

Universiti Teknologi MARA

**Beacon-based Train Seat Alert System
for Pregnant Travellers**

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ABSTRACT

Some pregnant travellers might not feel comfortable with asking for seat directly to a passenger that seating in the priority seat. Other passengers that seating in the priority seats might not notice towards their surroundings as they are too immersed playing with their smartphones. There are small numbers of passengers that lack of courtesy and they tend to ignore those who has privileges by sleeping. Due to that, this project is to design a device that effortlessly help the pregnant woman to get a seat in the train. Next, this project is to develop a device that can alert the passenger that is seating in the priority seat to give up the seat. Moreover, this project is to test the functionality of the device so that it will alert other passengers. The project development will include sensor-based technology and management system. Beacon will be use in this project as the sensor-based device and a management system will be developed to organize the process of applying for the device using Bootstrap framework. It is expected that by the end of this project a prototype of a sensor-based train seat for pregnant travellers using beacon will be developed.

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CHAPTER 1

INTRODUCTION

In this chapter, it will provide the description of the project and discuss about the project background, problem statements, project's objectives, project's scope and as well as significance of the project.

1.1 Project Background

Public transports such as trains are widely use nowadays due to the heavy traffic not only in the city but also in the suburbs as it connects intercity. Trains are used by wide range of age including senior citizen, pregnant woman, disable, school kids and working adults. People ride the train to work, to school and even for leisure. Those who do not own any private vehicles also use public transports to their destination.

Priority seat are provided in the train for senior citizen, woman and disabled. Currently the difference between normal and priority seat are the colour of the seat. Priority seat are red coloured while normal seats are blue coloured. There are signs near the priority seat that shows the seat are available for people suit to the requirement.

A small number of passengers that sit at the priority seat have no courtesy and ignorant. They tend to ignore the one who need the seat and pretending to be asleep or playing with their smartphones. During peak hours, the train would be packed with people who are going to work or getting back home from work. So, for the pregnant woman to get a seat is quite difficult during these hours. According to the statistic provided by SPAD in 2015, 63% women ride the train compared to 37% men. The purpose of the sensor-based train seat is to ease the process of getting a seat from other passengers.