**Course: Advanced Bioinformatics**

**Module title: Medical Imaging**

**Module no. : 25**

With improved health care policy and increasing number of available medical equipment, the number of radiological medical procedures is increasing considerably. Effective and good quality imaging is important for further medical decision making and can reduce unnecessary procedures. Imaging for medical purposes involves the services of radiologists, radiographers, medical physicists and biomedical engineers working together as a team for maximum output. This ensures the production of high quality radiological service with consequent improvement of health care service delivery.

In medical imaging field, input image or videos are mostly in grayscale format losing much of the needed information. Often attained images are blurred, or required area is in an obscured position making the task of image understanding difficult. System for successful identification of diseased portion can result in early detection and diagnosis of disease and saves lives.

Good quality imaging is important for further medical decision making can reduce unnecessary procedures. System increases the quality and accessibility of medical services.

Diagnosing any disease in advance that is at an early stage is beneficial because it allows the doctors to decide which course of action is to be taken for treatment. Contrary to this, if these diagnosing techniques - the forefront of which is medical imaging - are used improperly or in access, then this results in the wastage of precious medical facilities as well as puts the patients’ safety at risk. It is beneficial to everyone, the practitioners as well as the patients. It is profitable, as well as it has become extremely important for timely diagnosis. A histrionic propagation can be seen in the size of diagnostic medical imaging. The main and commonly used forms of medical imaging include X-Rays, CT scan (Computed Tomography), Magnetic Resonance imaging, commonly known as MRI, and nuclear imaging such PET and SPET.

Identifying any biological disorder, is a major problem in the medical domain while it is a grayscale image. This project proposes a technique for detection colorization which is used for the purpose of detecting various kinds of diseases, disorders or variations from the normal cases. Before proceeding it is worth mentioning that all these tasks are being completed more or less by using the current technologies. Our efforts however, are directed towards the early detection of diseases and illness, before they can progress to a state noticeable in the medical imaging techniques. A seemingly humble endeavor, this project has the potential for a vast scope, and subsequently can prove to be helpful, if it becomes technically more advance and sophisticated.