CECS 451
Assignment 2
Total: 40 Points

General Instruction

- This assignment is a team project.
- Submit your work in the Dropbox folder via BeachBoard (Not email or in class).

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1. (40 points) Design and implement a cleaning robot program.
   i. Use `Python 3.7`. (`Python 2.7` is not allowed.)
   ii. Find the `Python` package, `VacuumRobot.zip`.
   iii. You are asked to implement the `clean` method of the `Robot` class in the `robot.py`.
   iv. Follow the specification
      - A `Map` instance has 19×19 locations, and each location is dirty (1) or not (0).
      - The robot can change the status of a location (from dirty (1) to clean (0)) when it is located on the location.
      - The robot should begin the cleaning job from $[0, 0]$ location.
      - The robot has up to 8 adjacent locations, i.e., Top-left, Top-middle, Top-right, Left, Right, Bottom-left, Bottom-middle, Bottom-right.
      - The robot can see only adjacent locations' cleaning condition.
      - The robot can move to the one of the adjacent locations of the current location.
      - The robot should record its locations in the `self.track` list.
      - The robot should clean all of the dirty locations.
      - The length of the `self.track` list should be definitely less than 19×19.
   v. Submit your `robot.py`.