Parking System Project Details

A university is currently using three parking areas to accommodate the staff, faculty and students' cars. Each parking is supervised by two guards who try to park the cars according to their arrival and leaving time. The parking guards are complaining about the inefficiency and the waste of time that they spend each day trying to organize the cars in each parking's.
You are approached by the university administration to implement a system to help in organizing the three parking's and minimizing the wasted time spent in searching for a parking slot. Your solution should take into consideration the following constraints:

- Each parking opens from 8:00 a.m. till 8:00 p.m.
- The first parking (B- biggest parking area), can accommodate 15 cars in a column
- The second parking (M- middle parking area), can accommodate 10 cars in a column
- The first parking (S- smallest parking area), can accommodate 5 cars in each column
- The first row in each parking is reserved for the faculty and staff
- Each parking has the same number of rows per column
- To park you should specify the parking area as B, M, or S and the parking time. The system will check for the availability. If a parking spot is available the system will allow the user to park his car. If not, the system will redirect the user to another parking. If no parking slot is available at the three parking's the system will ask the user if he would like to park in a column reserved for cars that leave at a later time. The user may not choose to park at a time earlier than the one he/she specified at the beginning.
- The system should provide the following information about the three parking's:
    - ✓ The total number of parked cars at a specific hour
    - ✓ The number of parked cars in each parking
    - ✓ The number of available parking slots
    - ✓ View the three-parking area.
    - ✓ The number of rejected parking request