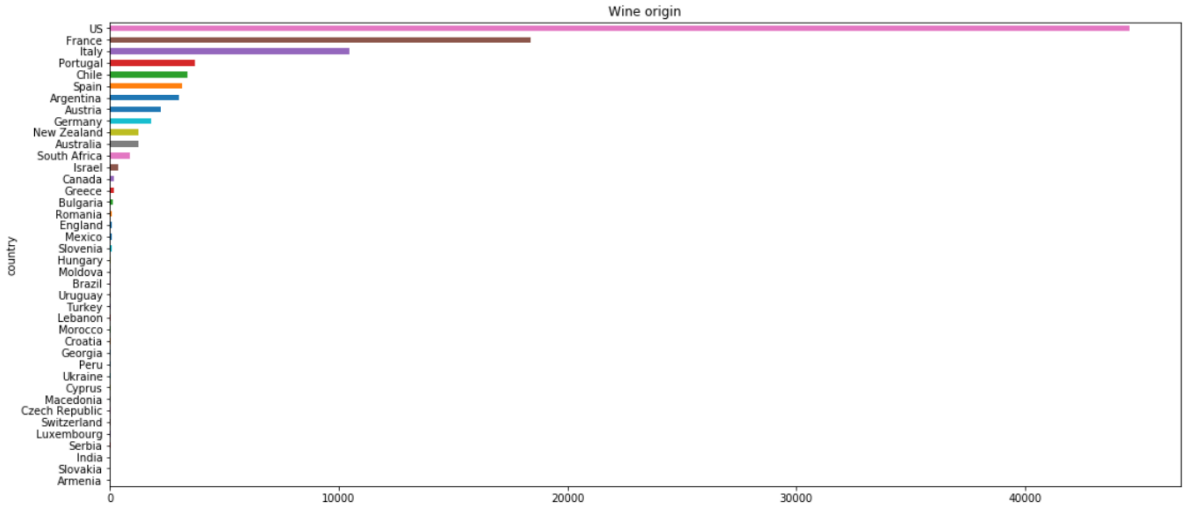
The Wine Land (Review insights)

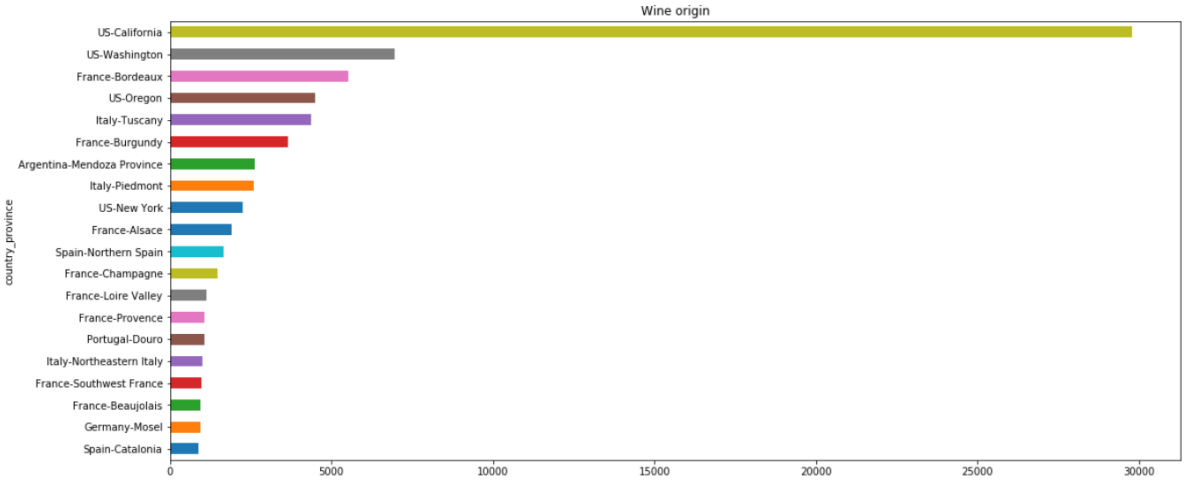
Kantesh Biswas
5th March 2020

Insights:

1. The Wine Land sales the highest number of wines produced in the US followed by France, Italy, Portugal, Chile and so on.



