* **Show multiple user stories end-to-end**
* **Show all key functionality: a demonstrator should demonstrate how the team believe all objectives of the project are met**
* **Show key aspects of the technical stack and cloud infrastructure, including where possible aspects of scalability**
* **Give an insight into how the evaluation was undertaken, for example show how data was captured, and how key elements or the project were technically evaluated**

(Aditya to make changes to intro based on the first 3 slides script of the final presentation)

Hi this is XXX and I will take you through a quick demo representing the main aspects of our project. As it’s clear from our presentation, we have two paramount features for the end-users: 1) Website 2) Chat-Bot.

Although the data for COVID-19 is available on various platforms, it occurs to be scattered across various aspects and doesn’t tend to be as appealing as one would wish it to be. Our website and chat-bot together aim to offer a solution to this, by providing readily available information curated through various reliable sources of information, in the form of visualizations or through interaction with the Chat-bot.

I will be explaining to you all the aspects of the project with the help of various User-stories revolving around the topic.

**User Story 1:** This user wants to know what are the main symptoms of COVID-19. He wants to get detailed information regarding all the symptoms that have been associated with COVID-19 so far. He wants to get information on how to make use of preventive ways/healthy habits to tackle the virus altogether.

***To get the information, the user would need to navigate to the symptoms page using the Information drop down tab on the main page.***

***Once the user reaches this page, the information regarding symptoms of the virus is explained in detail.***

*Explain in the demo all the static web-pages. (No need to read this, directly start with symptoms)****(SYMPTOMS)****This page explains in depth the symptoms that relate to the on-going virus, ranging from mild to severe one’s whilst also providing details on whom to contact in terms of emergency situations.*

***If the user is interested about other useful information or wants to move to another page, there is a left pane on the screen that would aid the user in navigating to other pages of important information.*** *(****PREVENTION****)  
This page explains suggestive measures that one could take in order to prevent from getting into close contact with an already infected person and other healthy habits to follow to keep oneself safe and healthy.*

***(FAQ****)  
We also have one section here entirely dedicated to the known facts about COVID-19, explaining most common doubts around the whole situation.*

**User Story 2:** This user is the one who’s specifically interested in **visualizing** the data, he/she wants to take in as much information as possible with the help of various visualizations displayed on our website as a whole.

**Scenario 2A**: User who wants to see the entire global data. This user wants to get statistical data pertaining to the whole world.

*Explain the Web-Page pertaining to the World Map, top 10 countries with confirmed/deaths/recovered cases and the world-wise trend.*

***In this case, the user would have to hop on to our HOMEPAGE in this way. He then needs to scroll the entire web-page to see the visualizations in store.***

***(World Map)***  
The World Map provides all of the data which the user would want to know at one glance. It shows the confirmed/deaths/recovered/critical cases in addition to the death ratio/recovery ratio along with the tests done by those countries.

***(Top 10 Visualizations)***The Top 10 visualizations over here provide data regarding the countries with the most number of deaths/confirmed and recovered cases This helps the user know the countries worst affected due to the virus and lets them know who’s recovering in a fast pace.

***(Country-specific Trend Visualization)***  
This is the World-wise Trend Visualization. It displays the trends observed in each of the countries in terms of Active/Confirmed/Deaths/Recovered cases. With the help of this filter, we can see how the different trend lines give detailed information when we hover over the different dates.

**Scenario 2B:** User who’s interested in Ireland’s data. He wants to know the statistical data pertaining to the country as a whole/differentiated into various counties.

***Again for this, the user needs to use the options provided on the Information button to hop onto the web-site dedicated to Ireland. Here, he’d be able to see the visualizations in the following order as he scrolls.***

*Explain the Web-page pertaining to Ireland data.  
  
