Description:
Data Science has been ranked as one of the hottest professions and the demand for data practitioners is booming. This Professional Certificate from IBM is intended for anyone interested in developing skills and experience to pursue a career in Data Science or Machine Learning.

This program consists of 9 courses providing you with latest job-ready skills and techniques covering a wide array of data science topics including: open source tools and libraries, methodologies, Python, databases, SQL, data visualization, data analysis, and machine learning. You will practice hands-on in the IBM Cloud using real data science tools and real-world data sets.

It is a myth that to become a data scientist you need a Ph.D. This Professional Certificate is suitable for anyone who has some computer skills and a passion for self-learning. No prior computer science or programming knowledge is necessary. We start small, re-enforce applied learning, and build up to more complex topics.

Upon successfully completing these courses you will have done several hands-on assignments and built a portfolio of data science projects to provide you with the confidence to plunge into an exciting profession in Data Science. In addition to earning a Professional Certificate from Coursera, you will also receive a digital Badge from IBM recognizing your proficiency in Data Science.

Peer-graded Assignment: Capstone Project Notebook's
Course Contents:
Week 1 - Introduction to Capstone Project
- Introduction to Capstone Project
- Learning about the capstone project and the different tools and skills that you will learn in this course.
- Learning about the different location data providers and what location data is composed of.
- Learning how to sign up on Watson Studio, and how to create a project, start a notebook, and share the notebook.
- Creating a project on Watson Studio, create a project, start a notebook and share it with your peers.
- Location Data Providers
- Signing-up for a Watson Studio Account
- Peer-review Assignment: Capstone Project Notebook
Week 2 - Foursquare API
- Learning about Foursquare and its API.
- Learning how to create a Foursquare developer account.
- Creating a Foursquare developer account.
- Learning how to use the Foursquare API to search for a specific type of venues, explore a given venue, and search for trending venue around a location.
- Completing a lab to better understand how to make calls to the Foursquare API and retrieve location data from its database.
- Getting Foursquare API Credentials
- Using Foursquare API
- Lab: Foursquare API
- Quiz: Foursquare API
Week 3 - Neighborhood Segmentation and Clustering
- Learning about clustering and k-means clustering in particular.
- Learning how to use the Foursquare API and clustering to segment and cluster the neighborhoods in New York City.
- Learning how to use the Beautifulsoup Python package to scrape websites and parse HTML code.
- Applying the skills acquired so far in this course to segment and cluster neighborhoods in the city of Toronto.
- Clustering
- Lab: Clustering
- Lab: Segmenting and Clustering Neighborhoods in New York City
- Peer-review Assignment: Segmenting and Clustering Neighborhoods in Toronto
Week 4 - Capstone Project

- Define a problem for your capstone project.
- Discuss the data that you will use to solve the problem.
- Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods (Week 1)

Week 5 - Capstone Project (Cont'd)
- Carry out the remaining work to complete the capstone project.
- Submit a link to your project notebook and a complete project report.
- Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods (Week 2)

```python
[1]: import folium

m = folium.Map(location=[45.5236, -122.6750])
```

```python
from dash import Dash, dcc, html, Input, Output, callback

external_stylesheets = ['https://codepen.io/chriddyp/pen/bWLwgP.css']

app = Dash(__name__, external_stylesheets=external_stylesheets)

app.layout = html.Div([
    dcc.Slider(0, 20, 5,
               value=10,
               id='my-slider'
    ),
    html.Div(id='slider-output-container')
])

@callback(
    Output('slider-output-container', 'children'),
    Input('my-slider', 'value'))
def update_output(value):
    return 'You have selected "{}"'.format(value)
```

❑ Need to check predictive model's out of sample performance.
❑ Model Assessment: Hit Rate, Gini Coefficient, K-S Chart, Confusion Matrix, ROC Curve, Lift Chart, Gain Chart etc.