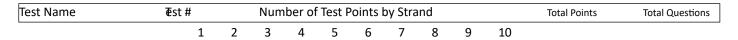
Students will be able to:

- Use .write() to write to a file
- Use file append mode to append to a file

Performance Skills

- Use .read() to read a specific number of characters.
- Use .readlines() to read data from file as a list of lines.
- Use .readline() to read data from file a line at a time.
- Use .strip() to remove newline characters.
- Use .write() to write data to a new local file.
- Use .seek() to set file read or write location.
- Use file append mode.

Skill Certification Test Points by Strand



3]Page REVISED: August 2022