2. Province wise wine information for the top 20 countries.



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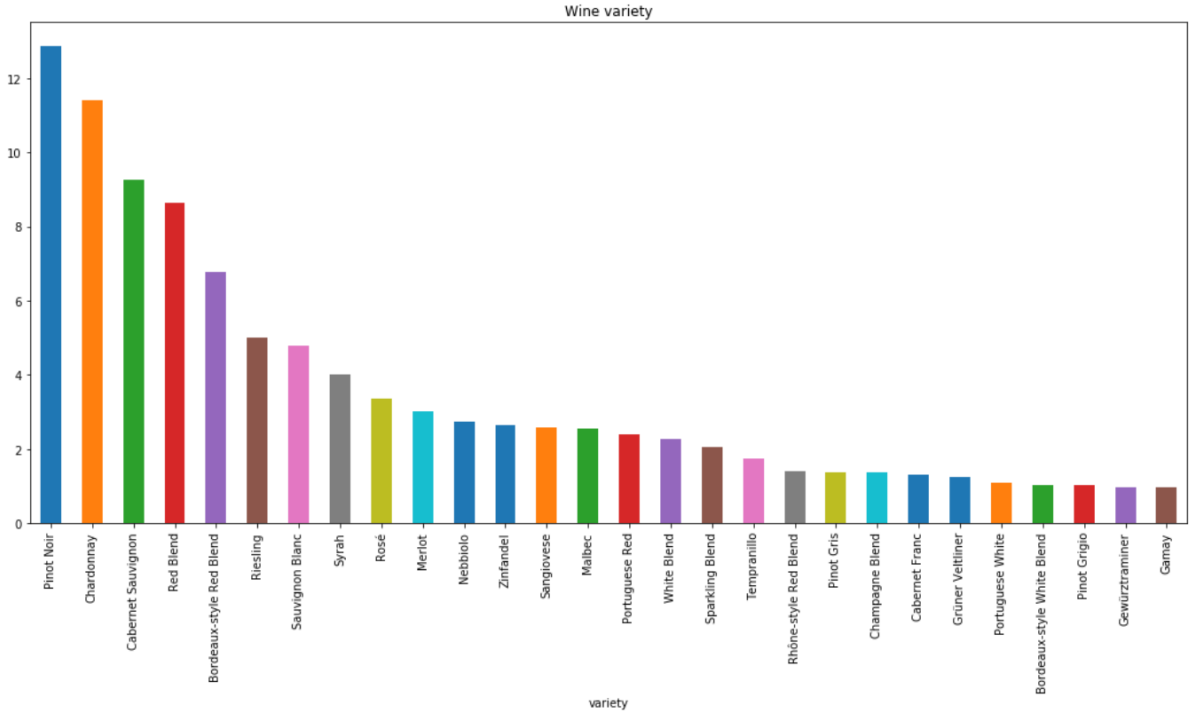
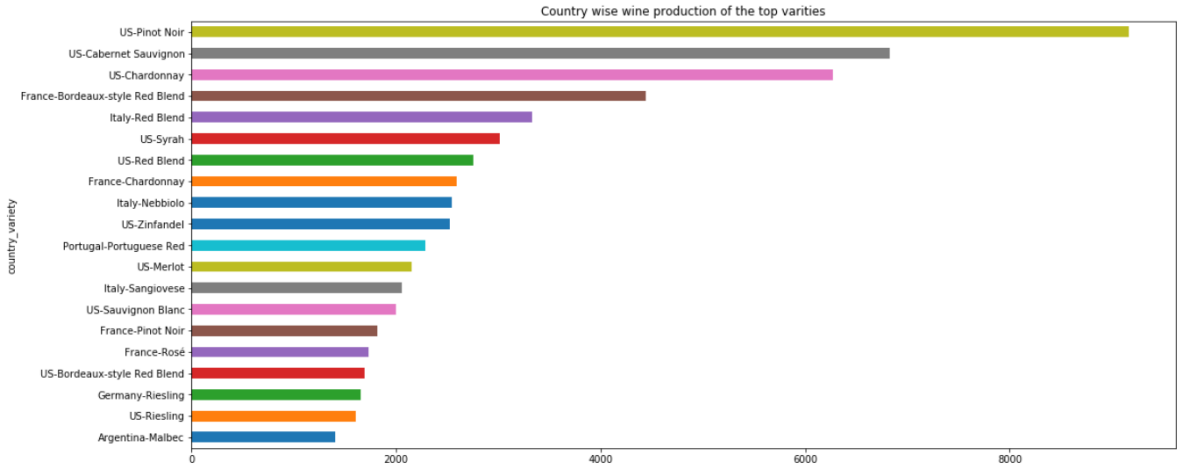
3. The top 5 most popular wine varieties are as follows.

