**Assignment No: 3**

**Problem Statement:** Domain Specific Analysis.

**Domain: Image Processing**

**Introduction:**

**Computer Imaging:**

It can be defined a acquisition and processing of visual information by computer. Computer representation of an image requires the equivalent of many thousands of words of data, so the massive amount of data required for image is a primary reason for the development of many sub areas with field of computer imaging, such as image compression and segmentation .Another important aspect of computer imaging involves the ultimate “receiver” of visual information in some case the human visual system and in some cases the human visual system and in others the computer itself.

Computer imaging can be separate into two primary categories:

1. Computer Vision

2. Image Processing.

(In computer vision application the processed images output for use by a computer, whereas in image processing applications the output images are for human consumption). These two categories are not totally separate and distinct. The boundaries that separate the two are fuzzy, but this definition allows us to explore the differences between the two and to explore the difference between the two and to understand how they fit.

Historically, the field of image processing grew from electrical engineering as an extension of the signal processing branch, whereas are the computer science discipline was largely responsible for developments in computer vision.

**Image Processing:**

Image processing is computer imaging where application involves a human being in the visual loop. In other words the image are to be examined and a acted upon by people.

The major topics within the field of image processing include:

1. Image restoration.

2. Image enhancement.

3. Image compression.

**Image Restoration:**

Is the process of taking an image with some known, or estimate degradation, and restoring it to its original appearance. Image restoration is

often used in the field of photography or publishing where an image was

somehow degraded but needs to be improved before it can be printed.

**Image Enhancement**:

Enhancement methods tend to be problem specific. For example, a method that is used to enhance satellite images may not suitable for enhancing medical images. Although enhancement and restoration are similar in aim, to make an image look better. They differ in how they approach the problem. Restoration method attempttomodel the distortion to the image and reverse the degradation, where enhancement methods use knowledge of the human visual systems responses to improve an image visually.

**Image Compression:**

Involves reducing the typically massive amount of data needed to represent an image. This done by eliminating data that are visually unnecessary and by taking advantage of the redundancy that is inherent in most images. Image processing systems are used in many and various types of environments, such as:

1. Medical community

2. Computer – Aided Design

3. Virtual Reality

4. Image Processing.

**Short Description Of Project:**

The recent procedure in issuing a passport document is by using the computer in fixing the passport photo. All the passport offices are connected through a network to exchange information to verify the correctness and authenticity of the passport. Passport images can also be transferred between offices to verify the authenticity of the passport holder.

The main problem is how to confirm the authenticity of the passport photo with the holder’s details. The passport document contains holder’s signature in addition to the holder’s details. But there is no association between the passport photo and the passport owner details. So a passport photo can be replaced with other person’s photo. Hence the purpose of the improved authentication scheme is to establish a firm connection between the passport photo and passport details.