AgriBot: Agriculture-Specific Question Answer System

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Introduction

Kisan Call Centre

Operational Hours : 6 AM to 10 PM*

92% redundant calls

in 2017

5% unique queries

In 2018

*http://dackkms.gov.in/account/aboutus.aspx

Introduction

21% increase
In calls from 2017 to 2018

Most Common Questions

Total Number of Pairs	99,568,354
Year 2017	13,613,465
Year 2018 (Till October)	17,265,241

What is the weather?	79.4%
How to control of zinc deficiency in wheat?	2.3%
Information regarding macro nutrient management?	1.76%

Similar Works

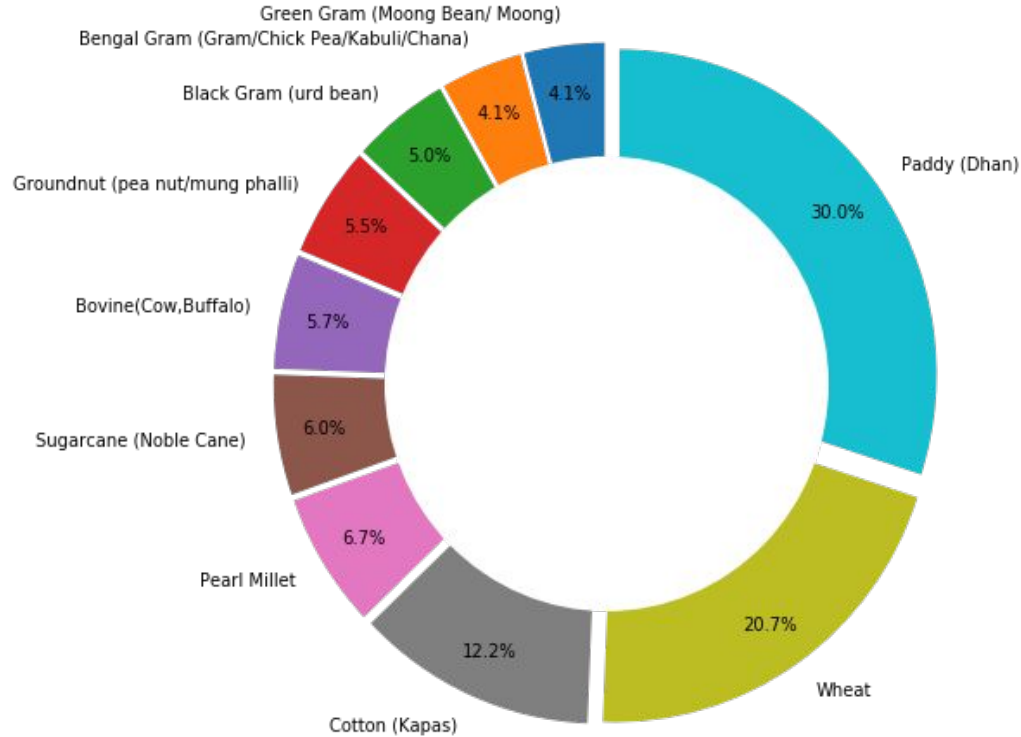### Farmers Portal

Language and Technology barrier

AgriApp

Human Chat Service

Kisan Call Centre
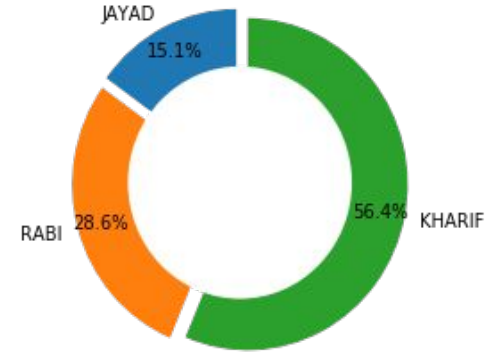
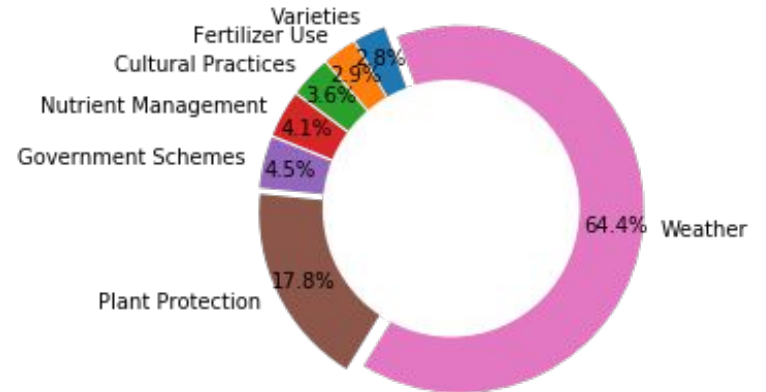Availability
High operating costs