    - Pinot Noir
    - Chardonnay
    - Cabernet Sauvignon
    - Red Blend
    - Bordeaux-style Red Blend



4. Country-wise information on the top variety of wines.



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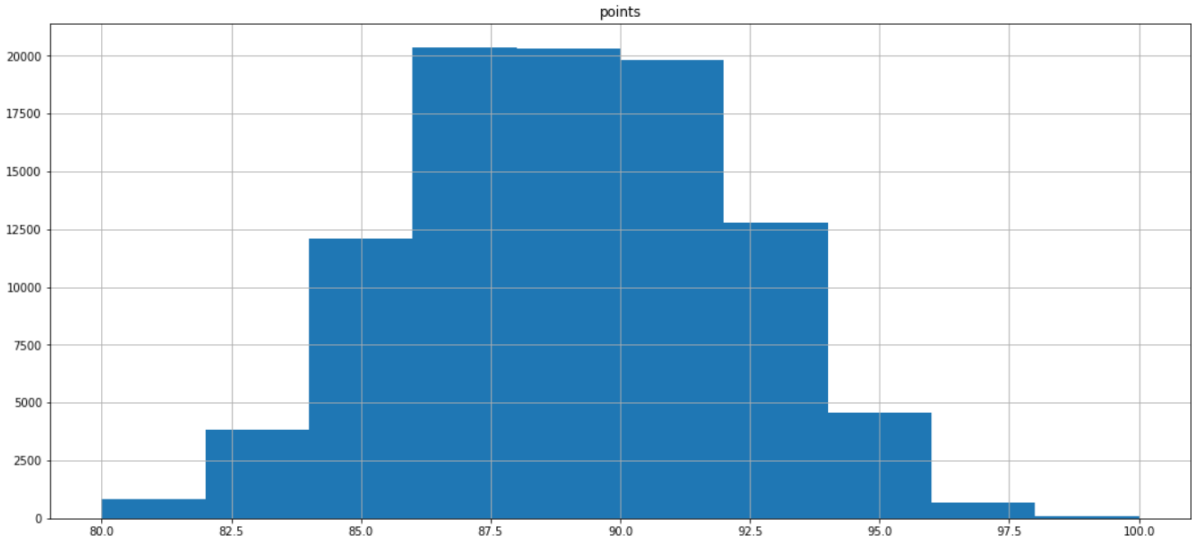
5. Ratings given by the users are normally distributed. On average a user gives a rating of 88.



