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**ABSTRACT**:

Voice control is a major growing feature that change the way people can live. The voice assistant is commonly being used in smart phones and laptops. AI-based Voice assistants are the operating systems that can recognize human voice and respond via integrated voices. This voice assistant will gather the audio from the microphone and then convert that into text, later it is sent through GTTS (Google text to speech). GTTS engine will convert text into audio file in English language, then that audio is played using play sound package of python programming Language.

it will look at examples of intelligent programs with natural language processing that are currently available, with different categories of support, and examine the potential usefulness of one specific piece of software as a VPA. This engages the ability to communicate socially through natural language processing, holding (and analysing) information within the context of the user. It is suggested that new technologies may soon make the idea of virtual personal assistants a reality. Experiments conducted on this system, combined with user testing, have provided evidence that a basic program with natural language processing algorithms in the form of a VPA, with basic natural language processing and the ability to function without the need for other type of human input (or programming) may already be viable.

**1. INTRODUCTION**

Nowadays the Mobile Technology is being very famous for the User Experience, because it is very easy to access the applications and services from anywhere of your Geolocation. Android, Apple, Windows, Blackberry, etc. are various famous and commonly used Mobile Operating Systems. All the Operating Systems provides plenty of applications and services for users. For an instance, the Contacts Applications is used to store the contact details of the user's contact and also helps user to connect a call or send an SMS to other person using the contents stored in this application. We can get similar types of application all around the world via Apple Store, Play Store, etc. All this features gives birth to various kinds of sensors or functionalities to be implemented in the mobile devices. The Most famous application of iPhone is “SIRI” which helps the end user to communicate end user to mobile with voice and it also responds to the voice commands of the user. Same kind of application is also developed by the Google that is “Google Voice Search” which is used for in Android Phones. But this Application mostly works with Internet Connections. But our Proposed System has capability to work with and without Internet Connectivity. It’s named as Personal Assistant with Voice Recognition Intelligence, which takes the user input in form of voice or text and process it and returns the output in various forms like action to be performed or the search result is dictated to the end user.

**2. LITERATURE SURVEY**

**2.1** Speech recognition with flat direct models

**Authors:Geoffrey Zweig,Georg Heigold,Phuongtrang Nguyen** **Abstract:**  This paper describes a novel direct modeling approach for speech recognition. We propose a log-linear modeling framework based on using numerous features which each measure some form of consistency between the underlying speech and an entire sequence of hypothesized words. Since the model relates the entire audio signal to a complete hypothesis without necessarily positing any inherent structure, we term this a flat direct model (FDM). In contrast to a conventional hidden Markov model approach, no Markov assumptions are used, and the model is not necessarily sequential. We demonstrate the use of features based on both template-matching distances, and the acoustic detection of multi-phone units which are selected so as to have maximal mutual information with respect to word labels. Further, we solve the key problem of how to define features which can generalize to unseen word sequences. In the proposed model, template-based features improve sentence error rate by 3% absolute over the baseline, while multi-phone-based features improve by 2% absolute.

**2.2** Accurate and compact large vocabulary speech recognition on mobile devices

**Authors:Jeffrey Scott SorensenX. Lei, A. Senior,**

**Abstract: In this paper we describe the development of an accurate, smallfootprint, large vocabulary speech recognizer for mobile devices. To achieve the best recognition accuracy, state-of-the-art deep neural networks (DNNs) are adopted as acoustic models. A variety of speedup techniques for DNN score computation are used to enable real-time operation on mobile devices. To reduce the memory and disk usage, on-the-fly language model (LM) rescoring is performed with a compressed n-gram LM.**

# 2.3 Lattice-based optimization of sequence classification criteria for neural-network acoustic modeling

**Authors:** [**Brian Kingsbury**](https://ieeexplore.ieee.org/author/37284786800) **Abstract:**Acoustic models used in hidden Markov model/neural-network (HMM/NN) speech recognition systems are usually trained with a frame-based cross-entropy error criterion. In contrast, Gaussian mixture HMM systems are discriminatively trained using sequence-based criteria, such as minimum phone error or maximum mutual information, that are more directly related to speech recognition accuracy. This paper demonstrates that neural-network acoustic models can be trained with sequence classification criteria using exactly the same lattice-based methods that have been developed for Gaussian mixture HMMs, and that using a sequence classification criterion in training leads to considerably better performance. A neural network acoustic model with 153K weights trained on 50 hours of broadcast news has a word error rate of 34.0% on the rt04 English broadcast news test set. When this model is trained with the state-level minimum Bayes risk criterion, the rt04 word error rate is 27.7%.

**2.4** Automatic question generation for decision tree based state tying

**Authors: K. Beulen, H. Ney Abstract:**Decision tree based state tying uses so-called phonetic questions to assign triphone states to reasonable acoustic models. These phonetic questions are in fact phonetic categories such as vowels, plosives or fricatives. The assumption behind this is that context phonemes which belong to the same phonetic class have a similar influence on the pronunciation of a phoneme. For a new phoneme set, which has to be used, for example, when switching to a different corpus, a phonetic expert is needed to define proper phonetic questions. In this paper a new method is presented which automatically defines good phonetic questions for a phoneme set. This method uses the intermediate clusters from a phoneme clustering algorithm which are reduced to an appropriate number afterwards. Recognition results on the Wall Street Journal data for within-word and across-word phoneme models show competitive performance of the automatically generated questions with our best handcrafted question set.

**2.5 SOFTWARE ENVIRONMENT**

**Python** is a high-level, interpreted scripting language developed in the late 1980s by Guido van Rossum at the National Research Institute for Mathematics and Computer Science in the Netherlands. The initial version was published at the alt. Sources [newsgroup](https://en.wikipedia.org/wiki/Usenet) in 1991, and version 1.0 was released in 1994.

Python 2.0 was released in 2000, and the 2.x versions were the prevalent releases until December 2008. At that time, the development team made the decision to release version 3.0, which contained a few relatively small but significant changes that were not backward compatible with the 2.x versions. Python 2 and 3 are very similar, and some features of Python 3 have been back ported to Python 2. But in general, they remain not quite compatible.

Both Python 2 and 3 have continued to be maintained and developed, with periodic release updates for both. As of this writing, the most recent versions available are 2.7.15 and 3.6.5. However, an official [End of Life date of January 1, 2020](https://pythonclock.org/) has been established for Python 2, after which time it will no longer be maintained. If you are a newcomer to Python, it is recommended that you focus on Python 3, as this tutorial will do.

Python is still maintained by a core development team at the Institute, and Guido is still in charge, having been given the title of BDFL (Benevolent Dictator For Life) by the Python community. The name Python, by the way, derives not from the snake, but from the British comedy troupe [Monty Python’s Flying Circus](https://en.wikipedia.org/wiki/Monty_Python%27s_Flying_Circus), of which Guido was, and presumably still is, a fan. It is common to find references to Monty Python sketches and movies scattered throughout the Python documentation.

**2.6 WHY CHOOSE PYTHON**

If you’re going to write programs, there are literally dozens of commonly used languages to choose from. Why choose Python? Here are some of the features that make Python an appealing choice.

**Python is Popular**

Python has been growing in popularity over the last few years. The 2018 [Stack Overflow Developer Survey](https://insights.stackoverflow.com/survey/2018) ranked Python as the 7th most popular and the number one most wanted technology of the year. [World-class software development countries around the globe use Python every single day.](https://realpython.com/world-class-companies-using-python/)

According to [research by Dice](https://insights.dice.com/2016/02/01/whats-hot-and-not-in-tech-skills/) Python is also one of the hottest skills to have and the most popular programming language in the world based on the [Popularity of Programming Language Index](https://pypl.github.io/PYPL.html).

Due to the popularity and widespread use of Python as a programming language, Python developers are sought after and paid well. If you’d like to dig deeper into [Python salary statistics and job opportunities, you can do so here](https://dbader.org/blog/why-learn-python).

**Python is interpreted**

Many languages are compiled, meaning the source code you create needs to be translated into machine code, the language of your computer’s processor, before it can be run. Programs written in an interpreted language are passed straight to an interpreter that runs them directly.

This makes for a quicker development cycle because you just type in your code and run it, without the intermediate compilation step.

One potential downside to interpreted languages is execution speed. Programs that are compiled into the native language of the computer processor tend to run more quickly than interpreted programs. For some applications that are particularly computationally intensive, like graphics processing or intense number crunching, this can be limiting.

In practice, however, for most programs, the difference in execution speed is measured in milliseconds, or seconds at most, and not appreciably noticeable to a human user. The expediency of coding in an interpreted language is typically worth it for most applications.

### Python is Free

The Python interpreter is developed under an OSI-approved open-source license, making it free to install, use, and distribute, even for commercial purposes.

A version of the interpreter is available for virtually any platform there is, including all flavors of Unix, Windows, macOS, smart phones and tablets, and probably anything else you ever heard of. A version even exists for the half dozen people remaining who use OS/2.

### Python is Portable

Because Python code is interpreted and not compiled into native machine instructions, code written for one platform will work on any other platform that has the Python interpreter installed. (This is true of any interpreted language, not just Python.)

### Python is Simple

As programming languages go, Python is relatively uncluttered, and the developers have deliberately kept it that way.

A rough estimate of the complexity of a language can be gleaned from the number of keywords or reserved words in the language. These are words that are reserved for special meaning by the compiler or interpreter because they designate specific built-in functionality of the language.

Python 3 has 33 keywords, and Python 2 has 31. By contrast, C++ has 62, Java has 53, and Visual Basic has more than 120, though these latter examples probably vary somewhat by implementation or dialect.

Python code has a simple and clean structure that is easy to learn and easy to read. In fact, as you will see, the language definition enforces code structure that is easy to read.

But It’s Not That Simple For all its syntactical simplicity, Python supports most constructs that would be expected in a very high-level language, including complex dynamic data types, structured and functional programming, and [object-oriented programming](https://realpython.com/python3-object-oriented-programming/).

Additionally, a very extensive library of classes and functions is available that provides capability well beyond what is built into the language, such as database manipulation or GUI programming.