Dataset

Top ten crops in queries
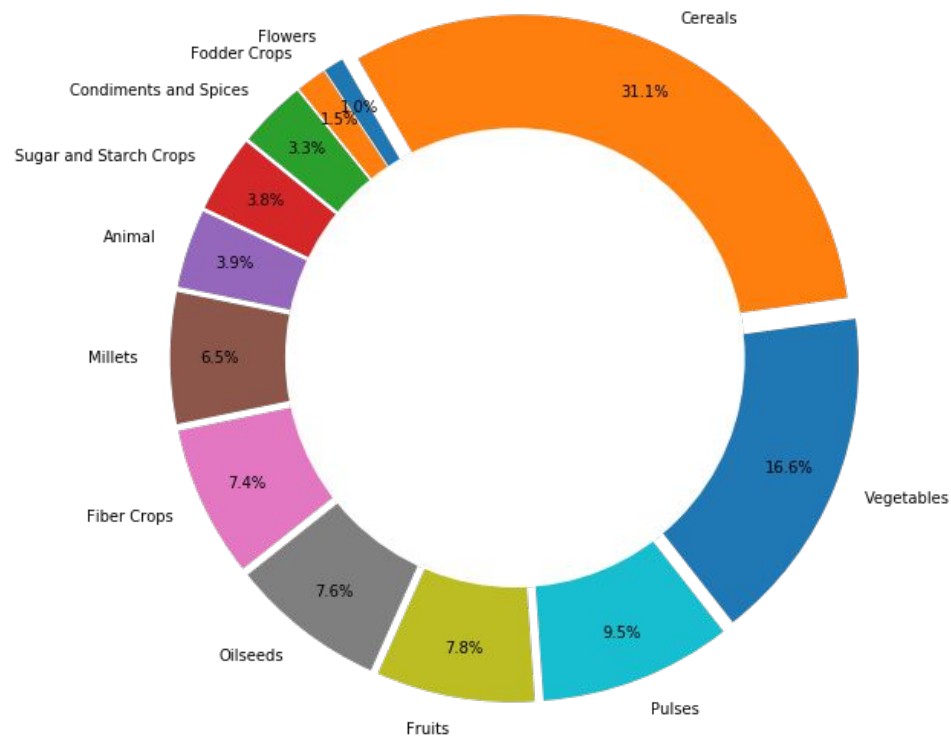
Distribution of queries according to season
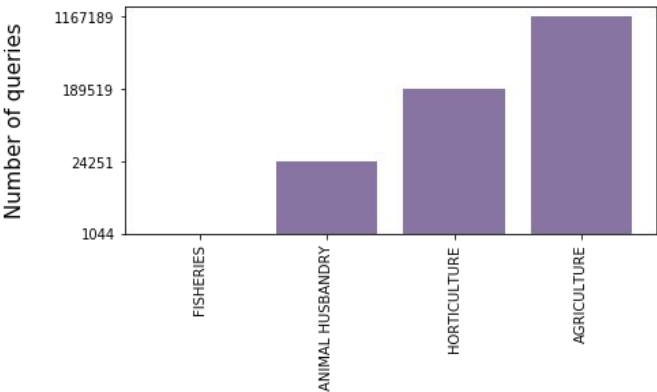
Frequently asked query types
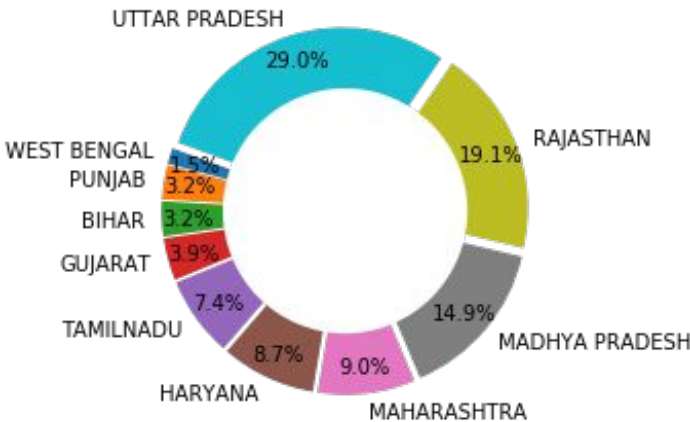
Dataset

