



ശ്രുതി - A MALAYALAM VOICE ASSISTANT FOR THE NATIVE LANGUAGE USERS

PROJECT MEMBERS

ALEN GEORGE
JOEL RAJU
ROSHAN ROY
SAN BABY FRANCIS

PROJECT GUIDE

MS. ASHA JOSEPH
ASSISTANT PROFESSOR
DEPARTMENT OF CSE
VJCET



INTRODUCTION

- Today, though most people have access to the internet, language is still a barrier to many.
- Most systems use English as their primary language and many non-english speaking users would find it difficult to work on these systems.
- This is especially true for the elderly who have little knowledge of English and the differently abled who have trouble using these systems.
- This project aims to bridge this gap by providing an interface so that the users can interact with the computer in their native language.
- Sruthi is intended to act like a voice assistant that can recognise the native language of the user.



OBJECTIVE

- To create a voice recognition system that would process real time speech in Malayalam, perform the required computational task and would provide the real time feedback as speech in Malayalam.





LITERATURE SURVEY

- Though there exists regional voice assistant systems for smartphones (Google Assistant support Malayalam), there are no commercial systems for Desktop computers.
- “Voice Assistant using Python” published in IJIRT (July 2021) discusses various voice assistant features that can be implemented using Python and its libraries.
- This paper drew our attention and gave us inspiration to come up with a novel idea – a Python Voice Assistant that supports Malayalam.



PROPOSAL

- To build a fully working voice recognition system that can respond to basic user needs (tell the time and date, read out Wikipedia articles, play YouTube videos, etc) using Python and various supporting libraries.
- The system must have accessibility features that would enable the blind to easily interact with the system.

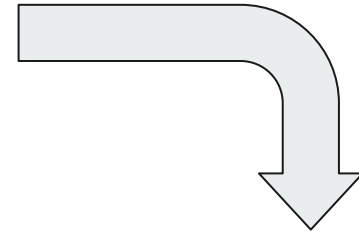


OUR WORK


- Sruthi is programmed using Python. Ours is a simple program that listens to the speech output provided by the user, looks for relevant keyword and performs the action required.
- The program uses the *SpeechRecognition* library which in turn uses the Google Speech-to-Text API to recognise the voice input provided by the user. Google STT supports Malayalam speech recognition.
- Once the speech is recognised, it proceeds to the next step, ie, keyword detection.

- Sruthi is programmed to respond to certain keywords in speech. It carefully discards useless information.

Voice Input	Keyword
ഇന്നത്തെ കാലാവസ്ഥ എങ്ങനെയാണ്?	കാലാവസ്ഥ
കാലാവസ്ഥ നല്ലതാണോ?	കാലാവസ്ഥ
കാലാവസ്ഥ മോശമാകുമോ?	കാലാവസ്ഥ

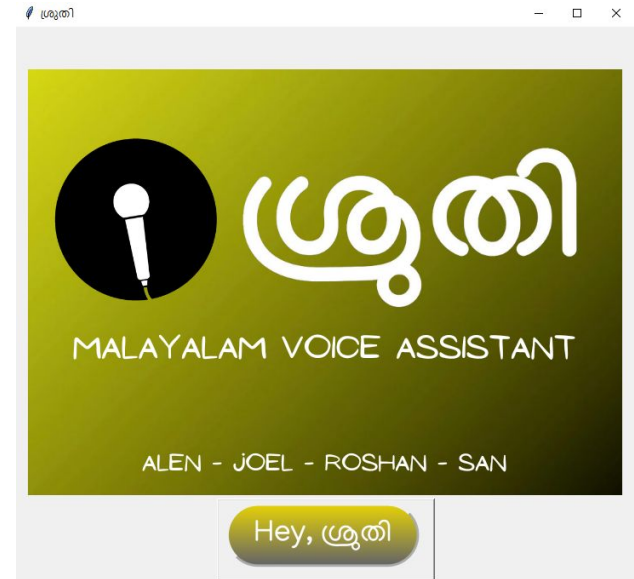


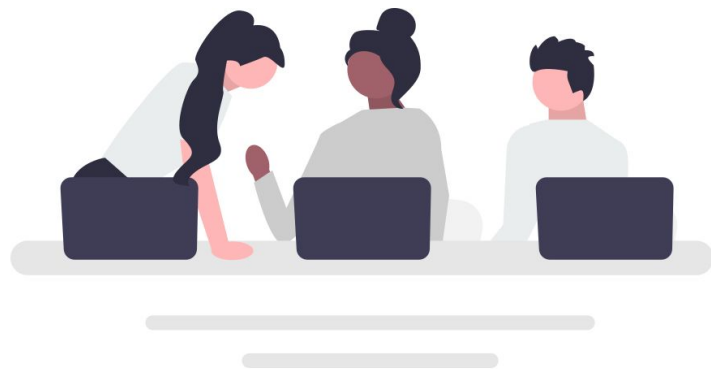
Action Performed
Reads out the current weather

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- Once the relevant keyword is identified, Sruthi performs the required action.
 - Currently, Sruthi supports the following features. New features will be added in future.

Keyword	Feature
സമയം	Reads out the current time
തീയതി	Reads out the current date
ആരാൺ	Fetches Wikipedia summary
കേൾക്കണം	Redirects to the required YouTube video

- The frontend (GUI) of Sruthi is built using *Tkinter* library.
- The design of the user interface is made minimal. A button is placed at the bottom that initiates the voice assistant.
- Once the button is clicked, Sruthi will ask the user to respond. It will then listen to the speech input provided by the user.





LIVE DEMO



CONCLUSION

- In short, Sruthi is intended to be a minimal voice assistant that would help visually impaired and those who are unfamiliar with English language.
- It is easy to use and can be used to perform common tasks like fetching Wikipedia articles, getting the current date and time, entertainment, etc.



REFERENCES

- Kurian Benoy, Jiby J Puthiyidam – **A Study of Text to Speech Systems for Non-English Languages**, IJRAR June 2019, Volume 6, Issue 2
- Preena Johnson , Jishna K C, Soumya S – **Speech to Text Conversion in Malayalam**, IJLERA July 2017, Volume 2, Issue 7
- Nivendita Singh, Diwakar Yagyasan, Surya Vikram Singh, Gaurav Kumar, Harshit Agarwal – **Voice Assistant Using Python**, IJIRT July 2021, Volume 8, Issue 2



FUTURE SCOPE

- As developers, we would like to release our product with an Open Source Licence thus enabling equality and ensuring access to all, despite their disabilities.
- Would include newer features like Video Calling, Email Composing, Setting up of Reminders, etc in later versions.
- Would include AI based recognition that would enable personalised responses and feedbacks.



THANK YOU

THE END