Python accomplishes what many programming languages don’t: the language itself is simply designed, but it is very versatile in terms of what you can accomplish with it.

## Conclusion

This section gave an overview of the **Python** programming language, including:

* A brief history of the development of Python
* Some reasons why you might select Python as your language of choice

Python is a great option, whether you are a beginning programmer looking to learn the basics, an experienced programmer designing a large application, or anywhere in between. The basics of Python are easily grasped, and yet its capabilities are vast. Proceed to the next section to learn how to acquire and install Python on your computer.

**Python** is an [open source](https://simple.wikipedia.org/wiki/Open_source) [programming language](https://simple.wikipedia.org/wiki/Programming_language) that was made to be easy-to-read and powerful. A [Dutch](https://simple.wikipedia.org/wiki/Netherlands) programmer named [Guido van Rossum](https://simple.wikipedia.org/wiki/Guido_van_Rossum) made Python in 1991. He named it after the television show [Monty Python's Flying Circus](https://simple.wikipedia.org/wiki/Monty_Python%27s_Flying_Circus). Many Python examples and tutorials include jokes from the show.

Python is an interpreted language. Interpreted languages do not need to be [compiled](https://simple.wikipedia.org/wiki/Compiled_language) to run. A program called an [interpreter](https://simple.wikipedia.org/wiki/Interpreter_(computing)) runs Python code on almost any kind of computer. This means that a programmer can change the code and quickly see the results. This also means Python is slower than a compiled language like [C](https://simple.wikipedia.org/wiki/C_(programming_language)), because it is not running [machine code](https://simple.wikipedia.org/wiki/Machine_code) directly.

Python is a good programming language for beginners. It is a high-level language, which means a programmer can focus on what to do instead of how to do it. Writing programs in Python takes less time than in some other languages.

Python drew inspiration from other programming languages like C, [C++](https://simple.wikipedia.org/wiki/C%2B%2B), [Java](https://simple.wikipedia.org/wiki/Java_(programming_language)), [Perl](https://simple.wikipedia.org/wiki/Perl), and [Lisp](https://simple.wikipedia.org/wiki/LISP).

Python has a very easy-to-read syntax. Some of Python's syntax comes from C, because that is the language that Python was written in. But Python uses whitespace to delimit code: spaces or tabs are used to organize code into groups. This is different from C. In C, there is a [semicolon](https://simple.wikipedia.org/wiki/Semicolon) at the end of each line and curly braces ({}) are used to group code. Using whitespace to delimit code makes Python a very easy-to-read language.

**Python use [change / change source]**

Python is used by hundreds of thousands of programmers and is used in many

places. Sometimes only Python code is used for a program, but most of the time it is used to do simple jobs while another programming language is used to do more complicated tasks.

Its [standard library](https://simple.wikipedia.org/w/index.php?title=Standard_library&action=edit&redlink=1) is made up of many [functions](https://simple.wikipedia.org/wiki/Computable_function) that come with Python when it is installed. On the [Internet](https://simple.wikipedia.org/wiki/Internet) there are many other [libraries](https://simple.wikipedia.org/w/index.php?title=Library_(computing)&action=edit&redlink=1) available that make it possible for the Python language to do more things. These libraries make it a powerful language; it can do many different things.

Some things that Python is often used for are:

* Web development
* Scientific programming
* Desktop [GUIs](https://simple.wikipedia.org/wiki/GUI)
* Network programming
* [Game](https://simple.wikipedia.org/wiki/Video_game) programming

**3. SYSTEM ANALYSIS**

**3.1 EXISTING SYSTEM:**

**In existing system user use to search by using keyboard typing.it takes lot of times to search.**In recent times only in the Voice Assistants we can experience the major changes, the way user interacts and the experience of user. We are already using them for many tasks like switching on/off lights, playing music through streaming apps like Wynk Music, Spotify etc., This is the new method of interacting with the technical devices makes lexical communication as a new ally to this technology

**3.2 PROPOSED SYSTEM:**

The project will give a fair knowledge about the intelligent assistant which is capable of understanding the commands given by the user. Our assistant can easily understand the commands given by the user through vocal media and responds as required. Our assistant performs the most frequently asked requests from the user and makes their task easier. Our voice assistant listens to the command given by the user through the microphone. After listening it will says ‘speaking’and displays what the user said and acts accordingly.

**4. FEASIBILITY STUDY**

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

* ECONOMICAL FEASIBILITY
* TECHNICAL FEASIBILITY
* SOCIAL FEASIBILITY

**4.1 ECONOMICAL FEASIBILITY**

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

**4.2 TECHNICAL FEASIBILITY**

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

**4.3 SOCIAL FEASIBILITY**

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

**5. SYSTEM REQUIREMENTS**

**5.1 HARDWARE REQUIREMENTS:**

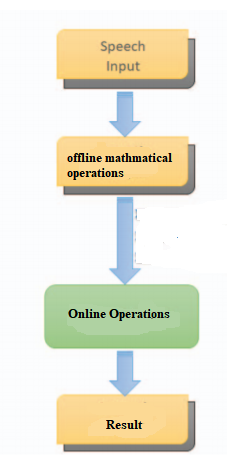
* System : Pentium Dual Core.
* Hard Disk : 120 GB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 1 GB

**5.2 SOFTWARE REQUIREMENTS:**

* Operating system : Windows 10
* Coding Language : python
* Tool : PyCharm
* Database : MYSQL
* Server : Flask

**6. SYSTEM DESIGN**

**6.1 SYSTEM ARCHITECTURE:**

****

**6.2 DATA FLOW DIAGRAM:**

1. The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of input data to the system, various processing carried out on this data, and the output data is generated by this system.
2. The data flow diagram (DFD) is one of the most important modeling tools. It is used to model the system components. These components are the system process, the data used by the process, an external entity that interacts with the system and the information flows in the system.
3. DFD shows how the information moves through the system and how it is modified by a series of transformations. It is a graphical technique that depicts information flow and the transformations that are applied as data moves from input to output.
4. DFD is also known as bubble chart. A DFD may be used to represent a system at any level of abstraction. DFD may be partitioned into levels that represent increasing information flow and functional detail.

**User**

**Check**

**Unauthorized user**

**Yes NO**

**Offline Mathmatice operations**

**Online operations**

**EXIT**

**End process**

**6.3 UML DIAGRAMS:**

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group.

The goal is for UML to become a common language for creating models of object oriented computer software. In its current form UML is comprised of two major components: a Meta-model and a notation. In the future, some form of method or process may also be added to; or associated with, UML.

The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software system, as well as for business modeling and other non-software systems.

The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems.

The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

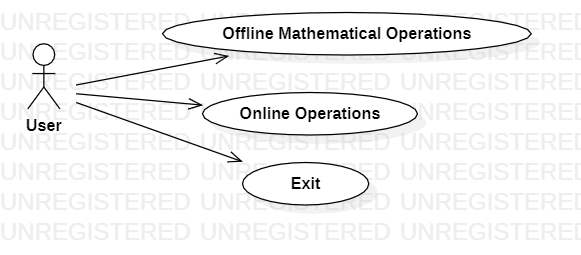
**GOALS:**

The Primary goals in the design of the UML are as follows:

1. Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
2. Provide extendibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development process.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of OO tools market.
6. Integrate best practices.

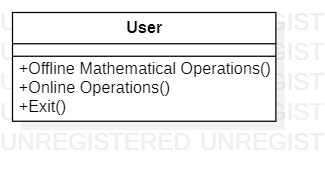
**USE CASE DIAGRAM:**

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can bedepicted.



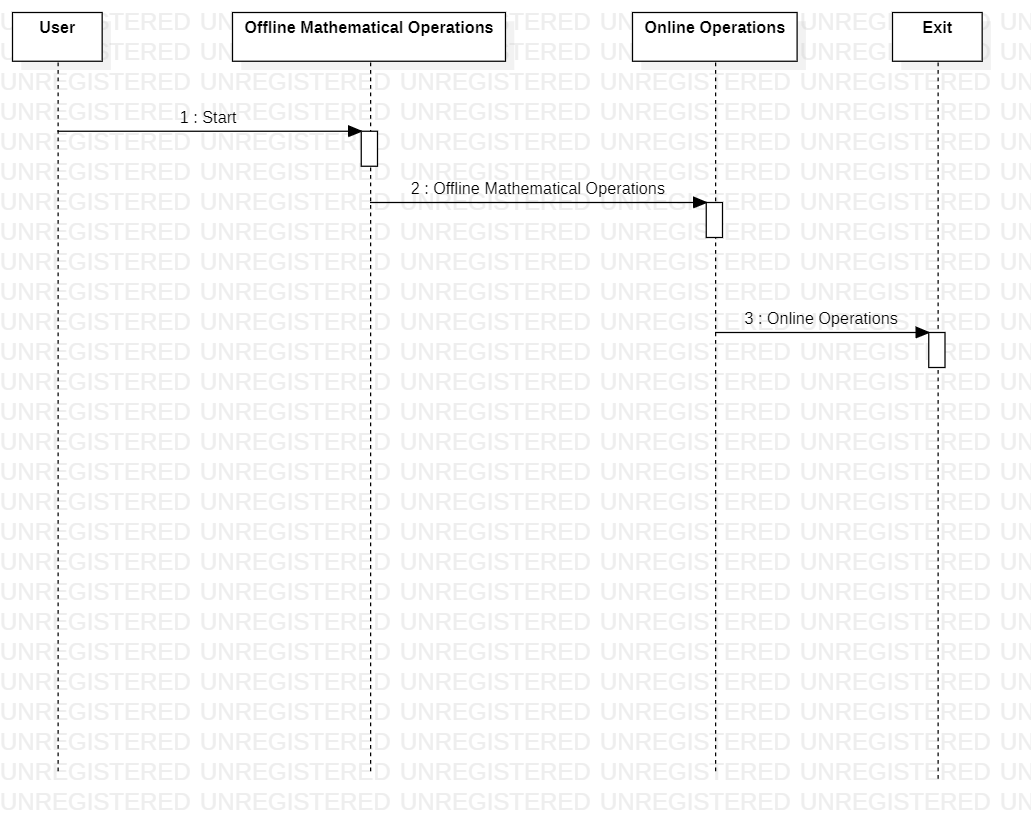
**CLASS DIAGRAM:**

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.

****

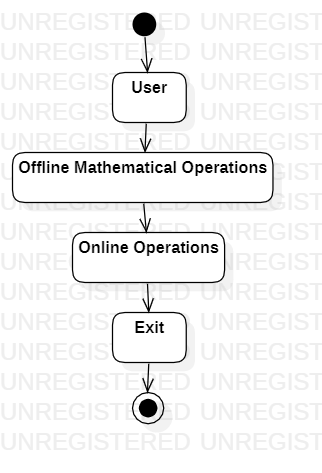
**SEQUENCE DIAGRAM:**

A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.

****

**ACTIVITY DIAGRAM:**

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.

****

**7. IMPLEMENTATION**

**7.1 MODULES:**

**Office Mathematical Operations**

**Online Operations**

**Exit**

**MODULES DESCRIPTION:**

**1.Office Mathematical Operations**

In this module user will speak about Mathematical Operations.In this module all Mathematical Operations is carried out.

(Eg:1+2=3)

**2.Online Operations**

In this module user will speak about search related task. It will search in online using google search.

Eg:Temperature

**3.Exit**

**7.2 SAMPLE CODE**

### 8. SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

**TYPES OF TESTS**

**Unit testing:**

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

**Integration testing:**

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

**Functional test:**

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures : interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

**System Test:**

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

**White Box Testing:**

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

**Black Box Testing:**

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

**8.1 Unit Testing:**

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

**Test strategy and approach:**

Field testing will be performed manually and functional tests will be written in detail.

**Test objectives:**

* All field entries must work properly.
* Pages must be activated from the identified link.
* The entry screen, messages and responses must not be delayed.

**Features to be tested**

* Verify that the entries are of the correct format
* No duplicate entries should be allowed
* All links should take the user to the correct page.

# 8.2 Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.

**8.3 Acceptance Testing**

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

**Test Results:** All the test cases mentioned above passed successfully. No defects encountered.

**9. INPUT DESIGN AND OUTPUT DESIGN**

**9.1 INPUT DESIGN:**

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processingcan be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

* What data should be given as input?
* How the data should be arranged or coded?
* The dialog to guide the operating personnel in providing input.
* Methods for preparing input validations and steps to follow when error occur.

**OBJECTIVES:**

1. Input Design is the process of converting a user-oriented description of the input into a computer-based system. This design is important to avoid errors in the data input process and show the correct direction to the management for getting correct information from the computerized system.

2.It is achieved by creating user-friendly screens for the data entry to handle large volume of data. The goal of designing input is to make data entry easier and to be free from errors. The data entry screen is designed in such a way that all the data manipulates can be performed. It also provides record viewing facilities.

3. When the data is entered it will check for its validity. Data can be entered with the help of screens. Appropriate messages are provided as when needed so that the user will not be in maize of instant. Thus the objective of input design is to create an input layout that is easy to follow

**9.2 OUTPUT DESIGN:**

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system’s relationship to help user decision-making.

1. Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.

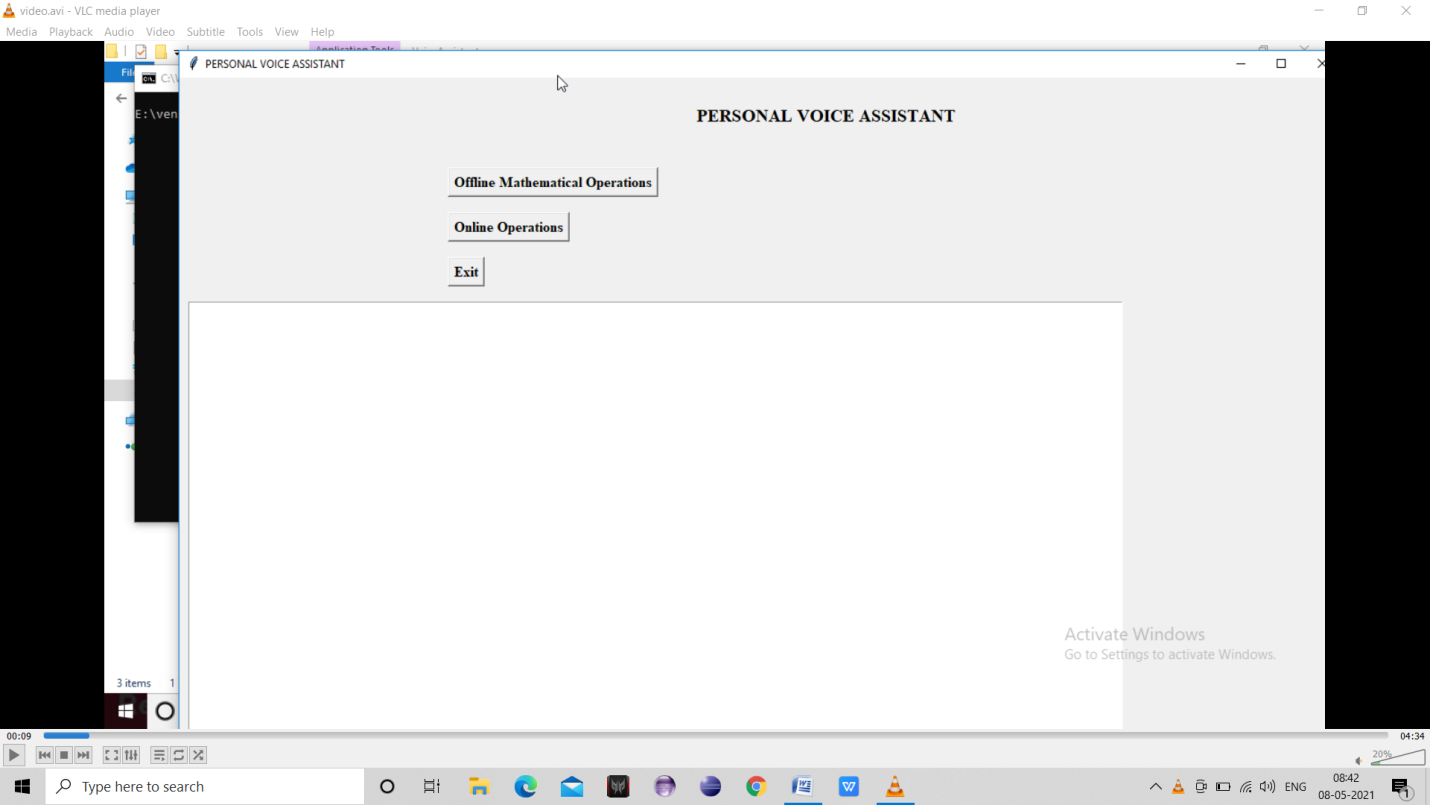
2. Select methods for presenting information.

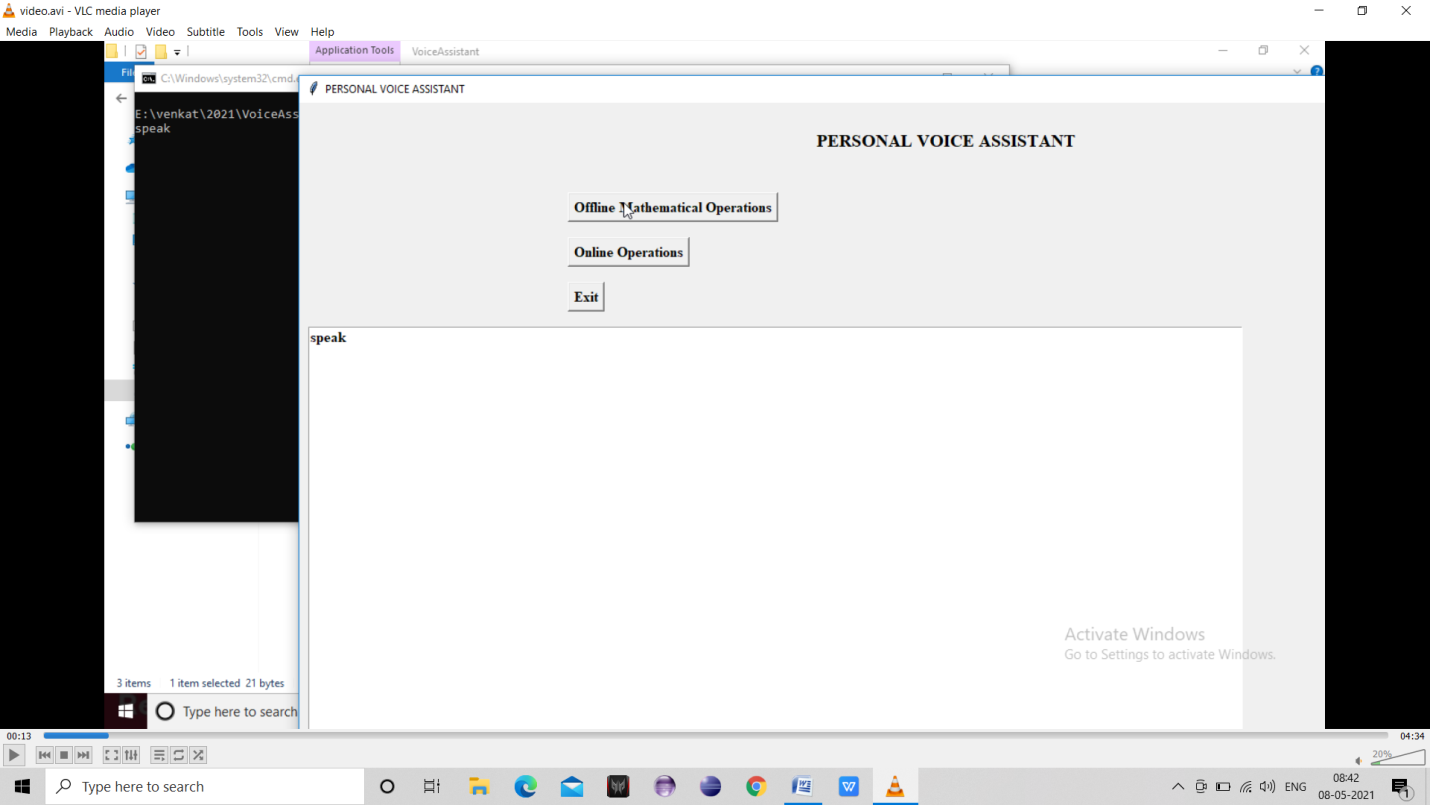
3. Create document, report, or other formats that contain information produced by the system.

