INTRODUCTION

Image processing is an approach for transformation of an image into digital image and applying few operations on it, to get it we extract of some important information from the image. Usually image processing approach applies for two and three dimensional images. Now at present or upcoming technologies rapidly growing, uses of an image processing, now it is used at everywhere like business industry, medicine manufacturing, ceramic industries etc. The image processing is used in research for research, scientist and engineering in the computer science and many other areas. Image processing classified into three ways for processing of any image. First way, in this we capturing the image from real time sensors or image scanner or digital camera, second way in the image we are manipulated, image enhancement, compression of image, feature extraction from the image of ceramic tiles, third way for generate the result we applying different analysis or developing an particular algorithm on the image. Image processing used in various applications like Glass manufacturing, cloth and yarn industry, Ceramic tile manufacturing for controlling the quality factor, Animation for movies and cartoon, offset printing, Forensic laboratory, drone aircraft, Expert system designing, Artificial intelligence, Global positioning system (GPS).

The image processing approach is broadly classified into many types, but two types of image are mostly used in maintaining the quality factor. These named are Analog Image processing (AIP) and Digital Image Processing. In Analog Image Processing is the starting stage or first part of an image processing. These types of images are generated by using electrically by increasing and decreasing of voltage according to its displaying units. In this way we don’t change or altered in image, we change only its appearance pattern like brightness, contrast and sharpness. Examples of analog image processing are Projector, Printer and Television. In Digital image processing (DIP) refers, image is an entity. The digital images processing are four types: Binary digital image, Gray scale digital image, True-color or RGB digital image and Indexed digital image. The image represents the binary representation of object. The image is in two and three dimensions used in digital image processing (DIP). Smallest portion or individual part of an image is called a pixel. For every image is divided into thousands of pixels found in an image. Image is also depends upon one important factor called Resolution. The images are digitally inserted into the computer in two-dimensional contain x and y axis and in
three-dimensional contain x, y and z axis. The image analog image converts by using an image scanner or digital image camera or real time image sensor. The digital image is capture by these devices. When the image is converted in digital form some of formats are: JPEG (Joint Photo graphics Expert Group), GIF (Graphic Image Format), PNG (Portable Network Graphics, TIFF (Tagged Image File Format and BMP (Bit Mapped) by these formats are used to display the digital image in the form of binary image (0 or 1). By using formats we increases and decreases the number of pixels in these formats and these are also called Graphic formats. Graphic formats belong from two categories of graphics vector and scalar. The digital images are collected or captured from digital image camera, most of digital image that are in RGB (Red Green Blue) image is converted into Gray-scale. The reason behind for this converting the intensity of Red Green and Blue has different levels. When a real image converts into digital image at that some of noise is present in image, thus most of noise are found in blue color. This is the main reason for converting RGB image into Gray Scale image. Many types of noise found Gray Scale image are: Salt and Pepper noise, Amplifier noise, Uniform noise, multiplicative noise. For these types of noises are removing by using two types of filtering techniques. The linear filtering technique is also representing as averaging linear filtering. This type of filtering technique uses to find the average value of number of pixel found in noisy image in only pearly determined surface. Mean filter can decreases the intensity variations between different numbers of neighboring pixels. The mean filtering techniques cannot stored the detailed of image when it removing the noise from image. In this technique first we find average mean total number of pixel and then removing the noise. This means filtering techniques not used mostly. The non-linear filter is also representing as median filtering. In this filtering technique, we use the Ranking Gray Scale Based Selection (RGSBS) number of pixel values in filtering area of digital image. The median filter removes greater noise than mean filter techniques. It is also smoothing clearer or greater noise than mean filter. In this filtering technique convocation mask is firstly placed at the center pixel (x, y) value of digital gray scale image then it placed those pixel value that are diagonally connected to the centrally pixel value of (x, y). After the removing noise from digital
Gray scale image we can extracts the different types of feature by using some particular algorithm or some mathematical analysis. By using algorithm we take decision related to the quality factor classification if quality factor equal to its criteria means it belong to good quality otherwise it belong to rejected or defective quality of image or the output is in form of data, chart and images given in figure 1. This is a way for classifications of digital image processing approach.

Now at present the digital image processing approach is used in ceramic tile manufacturing industry because quality maintaining is must for every manufacturing industry. In ceramic tile many types of defect found generally these defects are: Crevice defect occur when some high pressure and heat apply at the time of production, Pinhole defect occur when mixing the raw material of the tile some granular or dust particles are mixed with it, Splash defect occurs when some technical fault in color of drop falls on
its surface of tile, Blobs defect occurs when Improper or mismatch coloring on the surface of ceramic tile, Corner defect occur due to when production phase apply some extra pressure, high temperature and transportation from one place to another, Glaze defect occur when improper color painting on the surface of ceramic tile and Scratch defect occur due to friction on rough surface, it may occur.