Indoor Localization System

Aditya Trivedi

CONTENTS

- Introduction
- Why Indoor Localization System?
- Data flow diagram
- Working Logic
- Business uses
- Constraints
- Future Scope

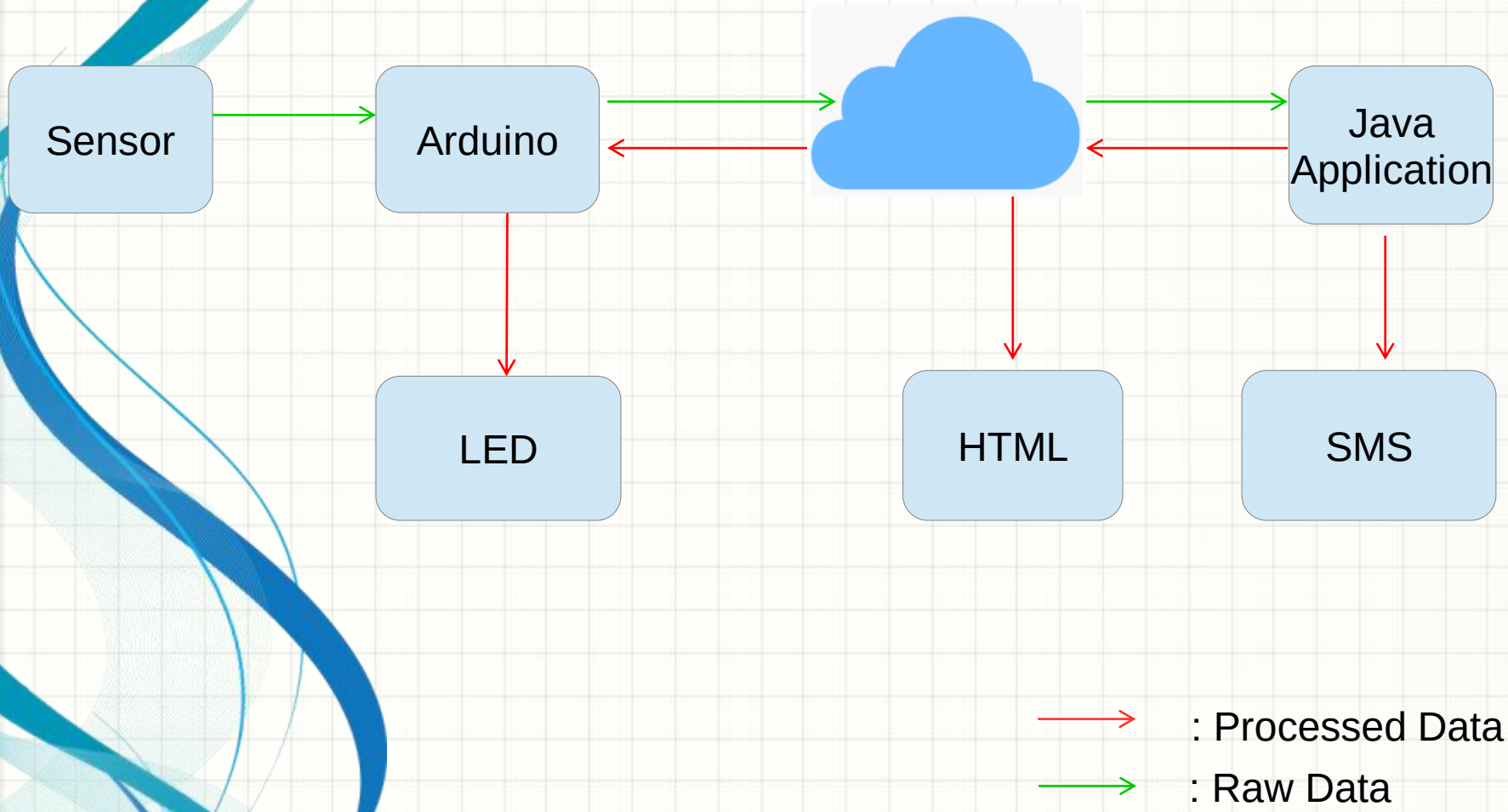
INTRODUCTION

- Indoor Localization Systems (ILS) locate people or objects inside buildings.
- It uses proximity sensors to determine the accurate location of an object.
- A bundle of physical and mathematical methods is applied to compensate for these problems .

