CMPE 272 ENTERPRISE SOFTWARE PLATFORMS
BIG DATA ASSIGNMENT
PROJECT TEAM – 20

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Analytic Use Case:

Use Austin Restaurant inspection report data and spark to get the answer to critical consumer questions such as which cuisine or which area rest has more violations in past year etc.

Jupyter Notebook:

```python
import sys
import types
import pip

if not('ibm-cos-sdk' in [package.project_name for package in pip.get_installed_distributions()]):
    !pip install ibm-cos-sdk==2.0.0 -q

import pandas as pd
from botocore.client import Config
import ibm_boto3

def __iter__(self): return 0

# @hidden_cell
# The following code accesses a file in your IBM Cloud Object Storage. It includes your credentials.
# You might want to remove those credentials before you share your notebook.
client_1594450ec0974144a760d980c3d9fb8c = ibm_boto3.client(service_name='s3',
    ibm_api_key_id='xc9MHsAOK4_VHYwFgbAdnk83aTHJpY9VUvh_O4mFkDvV',
    ibm_auth_endpoint="https://iam.ng.bluemix.net/oidc/token",
    config=Config(signature_version='oauth'),
    endpoint_url='https://s3-api.us-geo.objectstorage.service.networklayer.com')

body = client_1594450ec0974144a760d980c3d9fb8c.get_object(Bucket='texasrestaurant-donotdelete-pr-lwc6rfej5xqqag',Key='restaurant1.csv')['Body']
```

```python
# add missing __iter__ method, so pandas accepts body as file-like object
if not hasattr(body, "__iter__"): body.__iter__ = types.MethodType( __iter__, body )

df_data_1 = pd.read_csv(body)
df_data_1.head()

sdf = spark.createDataFrame(df_data_1)

sdf.select('*').orderBy('InspectionDate', ascending=True).show()
sdf.registerTempTable("restaurant")
restaurant_score = spark.sql("SELECT * FROM restaurant WHERE Score"
                  " < {} order by Score".format(input(
    "Enter the minimum threshold score: ")))
restaurant_score.show()


#Show all records having date as '10/23/15'
restaurant_date = spark.sql("SELECT InspectionDate FROM restaurant WHERE "
                  "RestaurantName='{}'".format(input("To find out the inspection date, please enter the restaurant name:   ")))
restaurant_date.show()
```

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+-------------------+--------+-------------+-----+------------------+----------+----------------+
|     RestaurantName|Zip Code|InspectionDate|Score|
Address|FacilityID|ProcessDescription|
+-------------------+--------+-------------+-----+------------------+----------+----------------+
|Tortilleria Rio G...|   78753|      1/10/17|   85|900 E BRAKER LN
A...|  10239712|Routine Inspection|
|Jack in the Box #906|   78729|      1/10/17|   85|7404 MC NEIL DR
A...|  10789961|Routine Inspection|
|Lifetime Fitness ...|   78749|      1/10/17|   96|7101 S MOPAC EXPY...|  10068028|Routine
Inspection|
|OOB Java Dive - K...|   78734|      1/10/17|  100|4506 WELETKA DR
A...|  11055885|Routine Inspection|
|Cilantro's Mexica...|   78745|      1/10/17|   94|1025 W STASSNEY L...|  10019057|Routine
Inspection|
|Austin Club Carnaval|   78741|      1/10/17|   95|2237 E RIVERSIDE ...|  11200039|Routine
Inspection|
|JD's Supermarket ...|   78719|      1/10/17|   64|9111 FM 812 RD
AU...|  10964142|Routine Inspection|
|        Cipollina|   78703|      1/10/17|   79|1213 WEST LYNN ST...|   2801292|Routine Inspection|
|Spec's Wine, Spir...|   78748|      1/10/17|   99|9900 S IH
AUSTIN,...|  10211522|Routine Inspection|
|   Kerbey Lane Cafe|   78749|      1/10/17|   89|4301 W WILLIAM CA...|  10449800|Routine
Inspection|
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|        RZ Food Mart|   78750|      1/10/17|   93|9708 ANDERSON MIL...|  11401320|Routine
Inspection|
|Children's Center...|   78750|      1/10/17|   99|6507 JESTER BLVD
...|   2801078|Routine Inspection|
| San Juanita's Tacos|   78745|      1/10/17|   77|4619 S CONGRESS A...|  11415852|Routine
Inspection|
|       Asti Trattoria|   78751|      1/10/17|   88|408 E 43RD ST
AUS...|   2801708|Routine Inspection|
|MN - Carnicerias ...|   78653|      1/10/17|   94|216 E PARSONS ST
...|  11051473|Routine Inspection|
|        Texaco-Citgo|   78660|      1/10/17|   95|13701 N IH
AUSTIN...|   2803524|Routine Inspection|
|Brookdale Spicewo...|   78759|      1/10/17|   99|4401 SPICEWOOD SP...|  11207395|Routine
Inspection|
|        Milano Pizza|   78745|      1/10/17|   78|1025 W STASSNEY L...|   2801968|Routine Inspection|
|    Seoul Restaurant|   78745|      1/10/17|   84|6400 S 1ST ST
AUS...|   2801818|Routine Inspection|
|Vista Academy of ...|   78723|      1/10/17|   86|1504 E 51ST ST
AU...|  11003764|Routine Inspection|
+--------------------+--------+-------------+-----+------------------+----------+-----------------+
only showing top 20 rows