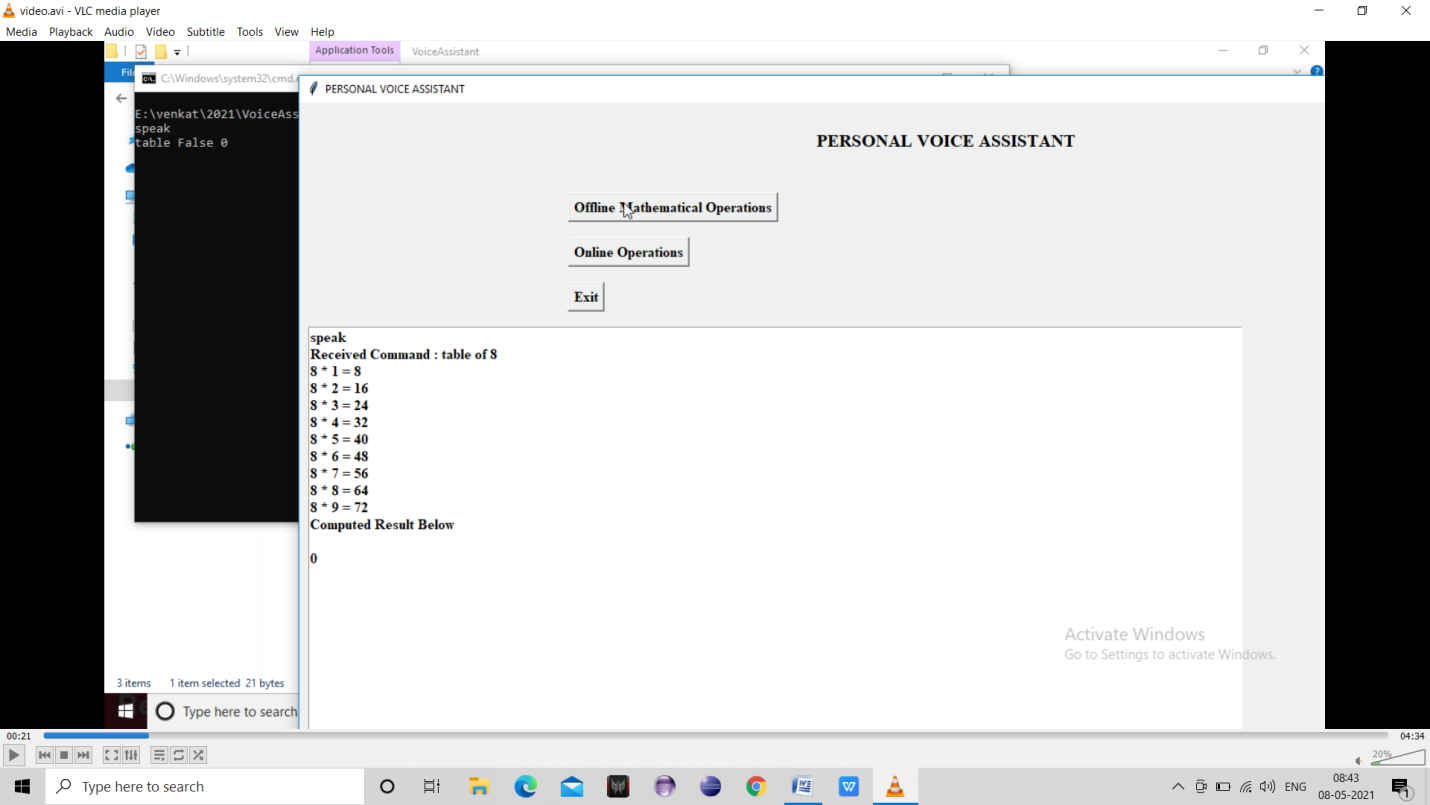
The output form of an information system should accomplish one or more of the following objectives.