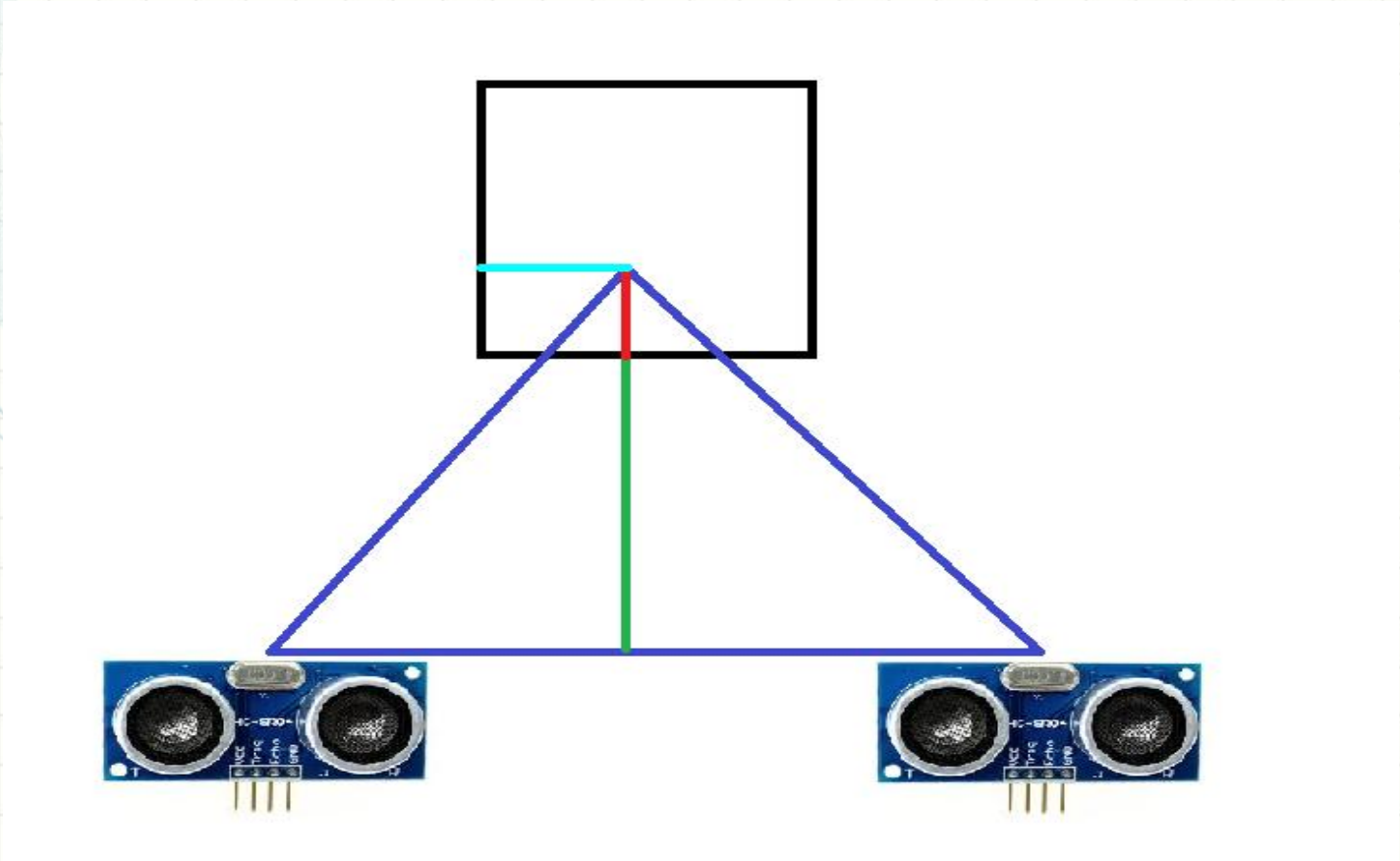
WHY ILS?

- Satellite based positioning system GPS gives us the location of our smart phone when we are outdoors.
- Indoor localization Systems (ILS) does the same thing indoors.
- Unfortunately the GPS system cannot be used indoors since it is based on very weak signals from satellites, signals that are easily blocked by a roof or walls.
- Hence, the accuracy of the GPS system drops significantly when you enter a building. In order to reach an accuracy of 1–5 meters indoors, a completely different solution is needed.

