Bean!

Coffee Bean Recommender

Objective

This project aims to connect local coffee producers with wholesale coffee suppliers. While there are numerous farms that are producing coffee, it might still be difficult for the wholesale business to learn about coffee producers and find the kind of coffee that the market wants. By introducing sources of high-quality coffee beans to the market, the 'Bean!' application helps improve the lives of local coffee producers and contributes to a thriving coffee community.

From the application interface, users can input their desired values of coffee bean attributes (aroma, aftertaste, acidity, sweetness and moisture), and then they will get a list of 15 coffee beans generated by the k-means algorithm with the data downloaded from Kaggle from the Coffee Quality Institute (CQI). Users can then go to CQI’s webpage and look for the coffee bean owner’s contact information. This application saves time for users to find out the coffee beans they want and the producers they should contact with.

Demo

Bean!

Coffee bean recommender with data from the Coffee Quality Institute

Type in the scores below for your desired coffee beans:

Aroma (0-10) | Aftertaste (0-10) | Acidity (0-10) | Sweetness (0-1(| Moisture (0-0.25 | Search

Go back to the main page of Bean!

(For more information about the owner of coffee beans, click here for arabica coffees or here for robusta coffees.)

Total cup point	Aroma	Aftertaste	Acidity	Sweetness	Moisture	Flavor	Body	Balance	Uniformity	Species	Owner	Country	Farm name	Company	Region	Producer	Processing method	Color	Grading date
90.58	8.67	8.67	8.75	10.0	0.12	8.83	8.5	8.42	10.0	Arabica	metad plc	Ethiopia	metad plc	metad agricultural developmet plc	guji-hambela	METAD PLC	Washed / Wet	Green	April 4th, 2015
89.92	8.75	8.5	8.58	10.0	0.12	8.67	8.42	8.42	10.0	Arabica	metad plc	Ethiopia	metad plc	metad agricultural developmet plc	guji-hambela	METAD PLC	Washed / Wet	Green	April 4th, 2015
89.75	8.42	8.42	8.42	10.0	0.0	8.5	8.33	8.42	10.0	Arabica	Grounds for Health Admin	Guatemala	san marcos barrancas "san cristobal cuch						May 31st, 2010
89.0	8.17	8.42	8.42	10.0	0.11	8.58	8.5	8.25	10.0	Arabica	Yidnekachew Dabessa	Ethiopia	yidnekachew dabessa coffee plantation	yidnekachew debessa coffee plantation	oromia	Yidnekachew Dabessa Coffee Plantation	Natural / Dry	Green	March 26th, 2015
88.83	8.25	8.25	8.5	10.0	0.12	8.5	8.42	8.33	10.0	Arabica	metad plc	Ethiopia	metad plc	metad agricultural developmet plc	guji-hambela	METAD PLC	Washed / Wet	Green	April 4th, 2015
88.83	8.58	8.42	8.5	10.0	0.11	8.42	8.25	8.33	10.0	Arabica	Ji-Ae Ahn	Brazil					Natural / Dry	Bluish-Green	September 3rd, 2013
88.75	8.42	8.33	8.5	10.0	0.11	8.5	8.25	8.25	10.0	Arabica	Hugo Valdivia	Peru		richmond investment-coffee department		HVC	Washed / Wet	Bluish-Green	September 17th, 2012
88.67	8.25	8.5	8.42	9.33	0.03	8.33	8.33	8.5	10.0	Arabica	Ethiopia Commodity Exchange	Ethiopia	aolme		oromia	Bazen Agricultural & Industrial Dev't Plc			September 2nd, 2010

Data

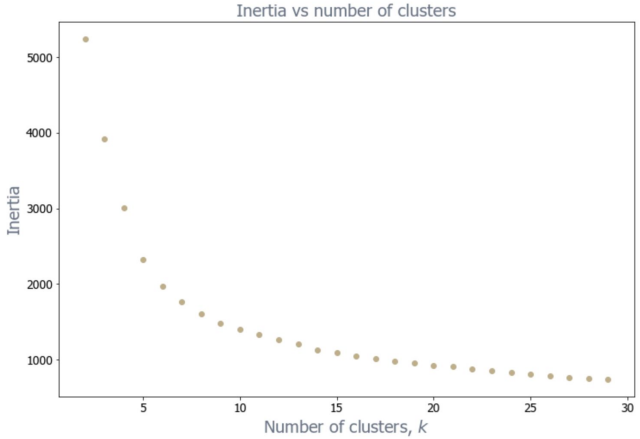
This Kaggle dataset was scraped from the review pages of the Coffee Quality Institute in 2018. Coffee Quality Institute (CQI) is a non-profit organization working internationally to provide the ratings for coffee bean quality since 1996. The data contains owner’s information and attribute scores for 1312 arabica and 28 robusta coffee beans that were given by the CQI's trained coffee bean reviewers.

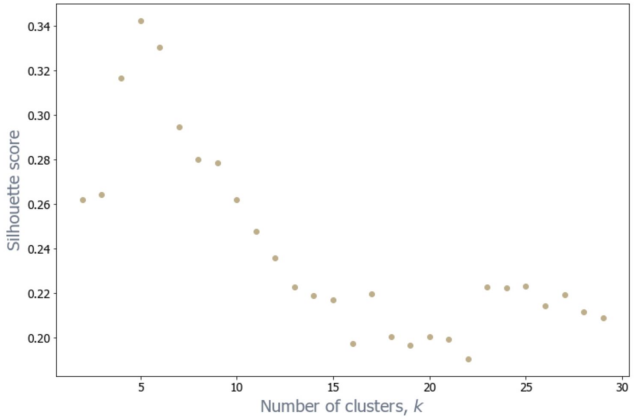
Features used in the K-means clustering analysis:

- Aroma
- Aftertaste
- Acidity
- Sweetness
- Moisture

Model

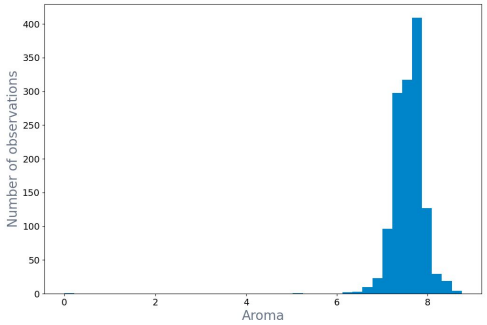
The recommender was built upon K-means clustering method. The optimal number of k = 5 was chosen from the Inertia and Silhouette plots. This number of clusters should generate distinct groups that contains coffee beans with very similar selected attributes.

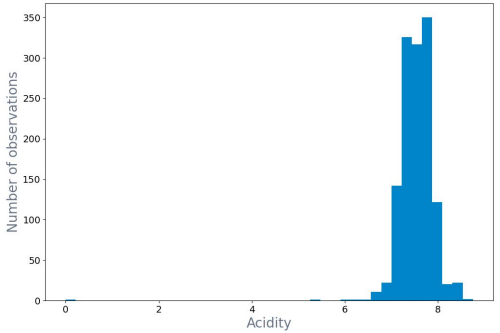




Insights

- The attribute ratings for different beans are very similar. The distinction between different clusters is hard to tell.
- CQI is a good platform to learn more coffee bean farms around the world. The coffee bean ratings are updated frequently. For this application, it would be nice to have database that is updated with the website.





Thank you!

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