

Sr. No.	List of LP-I Assignments
1	Implement Parallel Reduction using Min and Max operations.
2	Implement Parallel Reduction using Sum and Average operations.
3	Write a CUDA program that, given an N-element vector, find- <ul style="list-style-type: none"> The maximum element in the vector The minimum element in the vector
4	Write a CUDA program that, given an N-element vector, find- <ul style="list-style-type: none"> The arithmetic mean of the vector The standard deviation of the values in the vector
5	Vector and Matrix Operations- Design parallel algorithm to <ol style="list-style-type: none"> Add two large vectors Multiply Vector and Matrix
6	Vector and Matrix Operations- Design parallel algorithm to <ol style="list-style-type: none"> Multiply Vector and Matrix Multiply two $N \times N$ arrays using n^2 processors
7	Vector and Matrix Operations- Design parallel algorithm to <ol style="list-style-type: none"> Add two large vectors Multiply two $N \times N$ arrays using n^2 processors
8	Implement parallel bubble sort and merge sort.
9	Implement parallel K Nearest Neighbors Classifier.
10	Solve 8-puzzle problem using A* algorithm. Assume any initial configuration and define goal configuration clearly.
11	Implement medical expert system for Diagnosis of 10 diseases based on adequate symptoms.
12	Develop elementary chatbot for suggesting investment as per the customers need.
13	Implement Best first search using heuristic Search Technique.
14	Implement A* search using heuristic Search Technique.
15	Use Python/R and Perform following on Iris dataset. <ul style="list-style-type: none"> How many features are there and what are their types (e.g., numeric, nominal)? Compute and display summary statistics for each feature available in the dataset. (eg.

	<p>minimum value, maximum value, mean, range, standard deviation, variance and percentiles</p> <ul style="list-style-type: none"> • Data Visualization-Create a histogram for each feature in the dataset to illustrate the feature distributions. Plot each histogram. • Create a boxplot for each feature in the dataset. All of the boxplots should be combined into a single plot. Compare distributions and identify outliers.
16	<p>Use Naive Bayes Algorithm for classification on Pima Indians Diabetes dataset.</p> <ul style="list-style-type: none"> • Summarize the properties in the training dataset so that we can calculate probabilities and make predictions. • Classify samples from a test dataset and a summarized training dataset. • Create confusion matrix and print accuracy rate.
17	<p>Trip History Analysis: Use trip history dataset that is from a bike sharing service in the United States. The data is provided quarter-wise from 2010 (Q4) onwards. Each file has 7 columns. Predict the class of user.</p>
18	<p>Bigmart Sales Analysis: For data comprising of transaction records of a sales store. Predict the sales of a store.</p>
19	<p>Design and implement parallel algorithm utilizing all resources available for Binary Search for Sorted Array</p>
20	<p>Design and implement parallel algorithm utilizing all resources available for Depth-First Search (tree or an undirected graph)</p>
21	<p>Design and implement parallel algorithm utilizing all resources available for Breadth-First Search (tree or an undirected graph)</p>
22	<p>Design and implement parallel algorithm utilizing all resources available for Best-First Search that (traversal of graph to reach a target in the shortest possible path)</p>