PROJECT PRESENTATION COMPETITION

APOGEE 2018

**ABSTRACT**

COLLEGE NAME: BITS PILANI

ASSOCIATION NAME: INSTRUMENTATION FORUM

TITLE OF PROJECT: **BLIND MAN READING MACHINE**

TEAM MEMBERS:

**ABSTRACT**

TITLE OF PROJECT: **BLIND MAN READING MACHINE**

CATEGORY PREFERENCE: **SIGNAL PROCESSING**

OBJECTIVE: To make a device which will read a text and give an audio output so that a blind person can know what is written in the text.

IMPLEMENTATION METHODOLOGY: When the text to be read is kept under the setup, the camera will click a photo and send it to the microcontroller. The microcontroller will be coded to perform the task of OCR (optical character recognition). So this will involve an image to text and then text to speech conversion. The microcontroller will then read the words from its preloaded databases and give an audio output.

APPLICATION: The device specifically focuses on the blind people and enables them to read the text which can’t be printed in Braille that easily, like the newspaper. So using our device they can very easily access the information which earlier they could not. It can also be used by the dyslexic children to understand and learn how to read. So this device has a great potential and once the product is made available commercially, the price of the product can be greatly reduced to about 2000 Rs , making it a great success.

JUSTIFY CHOICE OF CATEGORY: In the project, we will be doing image to text and text to speech conversion, which requires us to process the signals sent by the camera to the raspberry pi board. Hence we opt for this category.

BASIC EXPLANATION OF THE PROJECT: The camera will be connected to the raspberry pi board and will be programmed to click photos on receiving signal from the raspberry pi board. The photo then goes to the raspberry pi board where the image to text conversion will take place. We will keep the project specific to a few fonts only as we are only building a prototype. From the photo, the device will match the shapes of the characters with its stored library. It will be programmed such that if the gap between the letters is less, then it will treat it as a continuation of the same word and if the gap between the letters is more, then it will treat it as a space. Doing some more similar operations we will have the text from the image. In the last part, we will use programs to read out the text. For this we will have to use some preinstalled libraries from which the word can be read out. This will then give the audio output and one cycle of reading the text will get over. Once entire text is read out, signal will be sent to the camera to click the next photo as the person turns the page.