**Milestone 1: Define Problem / Problem Understanding**

**Activity 1**

1: Specify the business problem Refer to Project Description

**Activity 2**

2: Business requirements The business requirements for a machine learning model to predict thyroid disease include the ability to accurately predict thyroid disease based on the scan results, Minimise the number of false positives (wrong thyroid disease confirmations) and false negatives (thyroid is there but got as not thyroid disease). Provide an explanation for the model's decision, to comply with regulations and improve transparency.

**Activity 3**

3: Literature Survey (Student Will Write) The thyroid gland is one of the body’s most visible endocrine glands. Its size is determined by the individual’s age, gender, and physiological states, such as pregnancy or lactation. It is divided into two lobes (right and left) by an isthmus (a band of tissue). It is imperceptible in everyday life yet can be detected when swallowing. The thyroid hormones T4 and T3 are needed for normal thyroid function. These hormones have a direct effect on the body’s metabolic rate. It contributes to the stimulation of glucose, fatty acid, and other molecule consumption. Additionally, it enhances oxygen consumption in the majority of the body’s cells by assisting in the processing of uncoupling proteins, which contributes to an improvement in the rate of cellular respiration. Thyroid conditions are difficult to detect in test results, and only trained professionals can do so. However, reading such extensive reports and predicting future results is difficult. Assume a machine learning model can detect the thyroid disease in a patient. The thyroid disease can then be easily identified based on the symptoms in the patient’s history. Currently, models are evaluated using accuracy metrics on a validation dataset that is accessible.

**Activity 4**

4: Social or Business Impact. Social Impact:- Untreated/undetected thyroid disease is more dangerous at times it can lead to fatal of the person. So, we can detect it at the earliest then people can get treatment and get cured. Business Model/Impact:- We can make this application public, offer services as a subscription based or can collaborate with healthcare centres or specialists.