**Aim**: To Develop the cost estimation (LOC & FP method) for the project.

**Theory**:

Cost estimation is the process of developing a well-defined relationship between a cost object and its cost driver for the purpose of predicting the cost. The cost predictions are used in each of the management functions:

Strategic Management: Cost estimation is used to predict costs of alternative activities, predict financial impacts of alternative strategic choices, and to predict the costs of alternative implementation strategies.

Planning and Decision Making: Cost estimation is used to predict costs so that management can determine the desirability of alternative options and to budget expenditures, profits, and cash flows.

Management and Operational Control: Cost estimation is used to develop cost standards, as a basis for evaluating performance.

Product and Service Costing: Cost estimation is used to allocate costs to products and services or to charge users for jointly incurred costs.

The assumptions used in cost estimation are:

a. Linear functions can estimate cost behavior within a relevant range

b. Other assumptions are specific to the estimation method chosen, for example, the assumptions of regression are covered in Appendix B.

The three methods of cost estimation are:

a. High-Low. Because of the precision in the development of the equation, it provides a more consistent estimate than the visual fit and is not difficult to use.

Disadvantages: uses only two selected data points and is, therefore, subjective.

b. Work Measurement. The advantage is accurate estimates through detailed study of the different operations in the production process, but like regression, it is more complex.

c. Regression. Quantitative, objective measures of the precision and reliability of the model are the advantages of this model; disadvantages are its complexity: the effort, expense, and expertise necessary to utilize this method.

Implementation problems with cost estimation include:

a. Cost estimates outside of the relevant range may not be reliable.

b. Sufficient and reliable data may not be available.

c. Cost drivers may not be matched to dependent variables properly in each observation.

d. The length of the time period for each observation may be too long, so that the underlying relationships between the cost driver and the variable to be estimated is difficult to isolate from the numerous variables and events occurring in that period of time; alternatively the period may be too short, so that the data is likely to be affected by accounting errors in which transactions are not properly posted in the period in which they occurred.

e. Dependent variables and cost drivers may be affected by trend or seasonality

**Procedure**: The six steps in cost estimation are as follows:

a. Define the cost to be estimated.

b. Determine the cost drivers.

c. Collect consistent and accurate data.

d. Graph the data.

e. Select and employ the appropriate estimation method.

f. Assess the accuracy of the cost estimate.

**Output**:

