**Team Name:V-4**

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|  | **Name** | **Branch and Semester** | **Contact Number** | **Email- ID** |
| **Team Leader** | Likhitha.S. | ECE,4th semester | 8431872134 | likhi2803@gmail.com |
| **Member 1** | Ananya G.R | ECE,4th sem | 8073153972 | Ananyaanju47@gmail.com |
| **Member 2** | Rishitha R Gowda | ECE,4th sem | 63665 83997 | rishitharamachandregowda@gmail.com |
| **Member 3** | Yassawini | ECE,4th sem | 8088172580 | yassawini2001@gmail.com |

**Note:**

1. One can participate either as a part of a team or an individual basis. Switching teams is not allowed.
2. The uploaded ideas will be screened to go to the second round.
3. Judging: competition entries shall be judged, or winners selected based on the following criteria

* Is the problem worth solving
* How innovative or novel is the idea
* Scientific accuracy
* Social impact
* Scalability

1. Decisions of IIC JSSSTU in respect of all matters to do with the competition will be final and no correspondence will be entertained.
2. In second round, the selected teams will have to present their idea in front of the jury panel.
3. Idea should be submitted in **.pdf** format.

**Abstract: (not more than 150 words)**

Engineers have been actively developing tools to detect tumors and to process medical images. Medical image segmentation is a powerful tool that is often used to detect tumors. Many scientists and researchers are working to develop and add more features to this tool. This project is about detecting Brain tumors from MRI images using an interface of GUI in Matlab. Using the GUI, this program can use various combinations of segmentation, filters, and other image processing algorithms to achieve the best results. We start with filtering the image using Prewitt horizontal edge-emphasizing filter. The next step for detecting tumor is "watershed pixels." The most important part of this project is that all the Matlab programs work with GUI “Matlab guide”. This allows us to use various combinations of filters, and other image processing techniques to arrive at the best result that can help us detect brain tumors in their early stages.

**Introduction ( not more than 200 words)**

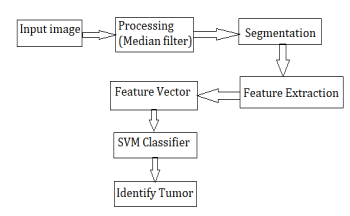
The occurrence of uncontrolled and abnormal growth of cells within the skull is specified as brain tumor. It is basically of two types non-cancerous or benign and cancerous or malignant. However, it would be inappropriate to call benign as non-cancerous because it could be fatal too. The tumor can either damage brain cells directly or even indirectly squeeze different areas of the brain as the tumor grows or swelling inside the brain causing severe pain . It is classified by their location in the brain as well as the tissue they are composed of. Whether the tumor is benign or malignant, the reason for this tumor could be either hereditary or it could be developed before birth such as craniopharyngioma. The reason of brain tumor is not very prominent ultimately. Some of the general symptoms of having it are a headache, vomiting, personality or behavioral changes, intellectual decline, abnormalities of eyes or double vision weakness, lethargy, swallowing difficulty, hand tremor etc.

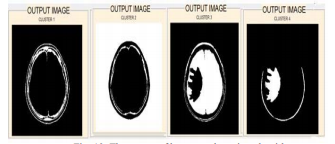
**Motivation (not more than 100 words)**

Nowadays people are suffering from brain tumor at lot. The medical diagnosing this has become the biggest problem without knowing the part the brain tumor is present a doctor cannot treat a patient.So,after the MRI scanning the brain tumor has to be done. To make the detection of brain tumor easy we are developing a code which diagnoses the part in the brain which is affected by the brain tumor and makes it easy for the doctor to treat it properly.Even the small amount of the tumor can be diagnosed.

**Methodology (block diagram, related figures etc):**

Flow of Classification Brain Tumor System



There are many algorithms to detect the brain tumor and the most effective way is clustering which helps in diagnosing the tumor within few minutes.It takes only 4 steps to diagnose this brain tumor.The way of detection of brain tumor using clustering is shown below

**Social Impact:**

In this developing world everything should be fast and it should match the phase.Late diagnosing of the tumor may causes lot of problem to the patient.It should be diagnosed in the initial stage so that a proper treatment can be given to the patient.So through this image processing technique using Matlab one can diagnose the percent of the tumor and the treatment can be given early so that he can recover soon.

**Market Survey :**

It has been used in the hospital and even in the lab centers where the MRI scanning has been done.Its easy to diagnose using the coding so that it helps the doctor to diagnose it in fast pace.In the laboratories they use this technique to diagnose the amount of brain tumor and to locate the place where this tumor is present.