

# Certificate of Training Completion

Certifies that

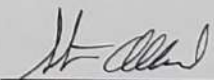
Vinay Mamidi

**Has completed the SPECTRUM  
Python Essentials Five Day Program**

## Course Content

Python Overview; Flow Control; Sequences; Working with Files; Dictionaries and Sets;  
Functions; Sorting; Errors and Exceptions; Modules and Packages; Classes; Regular  
Expressions; Standard Library; Dates and Times; Working with the File System;  
Advanced Data Handling; Network Services; Running Command Line Scripts;  
Multiprocessing and Multithreading; Map/Filter/Reduce; Pandas; Python with SQL  
Server; Simple and Complex API; Parrow Package; Reading JSON/Avro/Parquet;  
Working with JSON/XML

**Presented by:** Steven Allard - Director, Operations

**Signed:** 

**Dated:** October 22, 2019

**SPECTRUM**