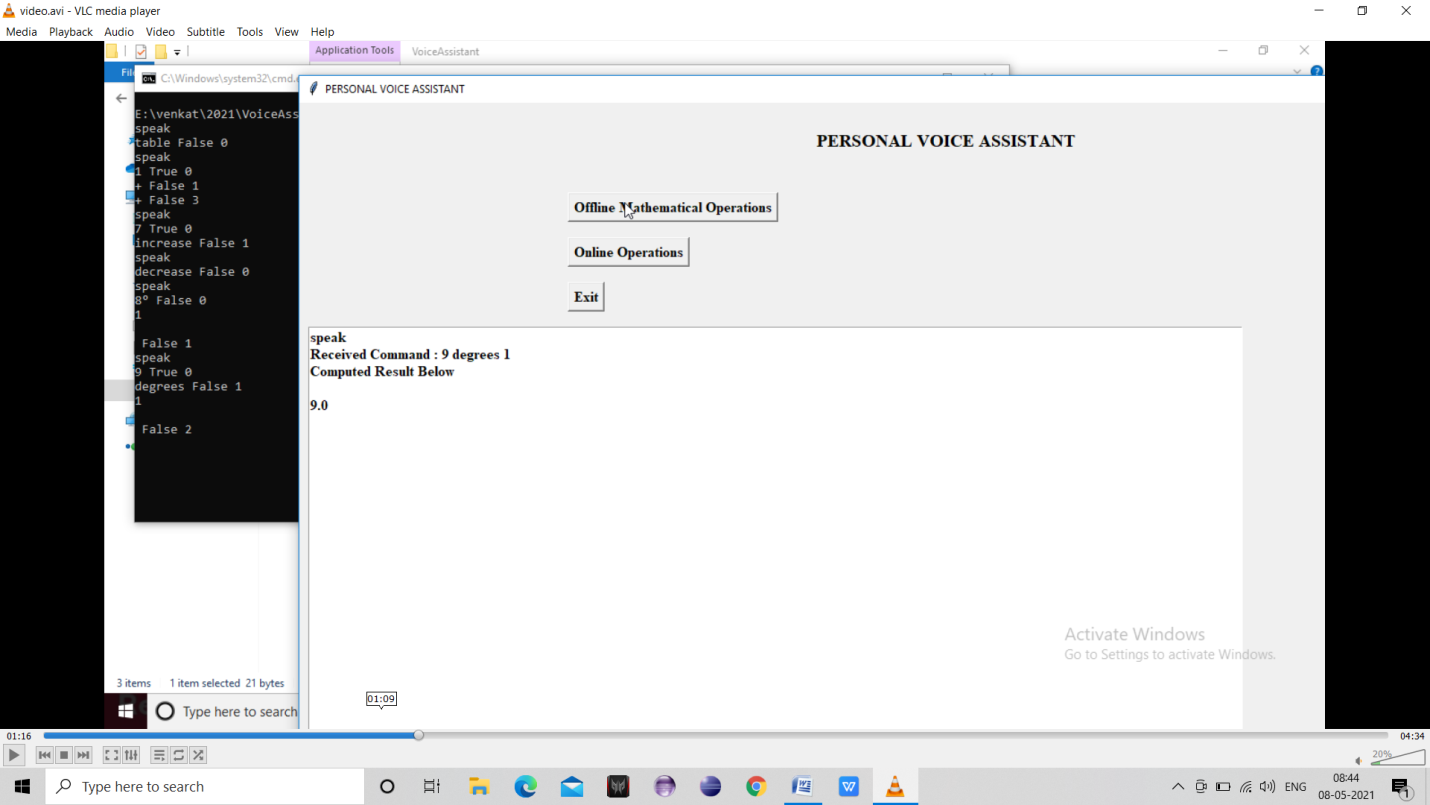
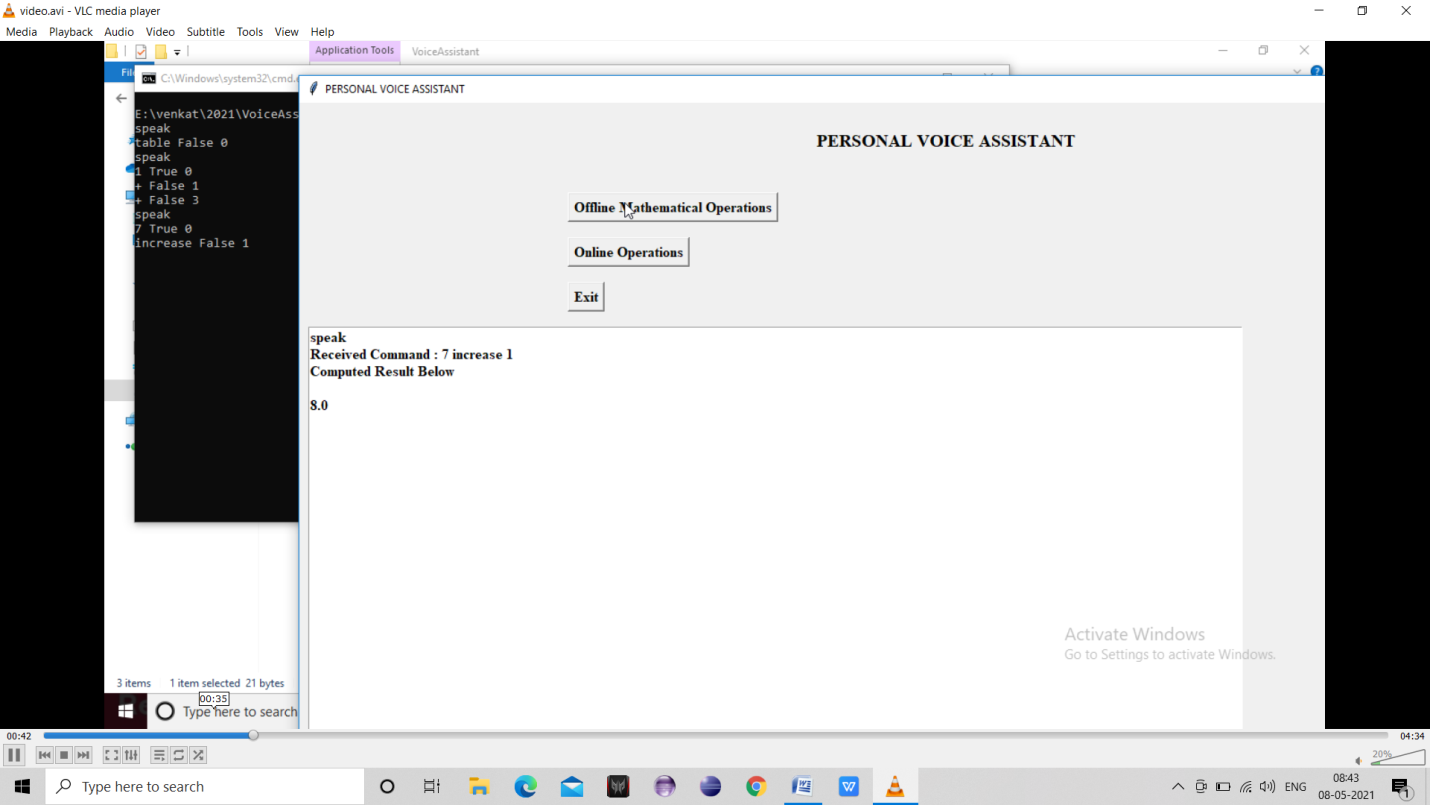
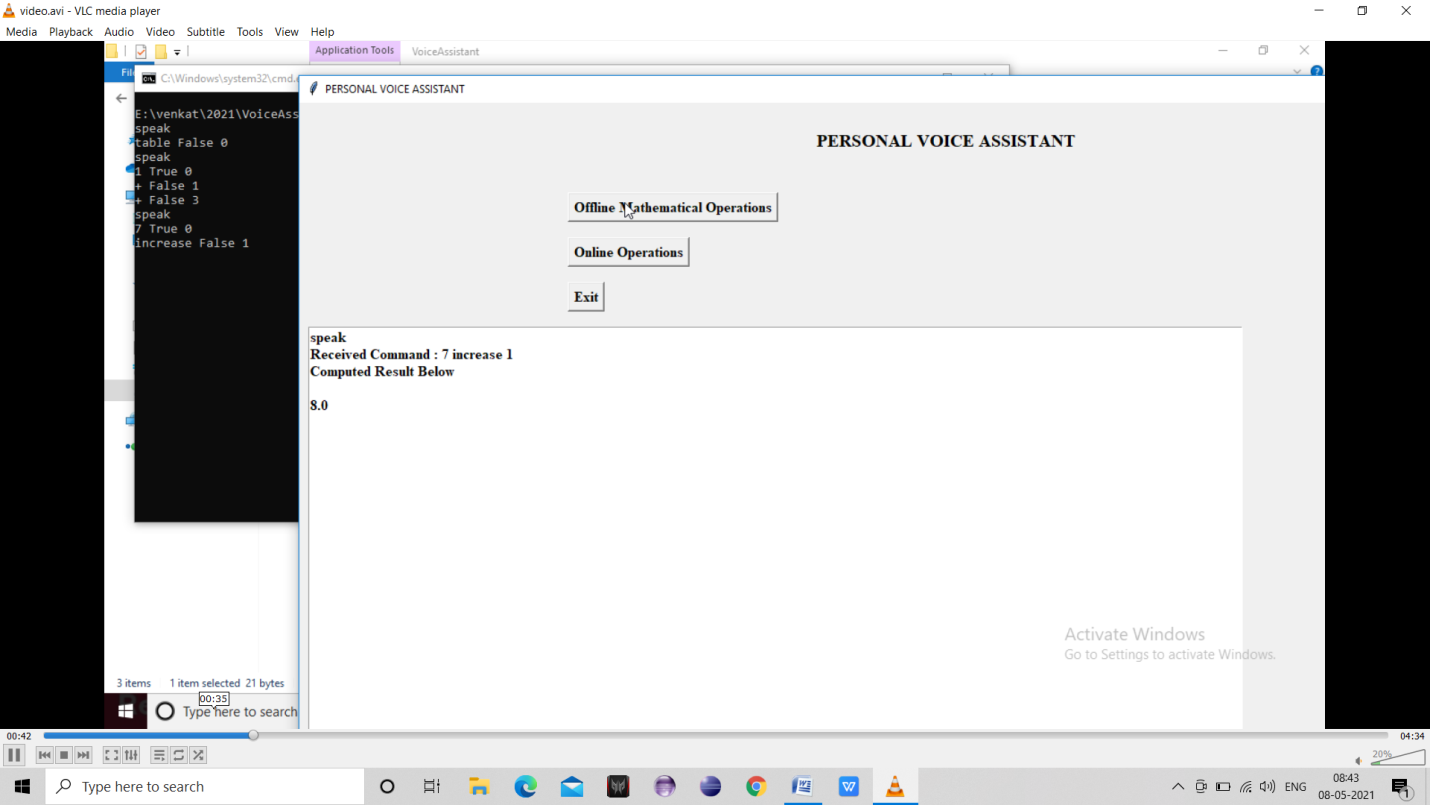
* Convey information about past activities, current status or projections of the
* Future.
* Signal important events, opportunities, problems, or warnings.
* Trigger an action.
* Confirm an action.

