BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
WORK INTEGRATED LEARNING PROGRAMMES DIVISION
AI and ML for Robotics
Lab Assignment 2

Total Marks = 20 Marks (5M for each of the questions listed in below implementation)

Intended Learning Outcome:

 Students should be able to

- Relate the approach followed in the research paper with the learnt concept
- Implement Localization, Mapping & Planning
- Integrate the modules of the robotic programming
- Apply AIML technique for the phases of robotics

Prerequisite:

 Students should go through the lectures corresponding to Modules # 2, #3, # 4 & #5(until completion)

Submission Deadline: 10th August 2025

Question:

Implement following with reference to your assignment-1 submission in simulation tool of your choice. Ensure that all the group members consent & ready to work in your group preferred simulation tool of choice.

I.   Markov Localization
II.   Grid based SLAM
III.   D* Planner
IV.   In any one of the above algorithms, use reinforcement learning. Justify your choice & relevance to the algorithm.

Note: Uniqueness, Relevancy to the Assignment 1 Research Paper's work, Modularised Code Design, Reusability & Feasibility of extension are few key criterion for evaluation.