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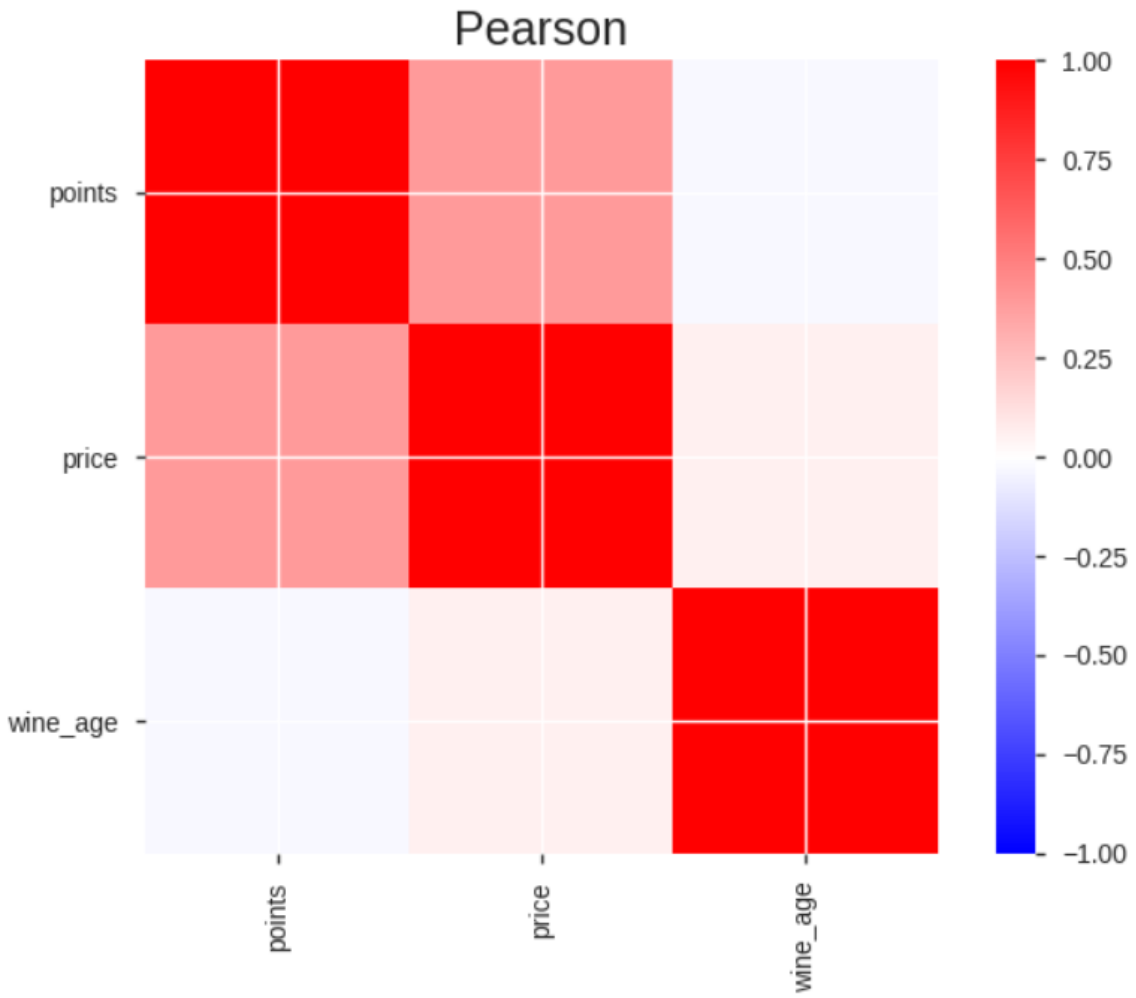
6. Wine prices and points are not highly correlated. That means it is not likely that users are giving better ratings to costlier wines.



Created a new feature of wine_age from review title column to check if the wine age has an effect on price and points. From the above plot, it is visible that it has no effects on points and very little effect on price.

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Performance metric of the predictive model:

1. Model Used: xgboost.
2. Feature: Created tf-idf feature from review description to build predictive model.
3. Classification report:

	Precision	recall	F1-score	support
Bordeaux-style Red Blend	0.57	0.70	0.63	1294
Bordeaux-style White Blend	0.58	0.31	0.41	199
Cabernet Franc	0.67	0.28	0.40	248
Cabernet Sauvignon	0.57	0.67	0.61	1768
Champagne Blend	0.76	0.41	0.53	262
Chardonnay	0.53	0.90	0.67	2173
Gamay	0.62	0.42	0.50	185
Gewürztraminer	0.73	0.45	0.55	188
Grüner Veltliner	0.71	0.56	0.62	240
Malbec	0.59	0.42	0.49	489
Merlot	0.74	0.35	0.47	579
Nebbiolo	0.69	0.70	0.70	522
Pinot Grigio	0.81	0.41	0.55	196
Pinot Gris	0.73	0.42	0.54	264
Pinot Noir	0.59	0.77	0.67	2455
Portuguese Red	0.55	0.39	0.46	456
Portuguese White	0.54	0.32	0.40	211
Red Blend	0.62	0.56	0.59	1647
Rhône-style Red Blend	0.68	0.55	0.61	268
Riesling	0.81	0.68	0.74	955
Rosé	0.67	0.62	0.64	644
Sangiovese	0.61	0.43	0.51	492
Sauvignon Blanc	0.68	0.58	0.62	914
Sparkling Blend	0.73	0.57	0.64	394
Syrah	0.71	0.46	0.56	766
Tempranillo	0.50	0.40	0.44	334
White Blend	0.74	0.49	0.59	435
Zinfandel	0.83	0.49	0.62	506
micro avg	0.61	0.61	0.61	19084
macro avg	0.66	0.51	0.56	19084
weighted avg	0.63	0.61	0.60	19084

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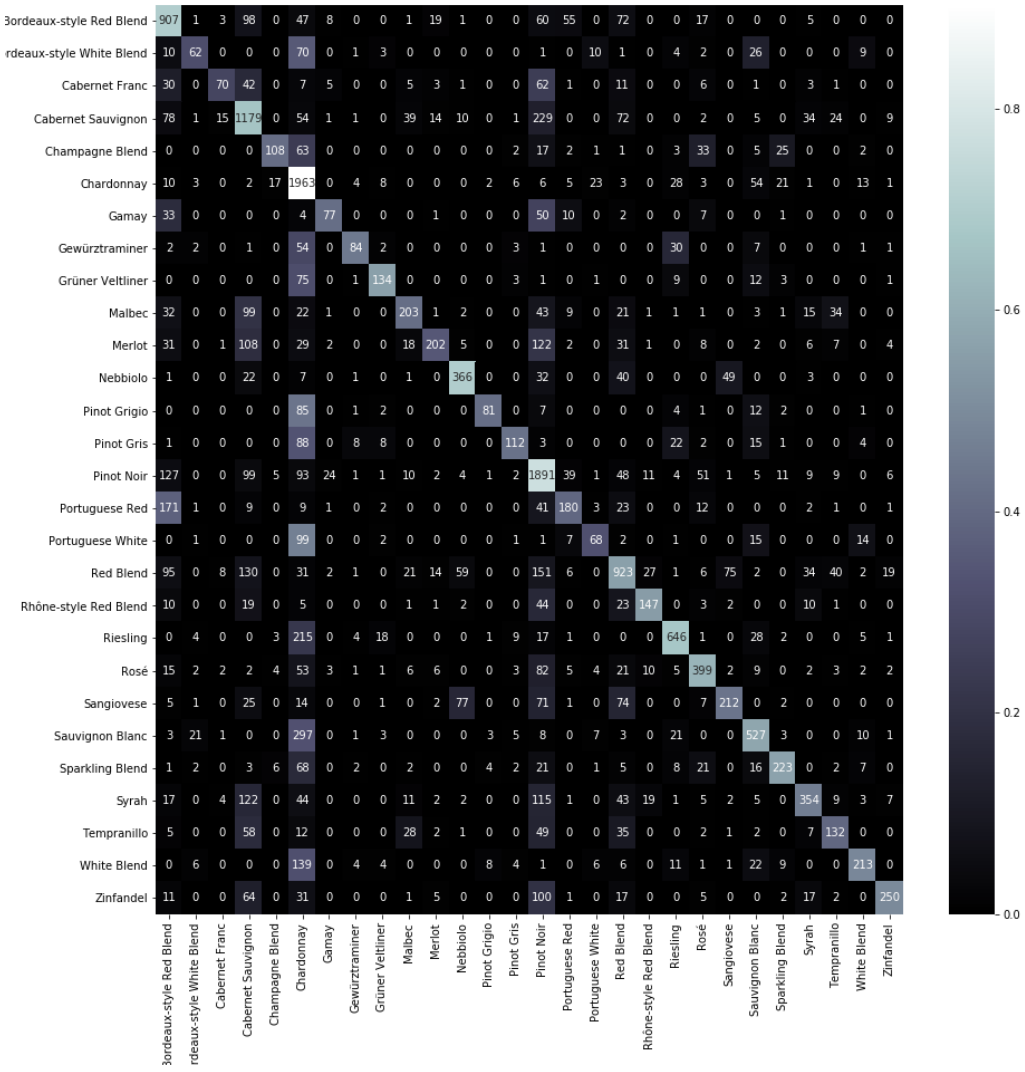
4. Confusion matrix:



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Build API: Below are the steps to build the API.

Step 1: Put the following files and folder along with the dataset in the present working directory.

Folder : templates

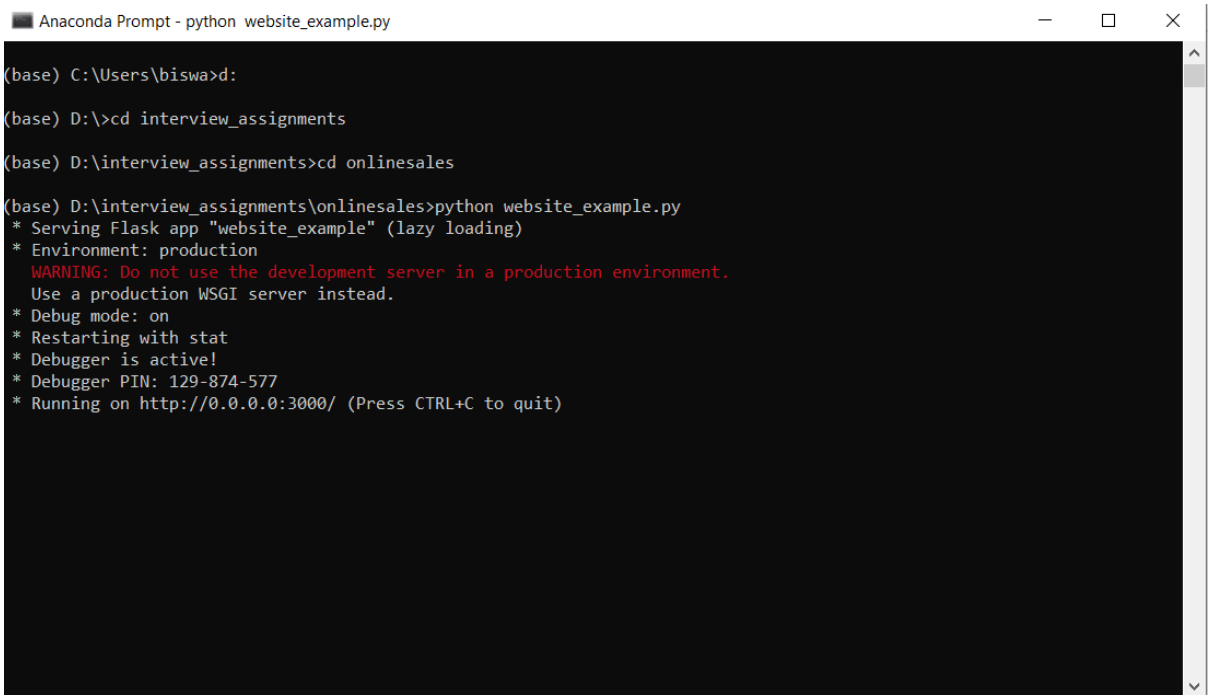
Python notebook : Build_predictive_model.ipynb

Python script : website_example.py

Run API: Below are the steps to run the API.

Step 1:

Run the python script website_example.py in the present working directory. This directory should contain saved models and other information that is required to make a prediction for new review descriptions.



