# Habib University
## *Assignment #3*

| Course Code: CS 352 | Introduction to Reinforcement Learning | Given: 09/04/2023 |
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| Due: 20/04/2023 | Spring 2023 | Maximum Marks: 100 |

**General Instructions:**

1. Please type the answers or write neatly in longhand.
2. Upload your word or PDF (if you write in longhand, scan and convert to PDF) file to Canvas.
5. No late submission will be accepted.

**Instructions for Programming Assignments:**

1. Upload your Python code as .py file and the output of the programs, if required, as PDF files to Canvas.
2. For programming assignments, short of copying and pasting complete code from other students, from published material and from the internet, you may use any resources that are available to you.
3. You are responsible for whatever you submit and must fully understand the work that you submit.
4. Submit solution to each question as a single .py file.
5. Include your ID in the name of the python files that you upload. For example, if your ID is 04321 then you should name the files A3_Q1_04321.py and A3_Q2_04321.py.
6. Assignments will be graded by inviting you to my office and asking you to explain the code or asking you questions to judge your understanding.

**Q1.** Implementing the policy iteration algorithm on the grid of Q#2 in Assignment#2 to generate the optimal value function $v_*$ and an optimal policy $\pi_*$.

**Q3.** Implement the complete policy iteration algorithm on the modified GridWorld of the Q#3 in Assignment#2 using the First-visit Monte Carlo as the prediction algorithm. Start with an arbitrary initial policy.