(****Ireland Map)*** *The Ireland Map visualization shows confirmed cases per county and the population for that county as well. It also shows the case by population ratio.*

***(Trend Visualizations)*** *(There are 4 trend graphs)*

1. *Trends that have been observed in terms of the TOTAL number of Confirmed cases and Deaths recorded in Ireland starting from the first case recorded in the country up until the latest date of update. This is a cumulative recorded trend.*
2. *Trends that have been observed in terms of Confirmed cases and Deaths recorded in Ireland starting from the first case recorded in the country up until the latest date of update, corresponding to each day. This is a day-wise recorded trend.*
3. *Trend in terms of Confirmed Cases in Ireland, this one shows how the cases have been recorded for each day since the detection of the first case of COVID-19.*
4. *Trend in terms of Deaths Cases in Ireland, this one shows how the number of deaths have been recorded day-wise.*

***(Bar Chart - Confirmed Cases County-wise)*** *This is a bar chart visualization which provides detailed information about the worst affected counties in Ireland due to COVID-19, it particularly shows those counties with more than 400 cases so far. We can see that Dublin has the highest number of cases, with more than 12K cases so far.*

***(Hospitalized cases)****.  
This visualisation displays how the hospitalized cases for COVID-19 have been recorded so far. We’ve divided the hospitalized cases into different age-groups as you can see. We know how grave this virus has been on the old-aged people specifically. And that’s what we can see here, most of the hospitalized cases were recorded for the aged people (65 and up).*

**USER story 3**User story 3 consists of a user that is interested in fetching data from our Chat-Bot as specifically as he can. They are interested in getting statistics regarding COVID-cases by interacting with the Bot.   
This consists of 2 scenarios:  
**First scenario c**onsist of a user wanting to get statistics for any country in the whole world  
**Second scenario** consists of a user wanting to get statistics for Ireland specifically.  
Now, I’ll show you these two cases.  
  
***CASE 1****Type “Can I get statistics”   
Bot: “Which country would you like to know about?”  
Type “Brazil”  
Bot: “What type of Covid Records would you like to know about?”  
Type “Death”  
Bot: “Which date”  
Type “15 June 2020”  
Bot: “There were 43959 of Death Cases in Brazil on 2020-06-15”****Case 2*** *Type “hi”  
Bot: “Hi! How are you? What is your name?”  
Type “Name”  
Bot: “Hi Apurva, How can I help you with COVID-19 Statistics”  
Type “show me the stats for India”  
Bot: “What type of Covid Records would you like to know about?”  
Type: “Confirmed”  
Bot: “Which Date”  
Type: “There were 1024 of Confirmed Cases in India on 2020-03-29”*

**User-Story 3:** This user is interested in fetching data (AS SPECIFICALLY AS THEY CAN) from the Chat-Bot as he likes. Here, the user has the ability and flexibility to query our Bot as per his liking. He can get the data for a country of his choice, for the type of record he wishes to check for on a date of his choice starting from 22nd January to the latest update.

***After having gone through all the visualizations and web-pages available on our site, a user would want to interact with our BOT to get to know statistics as specifically as he wants. Our BOT is available at all times on the right-bottom side of our website with a prompt saying “Hi! This is CovidBot, Need help?”. The user could start interacting with it by clicking on the Bot and icon and “Start New Conversation”***

**Scenario 3A:** User interested in World Data.

He’s interested in getting precise statistics for the Countries that he wishes to know the statistics of, the type of cases he’s interested in (Confirmed/Active/Deaths/Recovered) and on which dates specifically. He can query the data from amongst a list of 186 countries.

*Give two-three examples (one for maybe each category : Active/Deaths/Confirmed/Recovered)*

***CASE1*** *Type “hi”  
Bot: “Hi! How are you? What is your name?”  
Type “Name”  
Bot: “Hi Apurva, How can I help you with COVID-19 Statistics”  
Type “show me the stats for India”  
Bot: “What type of Covid Records would you like to know about?”  
Type: “Confirmed”  
Bot: “Which Date”  
Type: “There were 1024 of Confirmed Cases in India on 2020-03-29”*

***CASE2****Type “Can I get statistics”  
Bot: “Which country would you like to know about?”  
Type “Brazil”  
Bot: “What type of Covid Records would you like to know about?”  
Type “Death”  
Bot: “Which date”  
Type “15 June 2020”  
Bot: “There were 43959 of Death Cases in Brazil on 2020-06-15”*

**Scenario 3B:** User interested in Ireland Specific Data

User is interested in getting the statistics for Ireland (for the Country or for different counties separately. He can request the data for the confirmed cases per county till the latest date of update.