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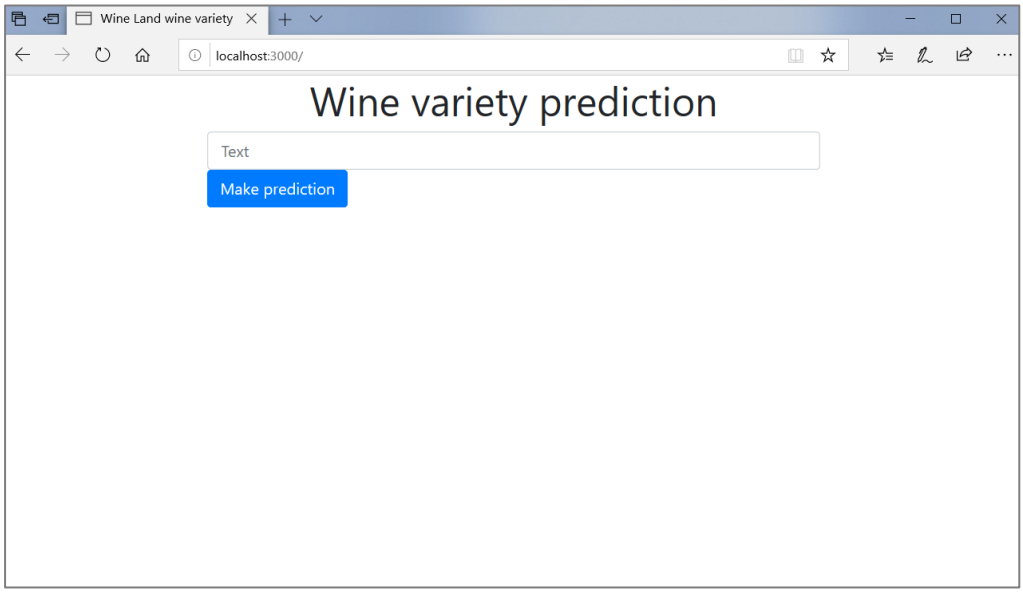
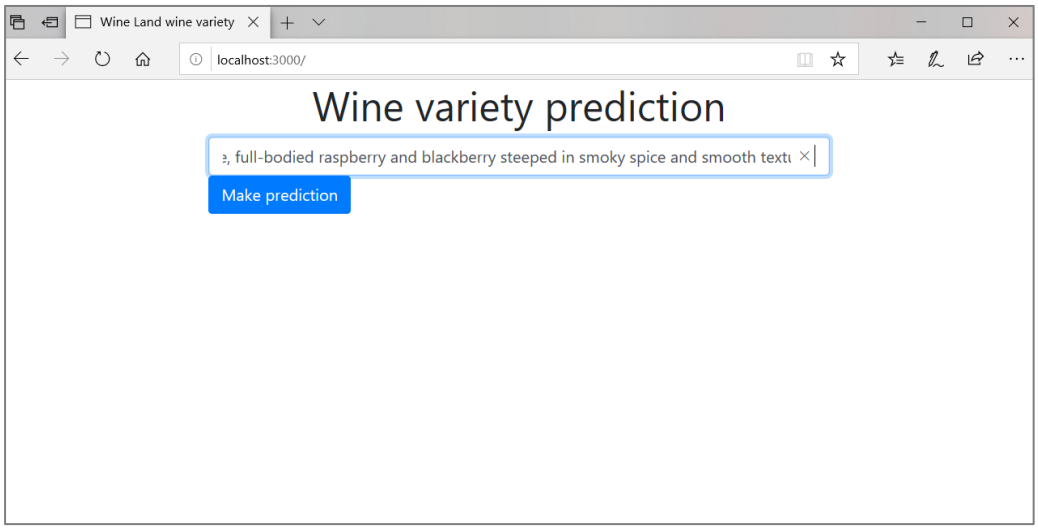
Step 2:

Go to a web browser and type localhost:3000/ to open the following webpage.



Step 3:

Type in review and click the make prediction button to display the wine variety.



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