**future of speech recognition.**

• Accuracy will become better and better

.• Dictation speech recognition will gradually become accepted.

11• Greater use will be made of “intelligent systems” which will attempt to guesswhat the speaker intended to say, rather than what was actually said, as peopleoften misspeak and make unintentional mistakes.

• Microphone and sound systems will be designed to adapt more quickly tochanging background noise levels, different environments, with better recognition of extraneous material to be discarded.

**Components of Speech recognitionSystem**

**Voice Input**

With the help of microphone audio is input to the system, the pc sound card produces the equivalent digital representation of received audio [8] [9] [10].

**Digitization**

The process of converting the analog signal into a digital form is known asdigitization [8], it involves the both sampling and quantization processes. Sampling isconverting a continuous signal into discrete signal, while the process of approximating acontinuous range of values is known as quantization.

**Acoustic Model**

An acoustic model is created by taking audio recordings of speech, and their texttranscriptions, and using software to create statistical representations of the sounds thatmake up each word. It is used by a speech recognition engine to recognize speech [8].The software acoustic model breaks the words into the phonemes [10].

**Language Model**

Language modeling is used in many natural language processing applicationssuch as speech recognition tries to capture the properties of a language and to predict thenext word in the speech sequence [8]. The software language model compares the phonemes to words in its built in dictionary [10].

**Speech engine**

The job of speech recognition engine is to convert the input audio into text [4]; toaccomplish this it uses all sorts of data, software algorithms and statistics. Its firstoperation is digitization as discussed earlier, that is to convert it into a suitable format for further processing. Once audio signal is in proper format it then searches the best match for it. It does this by considering the words it knows, once the signal is recognized itreturns its corresponding text string

**Applications2.6.1 From medical perspective**

People with disabilities can benefit from speech recognition programs. Speechrecognition is especially useful for people who have difficulty using their hands,in such cases speech recognition programs are much beneficial and they can usefor operating computers. Speech recognition is used in deaf telephony, such asvoicemail to text.

**2.6.2 From military perspective**

Speech recognition programs are important from military perspective; in Air Force speech recognition has definite potential for reducing pilot workload.Beside the Air force such Programs can also be trained to be used in helicopters

Speech recognition programs are important from military perspective; in Air Force speech recognition has definite potential for reducing pilot workload.Beside the Air force such Programs can also be trained to be used in helicopters , battle management and other applications.

**2.6.3 From educational perspective**

Individuals with learning disabilities who have problems with thought-to-paper communication (essentially they think of an idea but it is processed incorrectlycausing it to end up differently on paper) can benefit from the software.

**Types of speech recognition**

Speech recognition systems can be divided into the number of classes based ontheir ability to recognize that words and list of words they have. A few classes of speechrecognition are classified as under:

**2.3.1 Isolated Speech**

Isolated words usually involve a pause between two utterances; it doesn’t meanthat it only accepts a single word but instead it requires one utterance at a time [4].

**2.3.2 Connected Speech**

Connected words or connected speech is similar to isolated speech but allowseparate utterances with minimal pause between them.

**2.3.3 Continuous speech**

Continuous speech allow the user to speak almost naturally, it is also called the computer dictation.

**Spontaneous Speech**

At a basic level, it can be thought of as speech that is natural sounding and notrehearsed. An ASR system with spontaneous speech ability should be able to handle avariety of natural speech features such as words being run together, "ums" and "ahs", andeven slight stutters

**Speech Recognition Process**

**Fig: 2.1 [4] [8] Speech Recognition Process**