*(Give examples for Ireland-specific data)*

*Type “Active in Ireland”  
Bot “Which Date”  
Type “07 April 2020”  
Bot “There were 5474 of Active Cases in Ireland on 2020-04-07*

*Type: “hi”*

*Bot: Hi aditya, You can say "Statistics" to know about global statistics or you can ask me about County wise confirmed data for Republic of Ireland*

*Type “Confirmed cases for dublin in ireland”  
Bot “For which date would you like to know about?”  
Type “30 july 2020”  
Bot “There were 12520 confirmed cases in dublin on 2020-07-30*

*”*

**Technical Stack:**

There are a lot of technical aspects which we have used for our project and I will be listing some major tech we have been using. Python is our coding language which we have used for all the data aspects allowing for ease of scalability

. For the chatbot we have opted for AWS lex service which comes with designing your own intents and writing your own lamda functions which is again an AWS service. The service was very limited in terms of flexibility and is an area where we can scale in the future using a different tool.

. As for visualizations the best suited for our project is Tableau online. We were able to visualize our data in a very simple and understandable way using tableau and we could also connect the cloud database to tableau so that the data is dynamic. However it did not support sharing dashboards with the general public, which is only available for premium users in tableau server which could be used to easily scale our project.

Considering our project needs, for cloud we have used Azure; wherein we could create our own database and store the data in multiple tables. Azure pipelines were very useful to pick the data from a local file and push them onto the cloud.

***EVALUATION!***We performed an online survey based assessment and used Google Forms for the evaluation. Google Forms were chosen so as to allow the users evaluate our project with a focus to gain their reviews on the main elements of our project.  **There were 3 Key elements that we evaluated:** *1*)BOT/Visualizations  
2) Task Completion  
3) User Experience and response time

**BOT**: With respect to the Bot, we provided them certain scenarios well-explained with steps in order for them to effectively interact with the Bot. To evaluate the Bot’s functionality, we asked them reviews about the time-taken by the Bot to reply, had them verify the answers replied by the bot by comparing them with the visualizations   
**Visualizations**: For all the visualizations on our Website, we made use of the Likert Scale (Poor,Fair,Satisfactory,Very Good,Excellent) and asked them to provide their ratings on how well they liked a particular visualization. etc

**Task Completion:**

The user was provided with two different tasks in the survey forms, first was the interaction with the bot where the user was provided with multiple steps to interact with the bot. If the response matches that means the task is complete. The same goes for the visualization task   
  
**User Experience/Satisfaction**: In terms of user experience, we asked the reviewers whether -- they were satisfied with the overall website and the information that it is trying to convey,   
-- if they could easily access and interact with the website  
-- if they found our Bot easy to use and well-interactive  
We asked them if they would want the information conveyed with the help of visualizations or through the Chat-Bot. We also asked them what more they would like to see on our Website as a whole and which part of the entire project did they find the most valuable or useful.

***Key elements -***

* ***Bot***
* ***Visualizations in general(How the visualizations were technically evaluated as a whole. The steps used to evaluate each visualization thoroughly should be the same)***
* ***The User experience with the application.***
  + ***Time taken load, other metrics including response times, technical functionality tests making sure each aspect of the application works as intended.***
  + ***Bot being visible etc.***

**Evaluation**

We monitored the metrics of the bot and were able to find that the bot is able to do speech for 15 sec, no scalability issues as scalability of the lex is handled by AWS. Amazon scales to your needs and does not impose bandwidth constraints. As for our scope the lex can only support US English languages. The Lex metrics also shows us if there are any requests which are missed or the bot cannot answer the user request, such requests are easily monitor those.

Give an insight into how the evaluation was undertaken, for example show how data was captured, and how key elements or the project were technically evaluated

**How evaluation was undertaken**

**How key elements were evaluated.**

**For each section of the platform we thoroughly asked each user whether they found them useful/ it contributed towards the overall vision of the platform.**

**We also asked them to critically analyse each design choice and technical solutions used for each aspect of the project including the use of Visualizations as well as the application of the natural language interface bot.**

**Carried out two core evaluation methods for the project**

**Built scenario wise, user-based test cases to test the overall functionality of the webpage with different users and different platforms.**

**Online survey based assessment and feedback forms using Google Forms: Used to monitor the ease of use of the application for users of different types.**

**We are reviewing the feedback received and accordingly make changes to make sure the application is more intuitive and is able to function better in regards to the overall user experience.**

**How to use the evaluation to improve certain aspects.**

**you may learn that a specific feature**

doesn’t work as you expected it to, and you get some insights into how to improve it. How the bot was not as apparent as hoped, and required more effort from the users side to achieve the result rather than it being as intuitive as required.

Technical challenges: bot issues

Cloud migration from aws to azure.

Django issues