

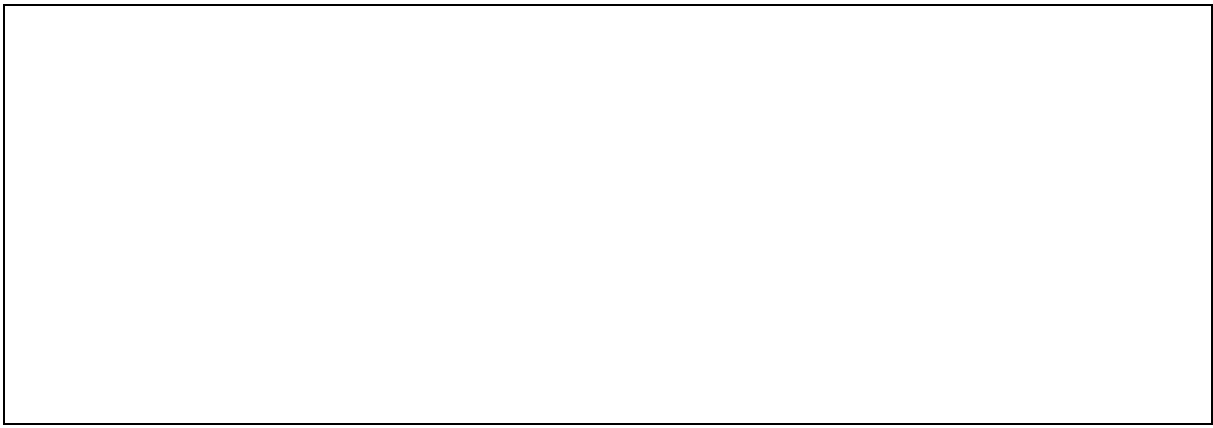
## DAILY ASSESSMENT FORMAT

Date:	22-May-2020	Name:	Shilpa S
Course:	TCS iON	USN:	4AL14EC078
Topic:	Artificial Intelligence	Semester & Section:	8 <sup>th</sup> sem & 'A' section
Github Repository :	Shilpa-online		

### MORNING SESSION DETAILS

#### Image of session





Artificial Intelligence is an approach to make a computer, a robot, or a product to think how smart human think. AI is a study of how human brain think, learn, decide and work, when it tries to solve problems. And finally this study outputs intelligent software systems. The aim of AI is to improve computer functions which are related to human knowledge, for example, reasoning, learning, and problem-solving.

The intelligence is intangible. It is composed of

- Reasoning
- Learning
- Problem Solving
- Perception
- Linguistic Intelligence

The objectives of AI research are reasoning, knowledge representation, planning, learning, natural language processing, realization, and ability to move and manipulate objects. There are long-term goals in the general intelligence sector.

Approaches include statistical methods, computational intelligence, and traditional coding AI. During the AI research related to search and mathematical optimization, artificial neural networks and methods based on statistics, probability, and economics, we use many tools. Computer science attracts AI in the field of science, mathematics, psychology, linguistics, philosophy and so on.

## **Applications of AI**

- Gaming – AI plays important role for machine to think of large number of possible positions based on deep knowledge in strategic games. for example, chess, river crossing, N-queens problems and etc.
- Natural Language Processing – Interact with the computer that understands natural language spoken by humans.
- Expert Systems – Machine or software provide explanation and advice to the users.
- Vision Systems – Systems understand, explain, and describe visual input on the computer.
- Speech Recognition – There are some AI based speech recognition systems have ability to hear and express as sentences and understand their meanings while a person talks to it. For example Siri and Google assistant.
- Handwriting Recognition – The handwriting recognition software reads the text written on paper and recognize the shapes of the letters and convert it into editable text.
- Intelligent Robots – Robots are able to perform the instructions given by a human.

## **Major Goals**

- Knowledge reasoning
- Planning
- Machine Learning
- Natural Language Processing

