DAILY ASSESSMENT REPORT

Date:	22/05/2020	Name:	Abhishek M Shastry K
Course:	Career Edge - Knockdown the Lockdown	USN:	4AL17EC002
Topic:	1] Understand Artificial Intelligence (AI) - Part 1 2] Understand Artificial Intelligence (AI) - Part 2 3] Assessment	Semester & Section:	6th 'A'
Github Repository:	AbhishekShastry-Courses		

FORENOON SESSION DETAILS
Image of session

Report

Understand Artificial Intelligence (AI) - Part 1

- Introduction to AI

- AI is concerned with the design of intelligence in artificial device. This definition was coined by McCarthy in 1956.

- Approaches to AI:
    - ✓ Thought /Reasoning versus Behavior.
    - ✓ Human like performance versus Ideal performance (rationality).

- A Turing Test is a method of inquiry in artificial intelligence (AI) for determining whether or not a computer is capable of thinking like a human being. The test is named after Alan Turing, the founder of the Turing Test and an English computer scientist, cryptanalyst, mathematician and theoretical biologist.

- Turing test: Result
    - ✓ If the interrogator cannot reliably distinguish the human from the computer then the computer does possess artificial intelligence.

- Intelligent entities need to be able to do both 'mundane' and 'expert' tasks.

- Application of AI:
    - ✓ Computer vision.
    - ✓ Image recognition.
    - ✓ Robotics.
    - ✓ Language processing.
    - ✓ Speech processing.

- Foundations required for AI – Philosophy, Mathematics, Computer Engineering, Psychology, Biology, Economics, Linguistics, etc.

Understand Artificial Intelligence (AI) - Part 2

- Agents operate in an environment and have their own goals to perform.
- Agents perceives its environment through sensors and acts upon its environment through actuators/effectors.

- Example for agents:
  - ✓ Human – Eyes, Ears, Skin, Taste buds, etc. are sensors. Hands, Fingers, Legs, Mouth, etc. are effectors.
  - ✓ Robots – Camera, Infrared, Bumper, etc. are sensors. Grippers, Wheels, Lights, Speakers, etc. are actuators.
- An ideal agent always chooses the action which maximizes its expected performance, given its percept sequence so far.
- An autonomous agent uses its own experience rather than built-in knowledge of the environment by the designer.
- An agent program maps from percept to action and updates its internal state.

Assessment

- Final assessment test containing all the topics covered from Day1 to Day14 in the course.

CERTIFICATE : TCS iON Career Edge - Knockdown the Lockdown

TCS iON | Digital Learning Hub
Learn, Share, Collaborate

TATA CONSULTANCY SERVICES

This is to certify that

Abhishek M Shastry K

has successfully completed

Career Edge - Knockdown the Lockdown

online course offered by TCS iON

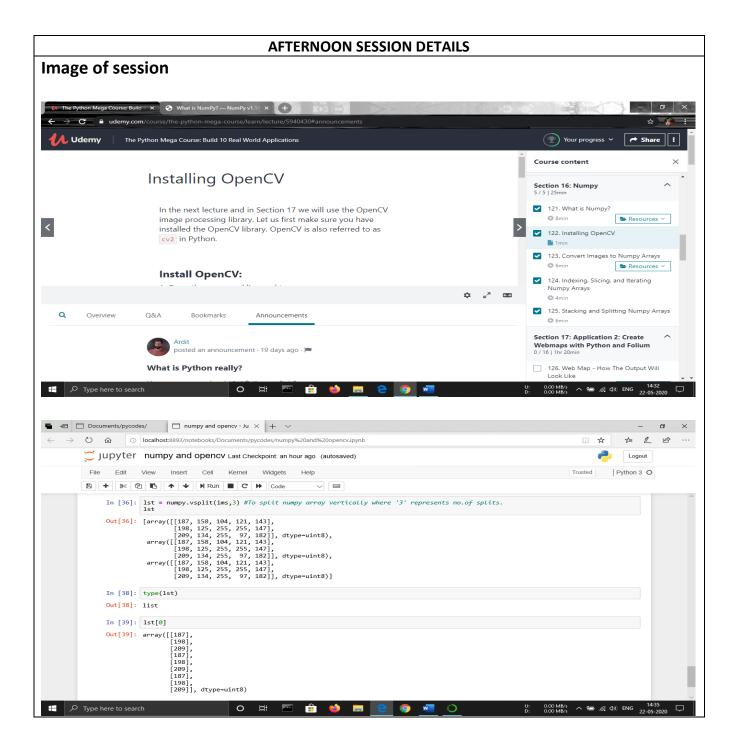**Start Date : 16 May 2020** | **End Date: 22 May 2020**

Topics:

- Communication Skills
- Presentation Skills
- Soft Skills
- Career Guidance Framework
- Resume Writing
- Group Discussion Skills
- Interview Skills
- Business Etiquette
- Effective Email Writing
- Telephone Etiquette
- Accounting Fundamentals
- IT Foundational Skills
- Overview of Artificial Intelligence* (Source: NPTEL)

CERTIFIED
Cert. ID.: 4-8261259-1016
Dated: 22 May 2020

Mehul Mehta

Mehul Mehta
Global Delivery Head, TCS iON

Date:	22/05/2020	Name:	Abhishek M Shastry K
Course:	The Python Mega Course: Build 10 Real World Applications	USN:	4AL17EC002
Topic:	1] Numpy	Semester & Section:	6th 'A'
Github Repository:	AbhishekShastry-Courses		

AFTERNOON SESSION DETAILS

Image of session

Report

Numpy

- What is Numpy?
    - ✓ Numpy is the fundamental package for scientific computing in Python.
- It is a Python library that provides a multidimensional array object, various derived objects (such as masked arrays and matrices), and an assortment of routines for fast operations on arrays, including mathematical, logical, shape manipulation, sorting, selecting, I/O, discrete Fourier transforms, basic linear algebra, basic statistical operations, random simulation and much more.
- At the core of the Numpy package, is the *ndarray* object. This encapsulates *n*-dimensional arrays of homogeneous data types, with many operations being performed in compiled code for performance.
- An image containing **n x n pixels** can be represented in **list** format which contains pixel values.
- But for images having higher number of pixels, **list** will consume more memory to store pixel values, so numpy is the efficient way to access and store pixel values of the image.
- Converting images into **numpy** array using **opencv** library.
- **cv2.imread ()** and **cv2.imwrite ()** functions are used to read and write **image.png** file respectively.
- The value **'0'** is passed when read operation is performed on the image to give **gray scale** pixel values of the image.
- The value **'1'** is passed when read operation is performed on the image to give **Blue**, **Green**, **Red** (**BGR**) pixel values of the image respectively.
- Indexing and Slicing of numpy arrays.
- Accessing numpy arrays by rows, columns and also by each element of the array.
- Stacking (concatenate) and splitting of numpy arrays both horizontally and vertically.