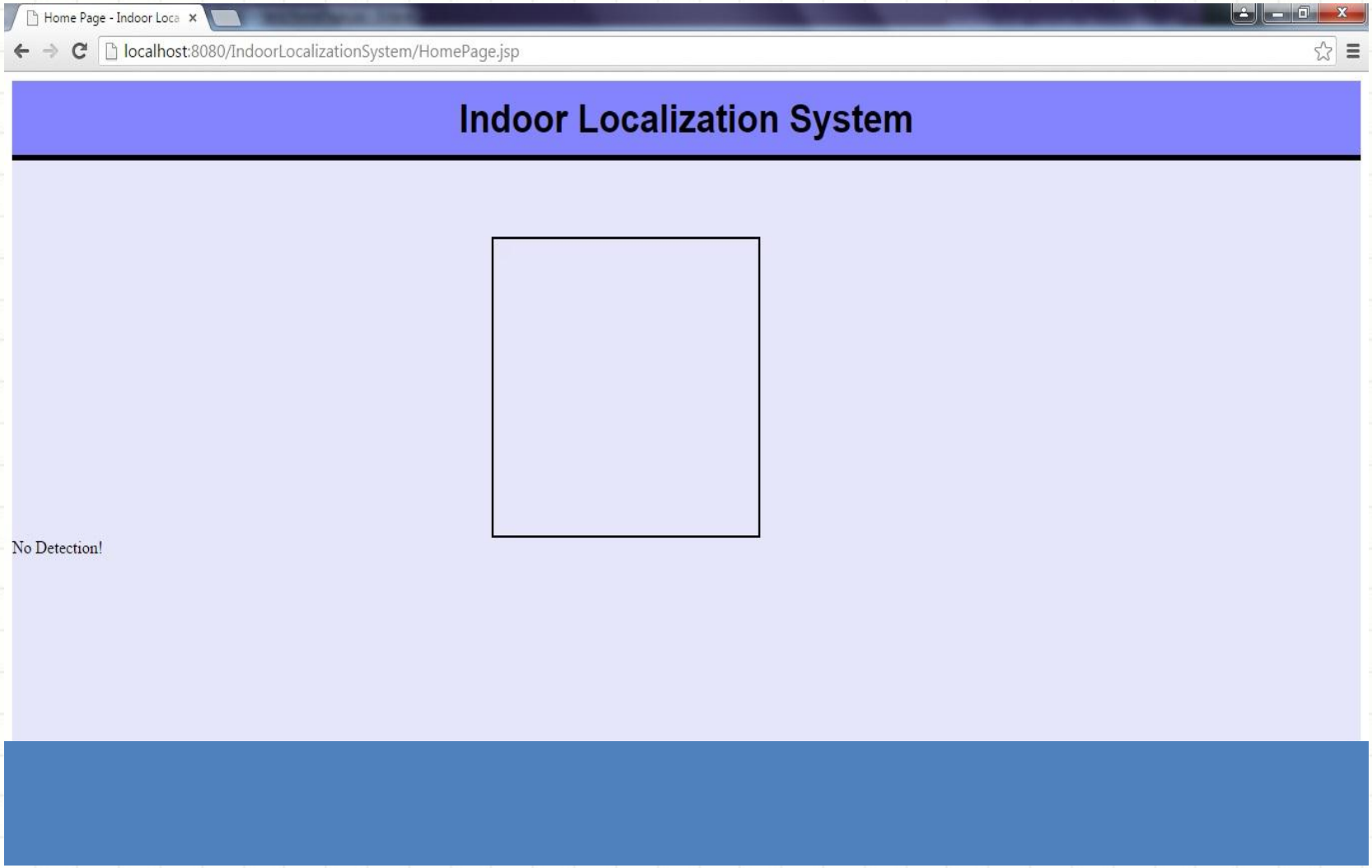
DATA FLOW DIAGRAM



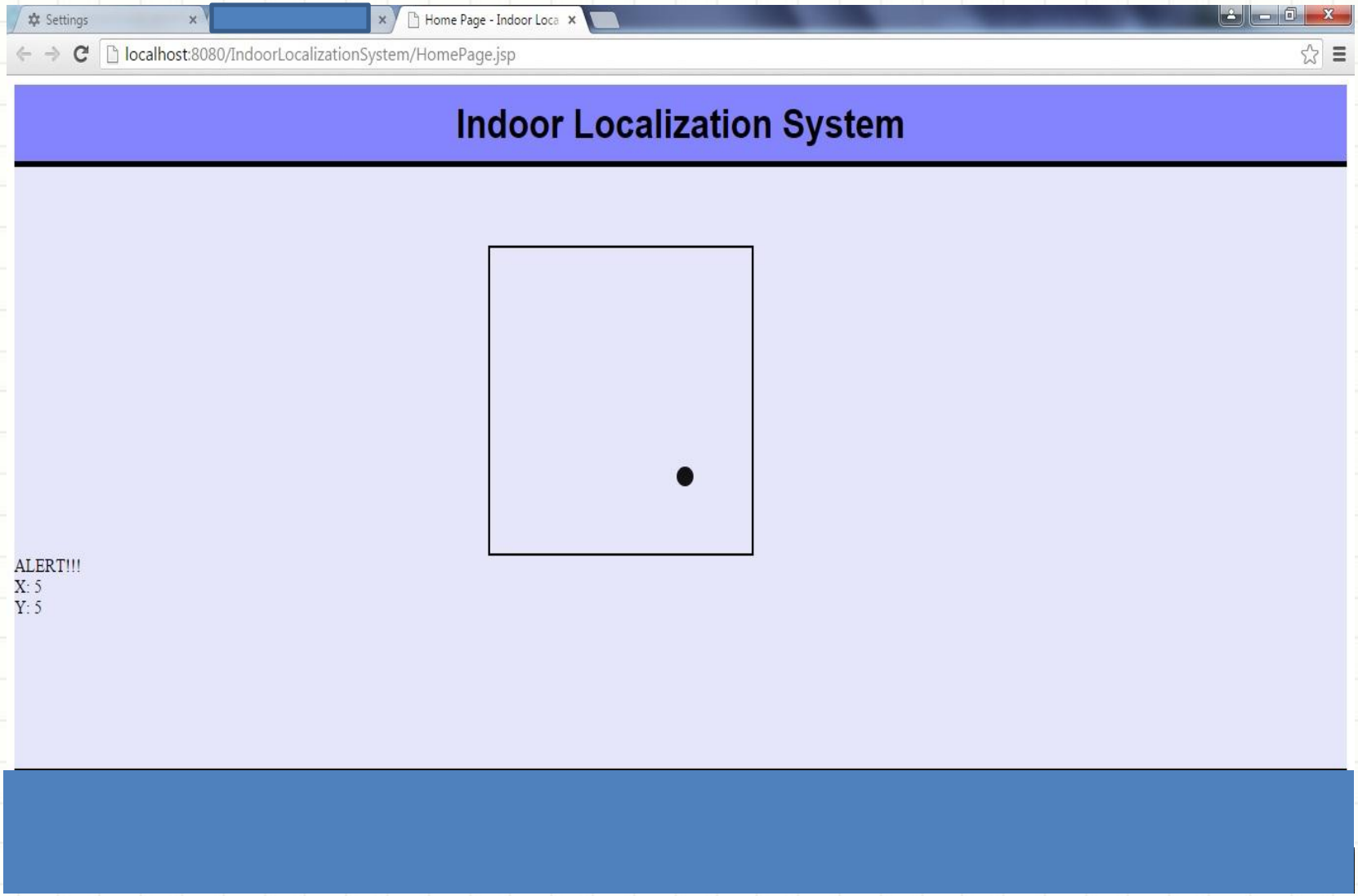
LOGIC



WEB PAGE SCREENSHOT



WEB PAGE


Settings
Home Page - Indoor Loca
localhost:8080/IndoorLocalizationSystem/HomePage.jsp
Indoor Localization System
ALERT!!!
X: 5
Y: 5

BUSINESS USES

- The major consumer benefit of indoor localization is the expansion of location-aware mobile computing indoors.
- Applications benefiting from indoor location include:
  - School campus
  - Guided tours & museum
  - Augmented reality
  - Agricultural farms
  - Hospitals
-

CONSTRAINTS

- It can detect only a single object at a time.
- It can't detect orientation or direction of the object.
- The project currently works on a small scale, so accuracy around the borders is low.

FUTURE SCOPE

- With the use of motion sensors we can determine orientation of object indoor.
- System can be made more accurate by making it hybrid.(GPS+ILS)
- By using array of sensors we can cover large area and more accurate results.

THANK YOU

Aditya Trivedi