Classification of queries asked into categories

Sectors from which queries are asked

Query distribution based on States

Challenges

Data Collection

Difficulty in availing and compiling data

Data Format

Improper pattern,
Grammatically incorrect sentences,
Spelling errors

Multi-Lingual

Diverse low resource languages

Absence of Ground Truth

For model verification, tuning and accuracy

Challenges

Data Collection
Difficulty in availing and compiling data

Solution
Downloading data.gov.in website using special crawling techniques

Data Format
Improper pattern, Grammatically incorrect sentences, Spelling errors

Solution
Applying Natural Language Processing Techniques
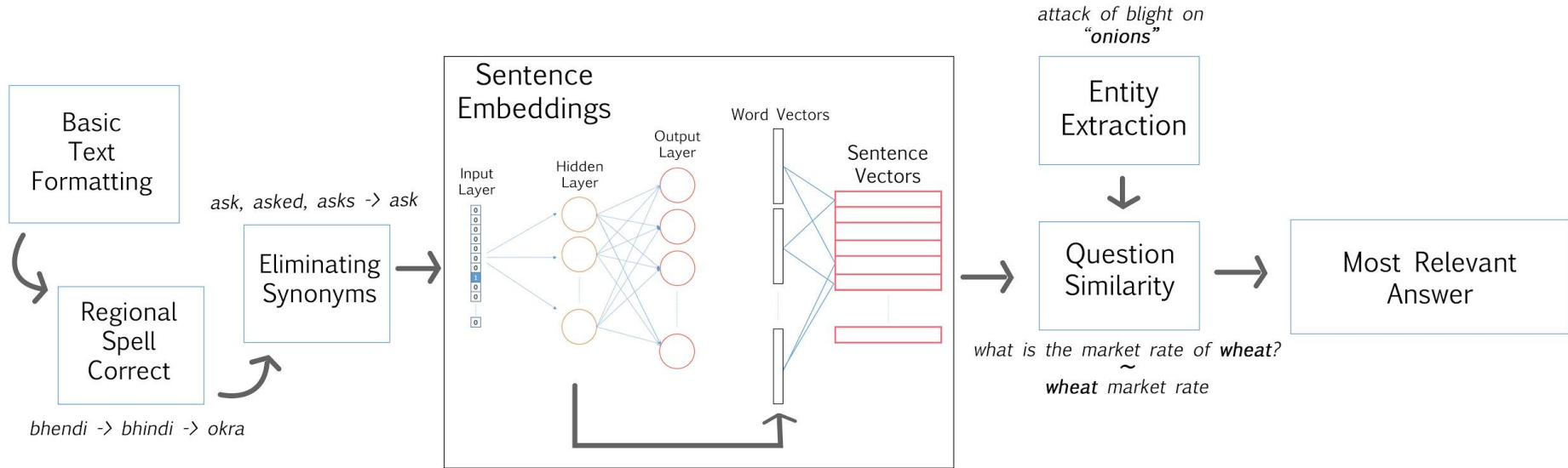
Absence of Ground Truth
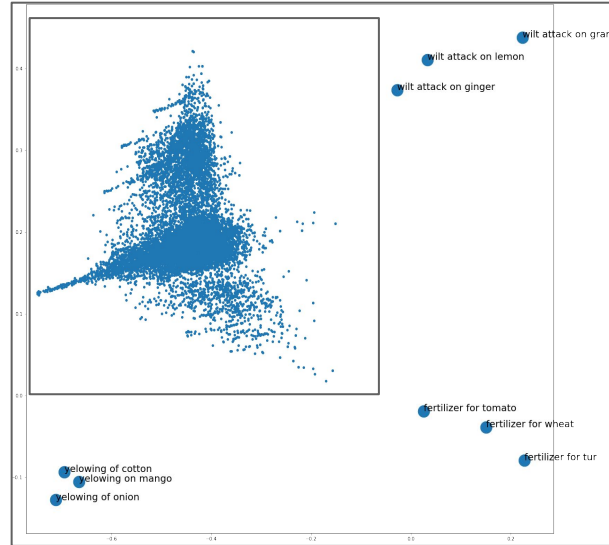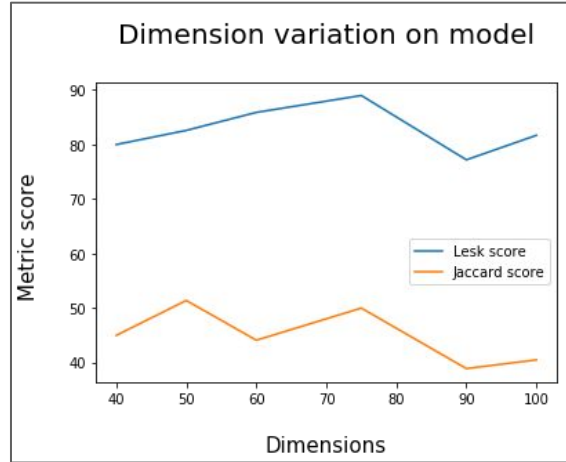For model verification, tuning and accuracy