Enter the minimum threshold score: 70
+--------------------+--------+-------------+-----+------------------+----------+------------------+
|      RestaurantName|Zip Code|InspectionDate|Score|           Address|FacilityID|
ProcessDescription|
+--------------------+--------+-------------+-----+------------------+----------+------------------+
|   Ichiban at Austin|   78757|     10/23/15|   36|7310 BURNET RD
AU...|  10215188|  Routine Inspection|
|Crawfish Shack an...|   78728|      6/16/16|   45|2013 W WELLS BRAN...|  10037846|  Routine
Inspection|
|Polvo's Restauran...|   78704|     12/23/15|   45|2004 S 1ST ST
AUS...|   2801085|  Routine Inspection|
|      Mikado Ryotei|   78758|     12/16/16|   50|9033 RESEARCH BLV...|  10617884|  Routine
Inspection|
|Los Potrillos Res...|   78753|      4/11/16|   50|9120 N IH
AUSTIN,...|  10796431|  Routine Inspection|
|            Hanabi|   78757|     12/18/17|   52|2525 W ANDERSON L...|  10816678|  Routine
Inspection|
| Ramen Tatsuya I LLC|   78758|      7/10/18|   52|8557 RESEARCH BLV...|  11745144|  Routine
Inspection|
|La Casita Mexican...|   78757|       1/8/18|   52|1519 W ANDERSON L...|  10609544|  Routine
Inspection|
|       Bombay Bistro|   78704|      3/29/18|   52|4200 S LAMAR BLVD...|  10486254|  Routine
Inspection|
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|New Mandarin Chin...|   78704|      2/22/16|   53|212 E OLTORF ST
A...|   2800989|  Routine Inspection|
|Grand Oriental Ex...|   78752|      6/29/18|   53|7517 CAMERON RD
A...|  11626719|  Routine Inspection|
|La Casita Mexican...|   78757|       7/7/16|   53|1519 W ANDERSON L...|  10609544|  Routine
Inspection|
|   Mongolian Hot Pot|   78705|      7/26/17|   54|2400 SETON AVE
AU...|  11490862|1st Follow Up to ...|
|       Korea House|   78757|      4/10/17|   54|2700 W ANDERSON L...|  11232712|  Routine
Inspection|
|Star of India Res...|   78757|      4/20/16|   54|2900 W ANDERSON L...|   2800900|  Routine
Inspection|
|       Curras Grill|   78704|      4/19/16|   55|614 E OLTORF ST
A...|   2800774|  Routine Inspection|
|The Park on South...|   78704|      3/15/17|   55|4024 S LAMAR BLVD...|  11088477|  Routine
Inspection|
|Kim Phung Vietnam...|   78752|      8/23/17|   55|7601 N LAMAR BLVD...|  10009073|  Routine
Inspection|
|Sap's Fine Thai C...|   78756|       2/6/18|   55|5800 BURNET RD
AU...|  11072787|  Routine Inspection|
|Poco Loco Superme...|   78745|      2/22/16|   56|611 W BEN WHITE B...|  11258727|  Routine
Inspection|
+-------------------+--------+-------------+-----+-------------------+----------+-------------------+
only showing top 20 rows

To find out the inspection date, please enter the restaurant name:   Ichiban at Austin
+--------------+
|InspectionDate|
+--------------+
|      10/23/15|
|        2/1/16|
|      10/26/15|
|       8/15/16|
|      10/23/17|
|       3/29/17|
|        6/4/18|
+--------------+
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