SNOWRS

ServiceNow recommendation System

Abstract

An NLP based System to provide customers a recommended solution before getting one from the technical team. Also to remove wrong routing of tickets to improve overall SLA

Team SnowRS

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Abstract

In an IT Operations Sector an Average 70000 Man hours is lost due to Wrong assignment of tickets by the users. If the supporting teams are not familiar with an issue and how it should be routed, It will cause delay in incident resolution and leads to business impact. This can become frustrating for the customer and will have huge impact on business in terms of man hours and also in terms of productivity.

Faster incident resolution can be considered to be of at most importance from a service and customer perspective. The time taken for incident resolution will increase if

- the tickets are assigned to wrong team
- the ticket receiving team is not familiar with the said issue

The proposition is to implement a ticket recommendation system based on natural language processing(NLP). The interactive ticket recommendation system will recommend the most relevant ticket details including the functional group and resolution. This makes the ticketing process simple, efficient and customer friendly.

The textual data from issue description and work notes can be processed to create a feature matrix, which can accurately predict most correlated tickets from the history and can be used to create an interactive ticket recommendation system.

Teams which uses tagging with the tickets can be applied with supervised clustering techniques and teams with no proper tagging system can use unsupervised clustering technique. Once implemented, this system can be used to trigger recommendations as well as automations by utilizing the Rest API services of ServiceNow.

WorkFlow

User creates Ticket in Service Now

Solution

Predictive model classifies the tickets and provides known solution to the user by a popup window or email

Solution

Provides insights from the most similar ticket to the user and corrects common mistakes like wrong assignment group

Better User Experience

Faster Issue resolution

Cost Savings

System Requirements

- ServiceNow Environement
- Cloud instance to run the webapp for recommendation System

Development Phase Requirements

- Standalone AVC
- Integrated Development environment (preferably Jupyter notebook)
- Snow testing instance with admin account and servicenow orchestrator service
- Aws or Azure account with storage for deploying the webapp

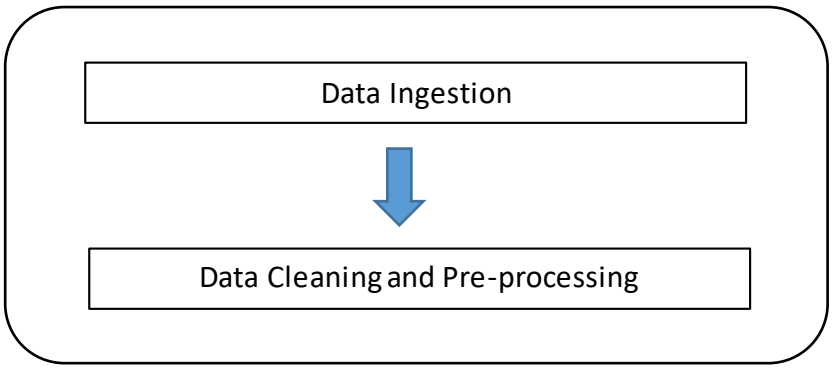
Technical Expertise Areas

- Servicenow
- Python
- Flask
- Rest API

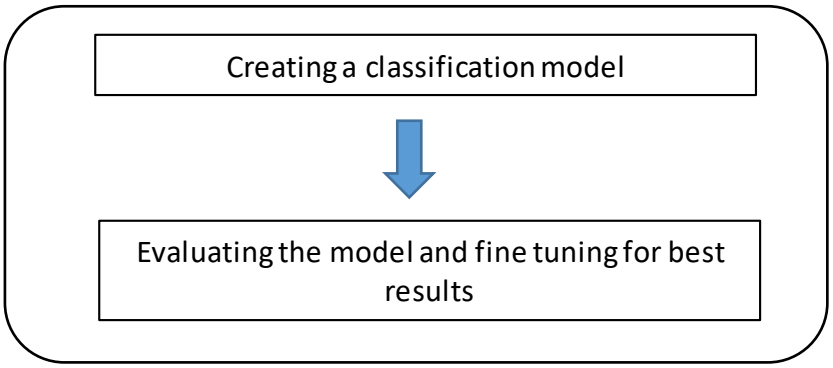
Implementation Plan

- ✓ Data Ingestion from ServiceNow (SNOW)
  - Using REST API provided by SNOW
- ✓ Parse the JSON file and obtain the dataset (corpus) for training
- ✓ Implement common NLP techniques for Data cleansing (removal of stop words, stemming, etc)
- ✓ Convert the document into a trainable model by converting the words into a vector format
- ✓ Visualize the model to find the relationships between the features and apply feature engineering.
- ✓ Classify the model by supervised or unsupervised classification techniques depending on the data insights
- ✓ Train and test the data using multiple algorithms by creating a data pipeline and optimise for maximum accuracy
- ✓ Deploy the model on AWS\AZURE using Flask or Django
- ✓ Integrate with SNOW REST API
- ✓ Expand the solution globally.

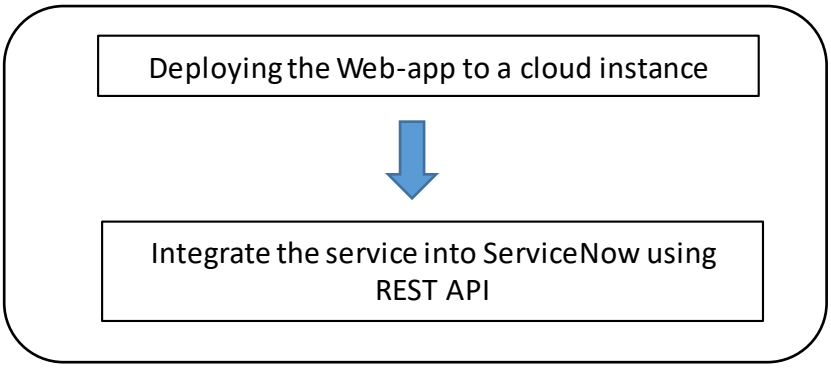
Phase I



Phase II



Phase III



Conclusion

- The SnowRS will be able to Improve User Experience and Makes the ticketing process Customer centric.
- Saves the time lost in wrong routing of tickets and thus brings huge value to business
- Can be used as a knowledge system for the user and will help in solving simple issues without a ticket.

Future Addons

- SnowRS can be integrated with a Chabot for extended support
- Extend to an automatic ticket **resolution** system for common issues