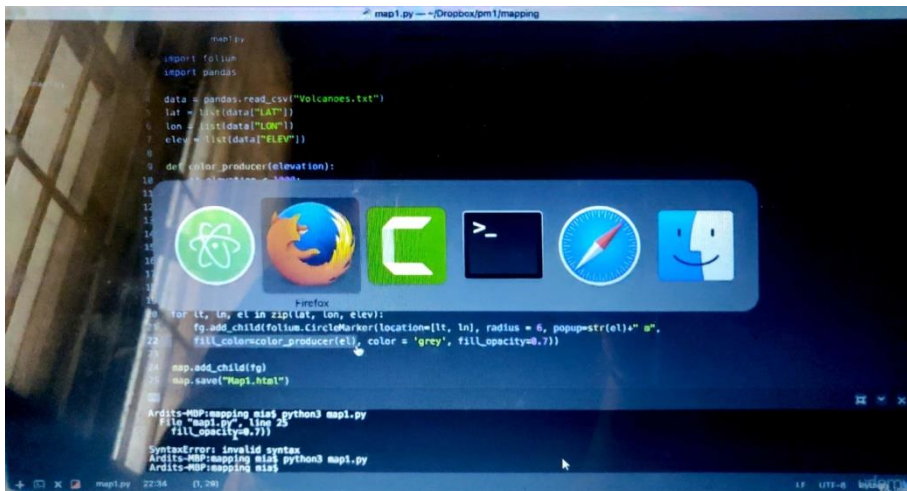
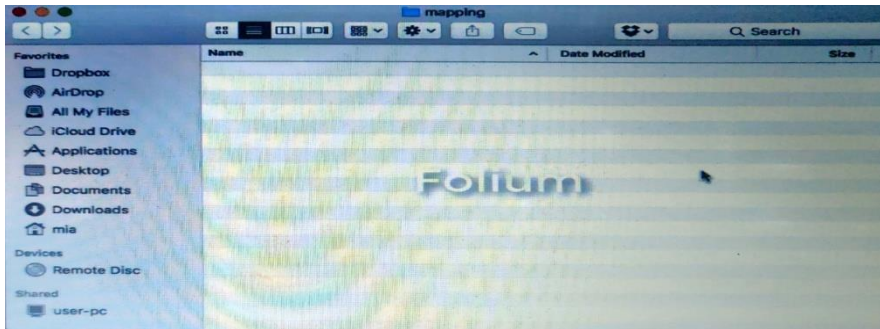
- Computer Vision
- Robotics

# DAILY ASSESSMENT FORMAT

Date:	22-5-2020	Name:	Shilpa S
Course:	Python programming	USN:	4AL14EC078
Topic:	Create web map using python and folium	Semester & Section:	8 <sup>th</sup> A
Github Repository:	Shilpa-online		

## AFTERNOON SESSION DETAILS

### Image of session



- Folium is a Python package built to bridge the data wrangling muscle of Python with Leaflet's easy-to-use JavaScript library for creating attractive, interactive web maps.
- The open source Leaflet is a highly popular web mapping tool due to its flexibility, with a healthy number of community-developed plug-ins further expanding its native capabilities.
- While Python is a robust programming language, with many packages contributing to geospatial analysis– Pandas, GeoPandas, Fiona, Shapely, Matplotlib, and Descartes to name a few– Folium differentiates itself through ease of use and the interactive potential of the final product.
- After some experimentation with the library, it did not take very long to produce a functional, albeit simple, web map with clustered point data, accompanied by popup windows.
- However, it was obvious that there is more to explore with Folium, as it plays well with many types of geospatial data, includes built-in functions and methods for producing choropleths, temporal visualizations, and allows for the marriage of the best of Python and Leaflet.
- The code and resulting maps show a straightforward exercise in extracting the geographic coordinates (already matching Leaflet's default web-mercator projection) and a few attribute values corresponding to warehouse/distribution centers in Pennsylvania's Lehigh Valley from an excel spreadsheet.

The Pandas library was used to read the excel document and convert the desired information to a dataframe. Folium was used to initialize a Leaflet map, add records as points with some stylization applied. This is brief code that could easily be added at the end of a more intensive spatial analysis using Python. It can provide a quick way to publish results in an interactive format without necessitating the use of JavaScript/html/CSS, or could serve as a jump start on more elaborate styling.

#### Map #1 – Mostly default styling

```
import pandas as pd
import folium
```

```
#converting the imported data to a pandas dataframe object
```

```
df = pd.read_excel("Warehouses.xlsx")
```

```
#identifying the long, lat columns, and other properties for the popup window
```

```
df.head()
```

```

pdlat='Latitude'
pdlon='Longitude'
#removing unwanted columns
avail =df[3:]
#initializing folium map object as m and using the geographic mean of the data points to center the
viewpoint; basemap defaults to OSM
m=folium.Map(location=[df[pdlat].mean(), df[pdlon].mean()], zoom_start=12)
#Iterate through edited dataframe to extract coordinates and property name for each record
for row in avail.iterrows():
prop = str(row[1]['Property'])
lat = row[1][pdlat]
lon = row[1][pdlon]
#attach each record to a default marker style based on coordinates and add property name to popup
window
m.simple_marker(location=[lat, lon], marker_color='red', popup=prop)
#outputting html document with code for an interactive map to working directory
m.create_map('map.html').

```

