DATA SCIENCE

Introduction to Data Science, Use cases, Need of Business Analytics, Data Science Life Cycle, Different tools available for Data Science.

1) R Programming

1.1 Introduction to R

1.2 Installation of R
-Windows Installation
-Linux Installation

Installing R and R-Studio, R packages, R Operators, if statements and loops (for,while, repeat, break, next), switch case

1.3 Types of Datatype
-Arrays
-Data Frames
-Lists
-Factors

R Data Structure (Vector, Scalar, Matrices, Array, Data frame, List), Functions, Apply Functions

1.12 Machine learning algorithms

      -classification

          the act or process of classifying

    -clustering

     form a cluster or clusters.

    -regression

     a return to a former or less developed state.

2)PYTHON

1.1   Introduction to Python

-What is Python and history of Python?

  -Unique features of Python

   -Python-2 and Python-3 differences

 -Install Python and Environment Setup

  -First Python Program

   -Python Identifiers, Keywords and Indentation

 -Comments and document interlude in Python

  -Command line arguments

-Getting User Input

-Python Data Types

-What are variables?

-Python Core objects and Functions

-Number and Maths

-Week 1 Assignments

1.2 List, Ranges & Tuples in Python

-Introduction   to list,tuples,ranges

-Lists in Python

-More About Lists

-Understanding Iterators

-Generators,Comprehensions and   Lambda
  Expressions
- Introduction to generators,yields

-Generators and Yield

-Next and Ranges

-Understanding and using Ranges

-More About Ranges

-Ordered Sets with tuples

1.3   Python Dictionaries and Sets

-Introducing to the section

-Python Dictionaries

-More on Dictionaries

- Introducing to Sets

-Python Sets Examples

1.4   Input and Output in Python

-Reading and writing text files

-writing Text Files

-Appending to Files and Challenge

-Writing Binary Files Manually

-Using Pickle to Write Binary Files

1.5   Python built in function

-Python packages functions(Numpy,Pandas,Scipy)

-Defining and calling Function

-The anonymous Functions

- Loops and statement in

Python

-Python Modules & Packages

1.6   Python Object Oriented

- Formal presentation of object oriented programming

-Topping up topics like: Abstraction
Encapsulation, Inheritance,Polymorphism

-Creating Classes and Objects

-Accessing attributes

-Built-In Class Attributes

-Destroying Objects

1.7   Python Exceptions Handling

-What is Exception?

-Handling an exception

-try….except…else

-try-finally clause

-Argument of an Exception

-Python Standard Exceptions

-Raising an exceptions

-User-Defined Exceptions

1.8 Machine learning algorithms

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