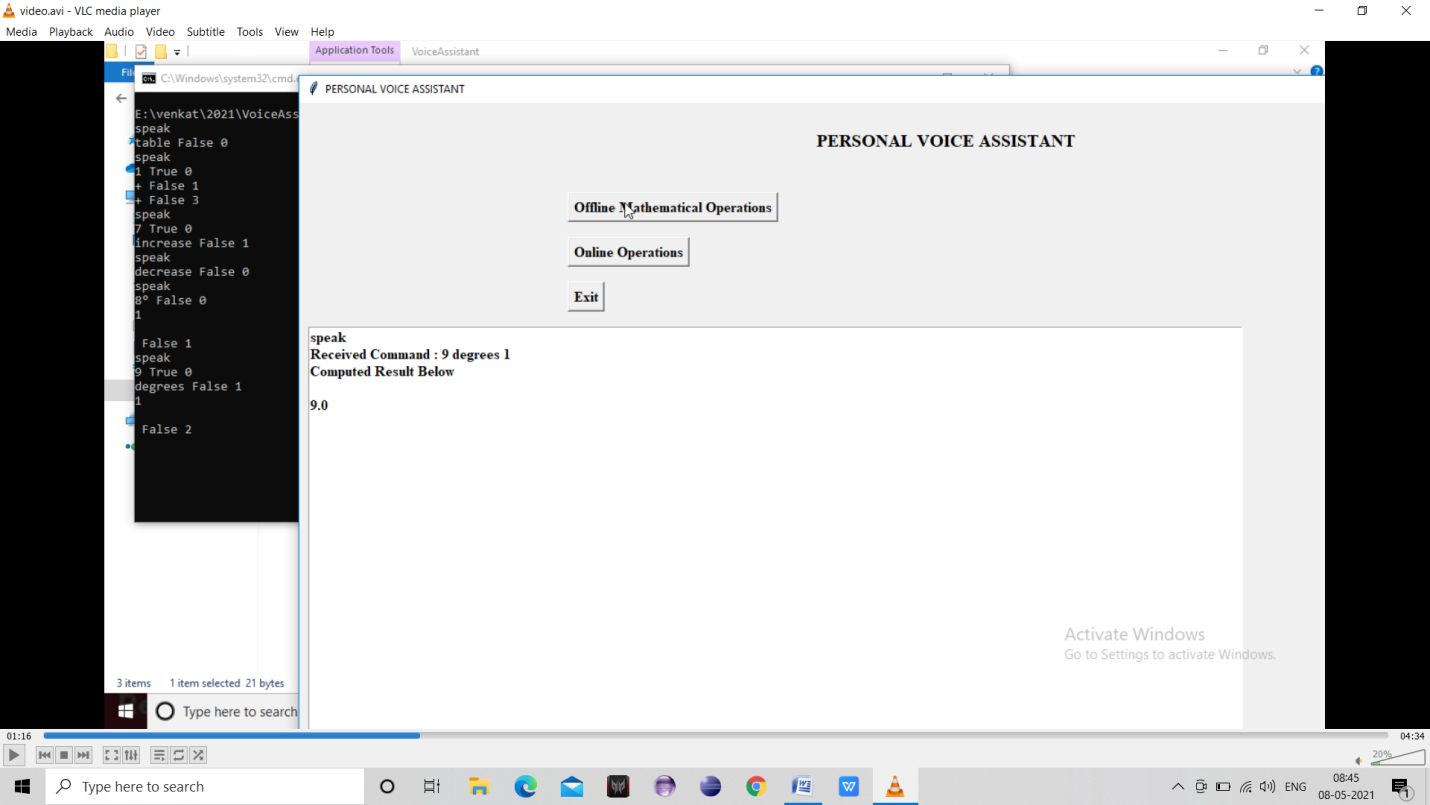
**10. SCREENSHOTS**

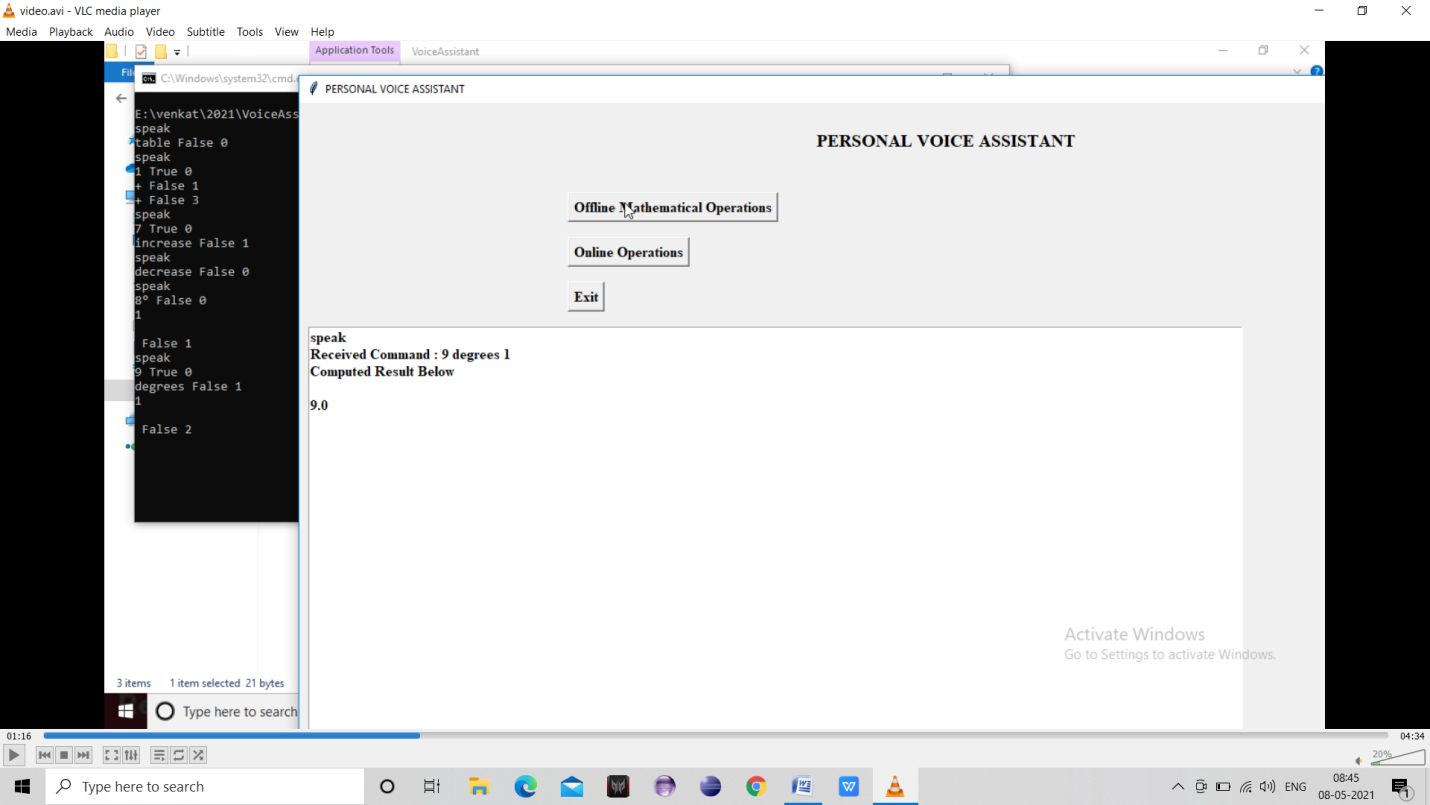
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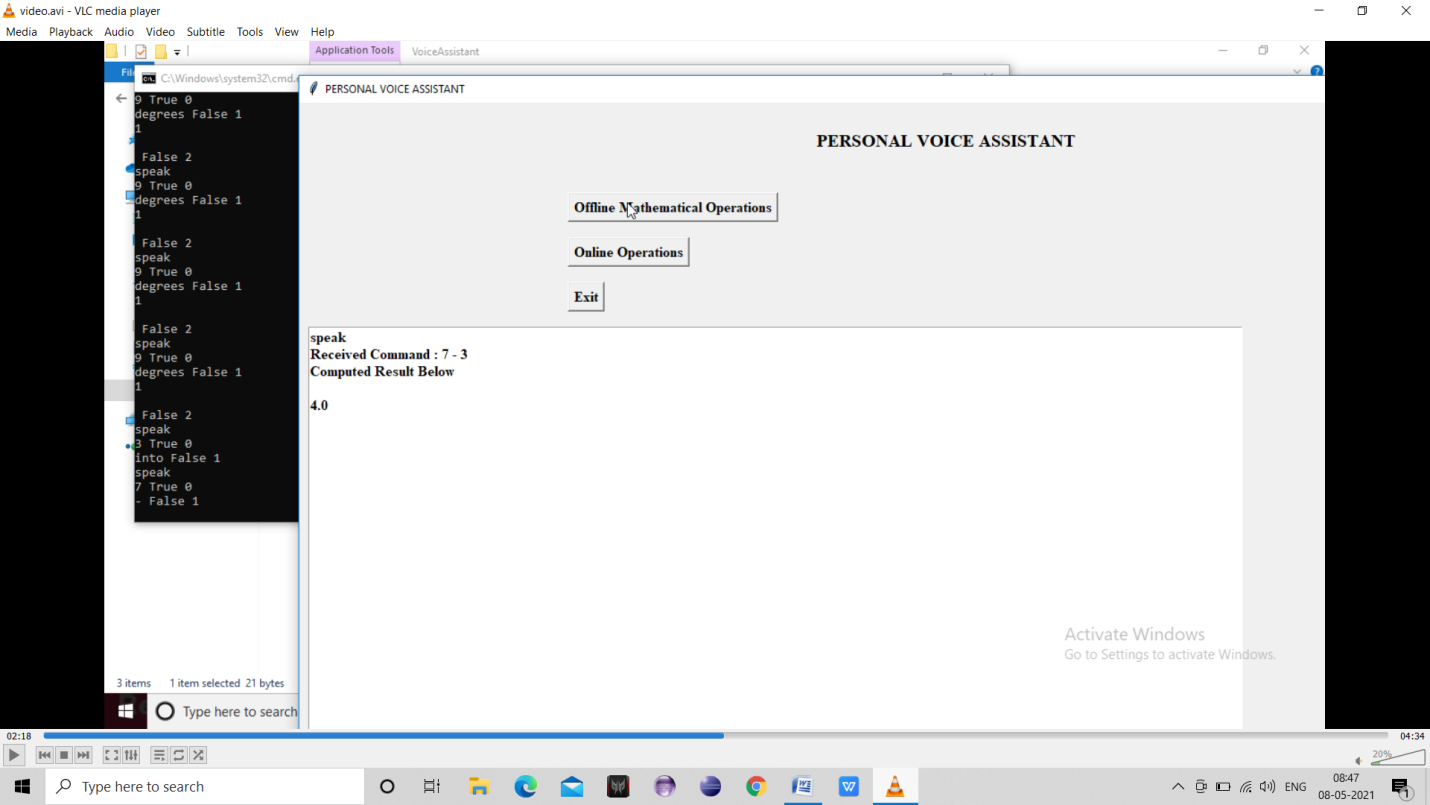
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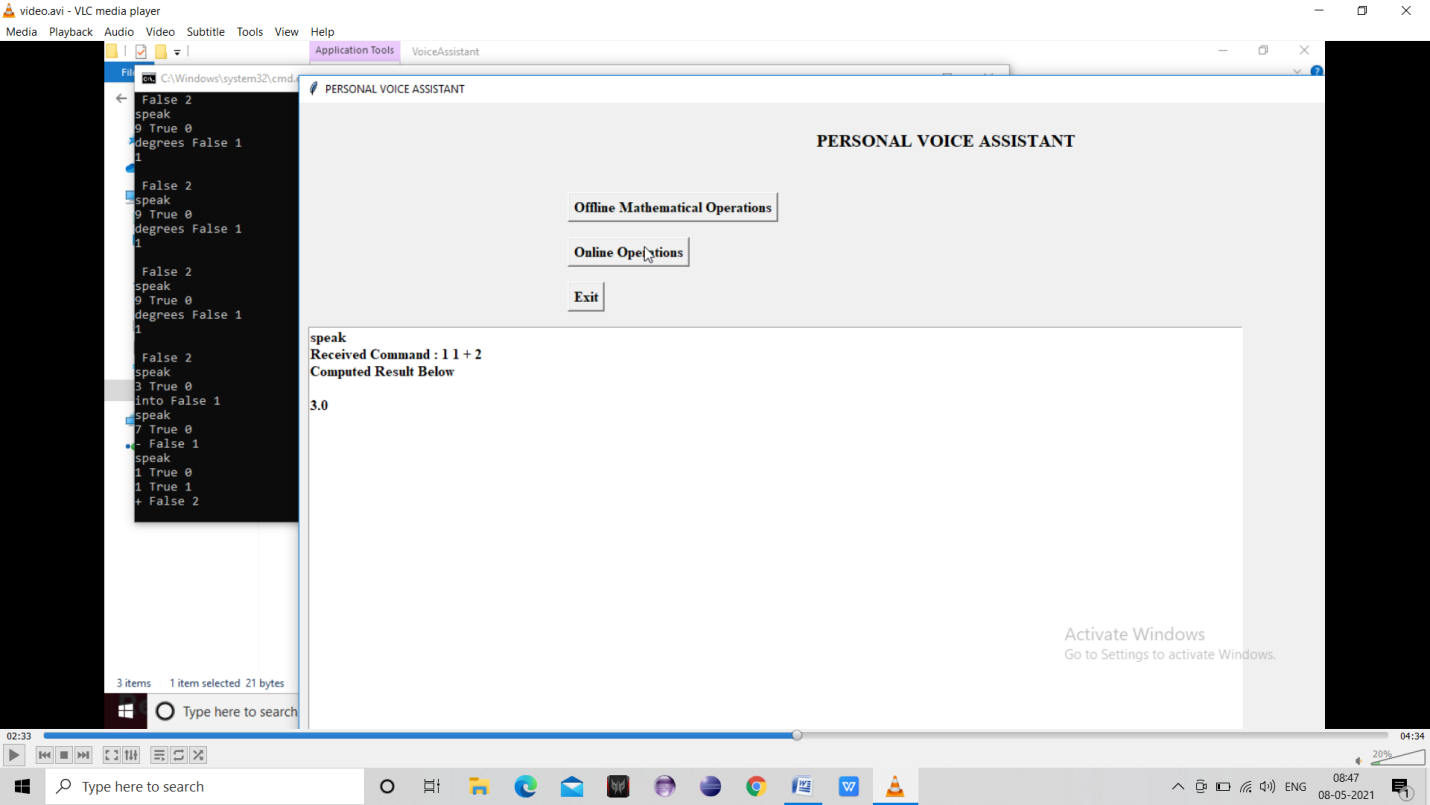
