AI252

Introduction to Python Programming and to Red Hat OpenShift AI

Course Description

An introduction to Python programming, and creating and managing AI/ML workloads with Red Hat OpenShift AI.

Python is a popular programming language used by system administrators, data scientists, and developers to create applications, perform statistical analysis, and train AI/ML models. This course introduces the Python language and teaches the basics of using Red Hat OpenShift AI for AI/ML workloads. This course helps students build core skills such as describing the Red Hat OpenShift AI architecture, and organizing, executing and testing AI/ML code through hands-on experience. These skills can be applied in all versions of Red Hat OpenShift AI.

This course is based on Python 3, RHEL 9.0, Red Hat OpenShift ® 4.14, and Red Hat OpenShift AI 2.8.

Recommended training

- Experience with Git is required
- Experience in Red Hat OpenShift is required, or completion of the [Red Hat OpenShift Developer II: Building and Deploying Cloud-native Applications (DO288)](#) course
- Basic experience in the AI, data science, and machine learning fields is recommended

Course Outline

An Overview of Python 3
    Introduction to Python and setting up the developer environment

Basic Python Syntax
    Explore the basic syntax and semantics of Python

Language Components
    Understand the basic control flow features and operators

Collections

Write programs that manipulate compound data using lists, sets, tuples and dictionaries

Functions

Decompose your programs into composable functions

Modules

Organize your code using Modules for flexibility and reuse

Classes in Python

Explore Object Oriented Programming (OOP) with classes and objects

Exceptions

Handle runtime errors using Exceptions

Input and Output

Implement programs that read and write files

Data Structures

Use advanced data structures like generators and comprehensions to reduce boilerplate code

Parsing JSON

Read and write JSON data

Debugging

Debug Python programs using the Python debugger (pdb)

Introduction to Red Hat OpenShift AI

Identify the main features of Red Hat OpenShift AI, and describe the architecture and components of Red Hat AI.

Data Science Projects

Organize code and configuration by using data science projects, workbenches, and data connections

Jupyter Notebooks

Use Jupyter notebooks to execute and test code interactively