Solution
Manual labelelling and Metric development

Methodology

Results

Dimension variation on model

	Metric – 1	Metric – 2
Top – 1	64 %	86 %
Top – 3	69 %	89 %
Top – 5	70 %	**91 %**

Optimised accuracy at
75 dimensions

Clustering of similar sentence
Entity Extractor required

Accuracy value on Test Data
(20 % of Dataset)

Future Work

Better Prediction Model

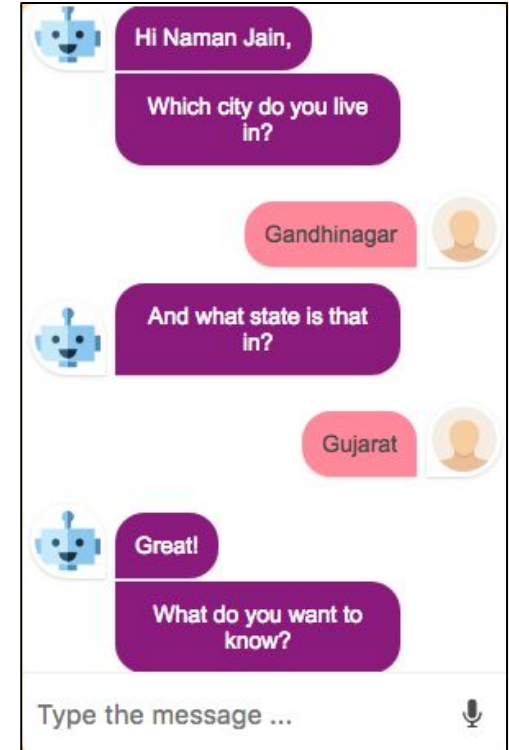Improve the accuracy of question answering for deployment

Crop Detection

Diseased Crop Detection
Lifecycle Detection

Try it yourself:

http://agribotchat.appspot.com/

Hi, I am Agribot! I am here to help you.

May I know your name?

Type the message ...

Let's Chat with

AgriBot

Hi Naman Jain,

Which city do you live in?

Gandhinagar

And what state is that in?

Gujarat

Great!

What do you want to know?

Type the message ...

Thank You!

Visit us

agribotchat.appspot.com

Contact us

teamagribot@gmail.com

https://mayank4490.github.io/