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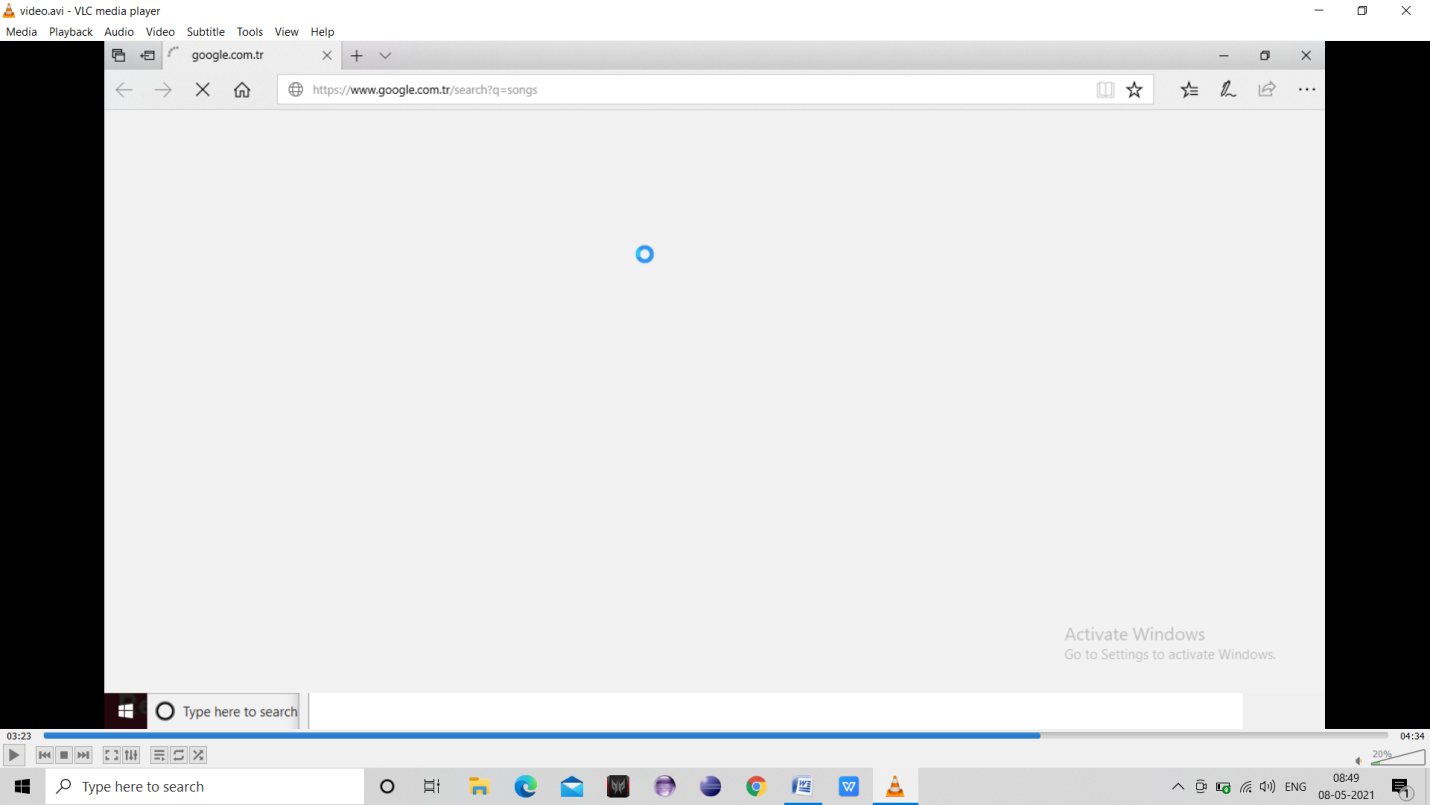
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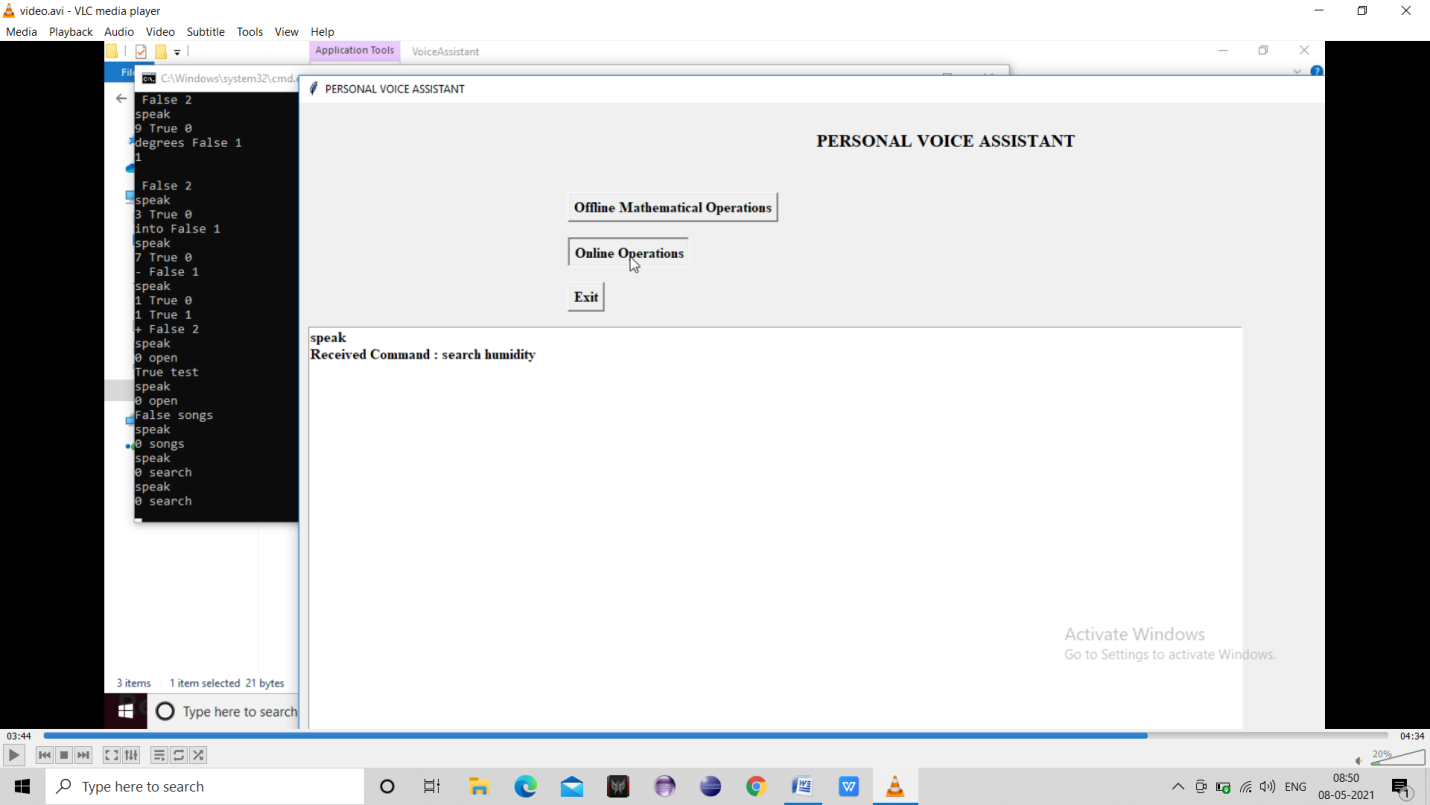
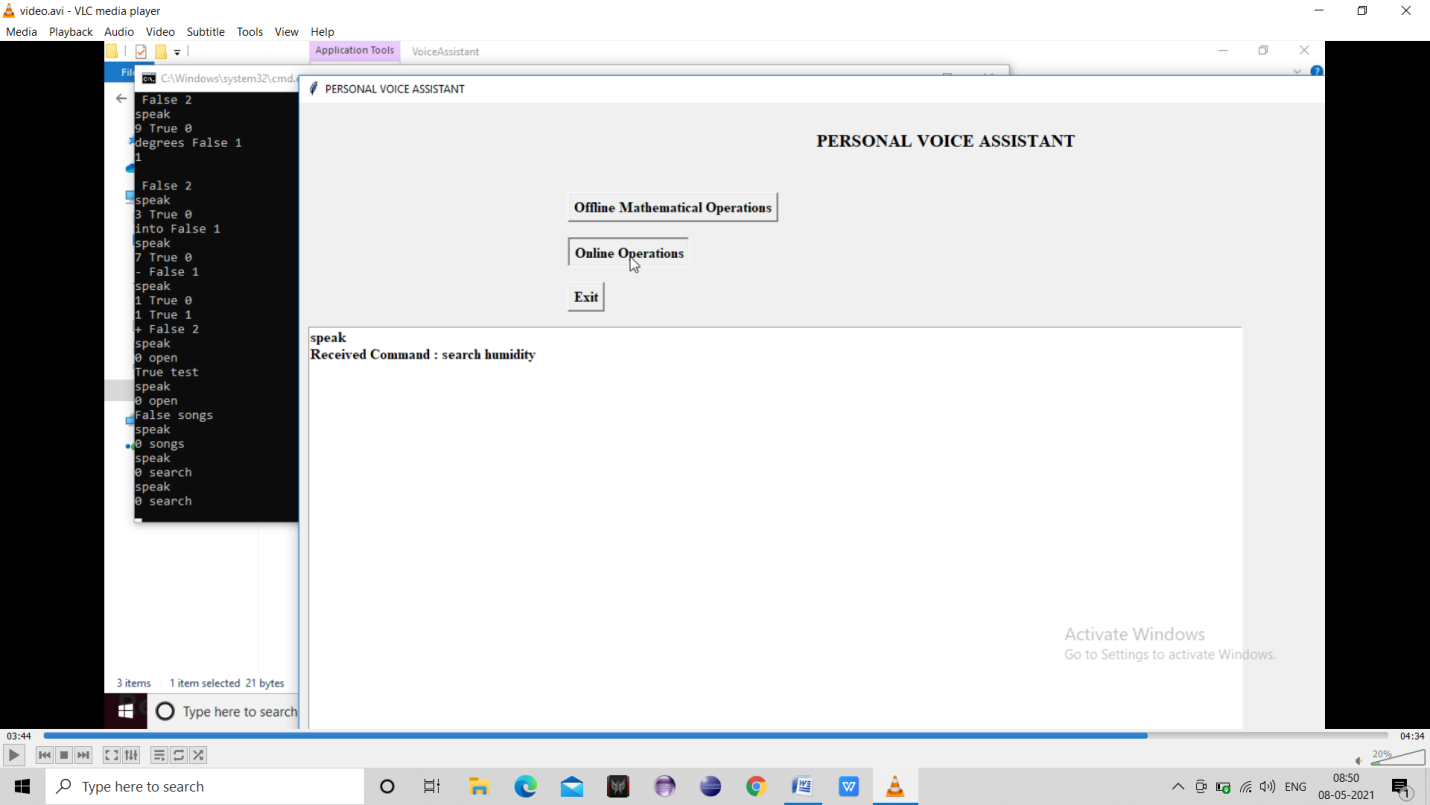


