SLAM bot: First Mini-Project

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Assume the SLAMBOT has sensors for monitoring the space around it (aside the LIDAR). However, it lacks the necessary programming to make sense of the data provided by such sensors in order to react under an abnormality in an enclosed area. It is important to highlight that the robot will remain in standby when this feature is enabled. For simplification purposes, one HC-SR04 (ultrasonic sensor) in its front face and one HC-SR501 (PIR motion sensor) below the LIDAR, which would be sufficient to monitor the door and the space enclosed by an empty room. In this mode, the robot will be facing the door of the room.
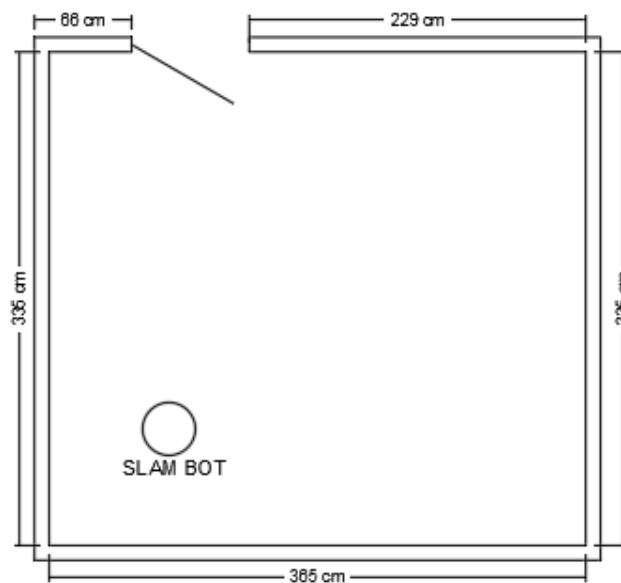
Do not worry too much about how to interface with the sensors or the code behind obtaining data from them. These sensors output digital signals. For the moment, consider their outputs as Boolean variables. Your code should have at least two packages. The first one with two nodes; one for each sensor. The other package should contain one for processing the signals.

There are multiple ways for solving this challenge. The goal is to create a working system. Be creative.