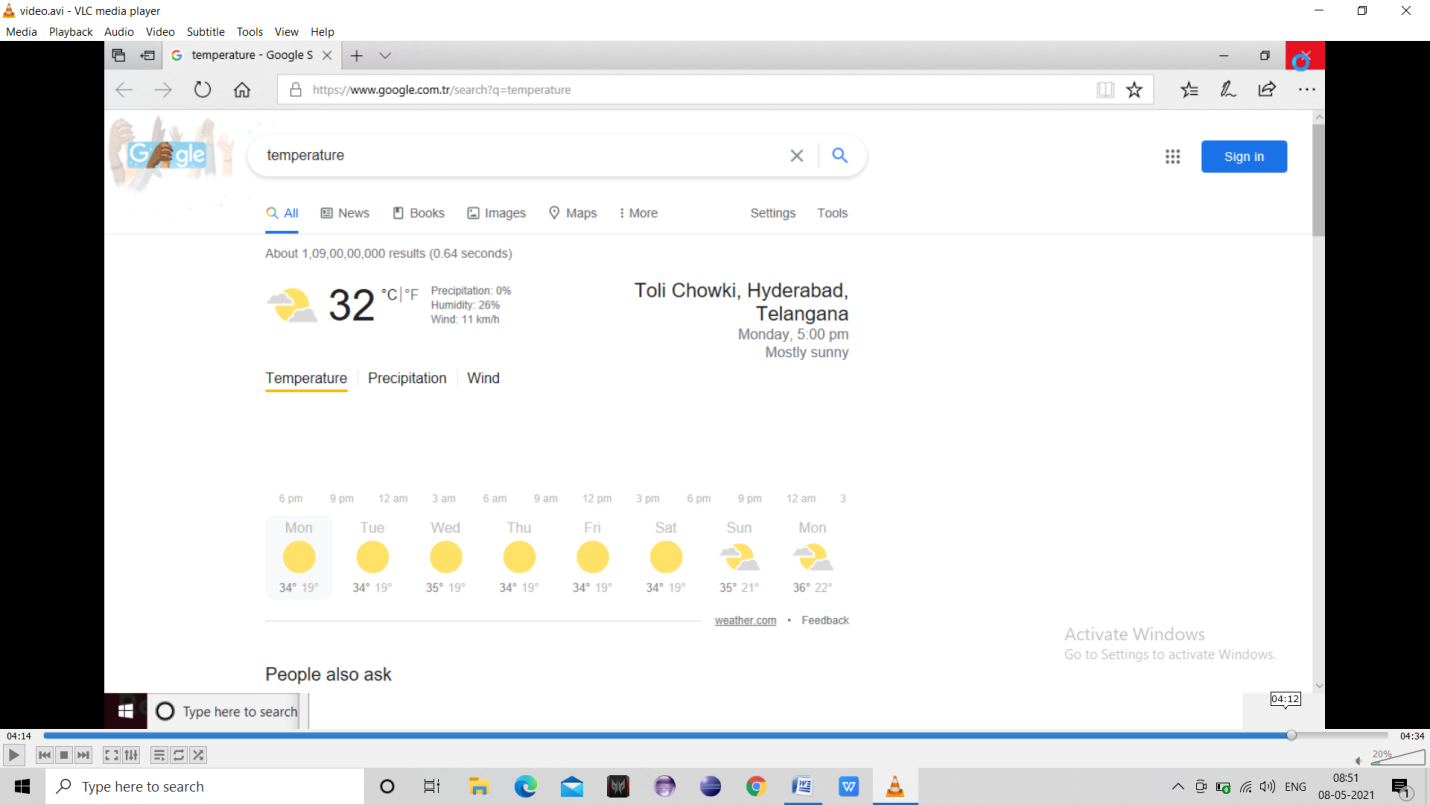


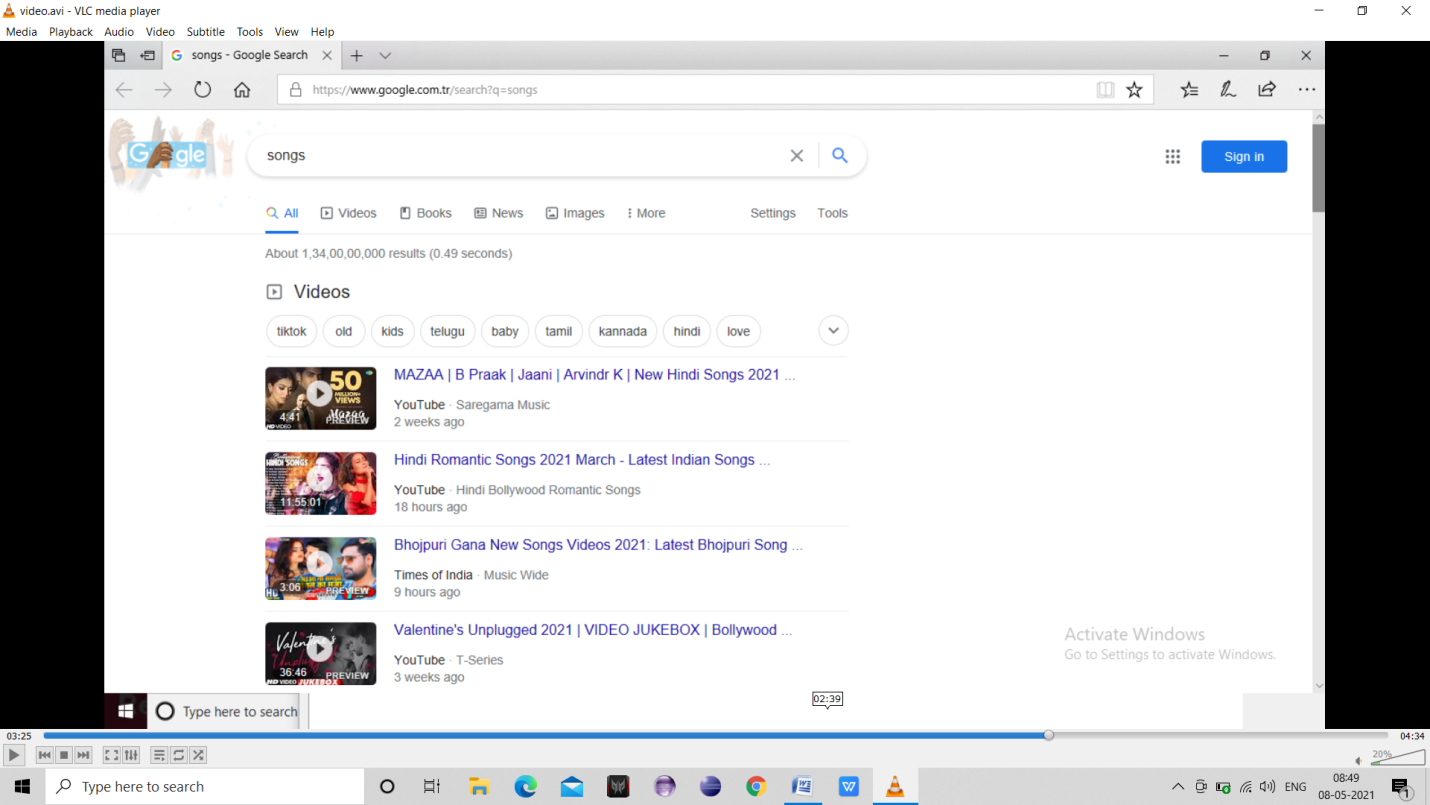












**11. FUTURE ENHANCEMENT**

In future voice assistants can be used for two developments: First quality of dialogue recognition will increase because broadband allows more complex data processing in powerful data centres. Second, from the users perspective, VAs aid for interaction. In the companies, voice assistants can be used to automate repetitive tasks for book meeting rooms and restaurants etc

**12. CONCLUSION**

In our project we have implemented many things compared to other assistants. Now a days it is very useful in human life because it is a hands-free application. It is a very simple application. As well as it is used in a business field also for example in laboratory, the person wears gloves and body suits for their safety purpose so it is difficult to type, through voice assistant they can get any information so that their work becomes easy. Voice assistants are useful in many fields such as education, daily life application, home appliances etc. and voice assistant is also useful for the illiterate people they can get any information just by saying to the assistant, luxury is available for people, thanks to AI based voice assistants.

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