E-health web app for Iot devices

Ahmed Gouda, Pierpaolo Vendittelli, Anindya Shaha
ahmedmost.gouda@gmail.com, pierpaolo.vendittelli93@gmail.com
anindo@ieee.org

Distributed Programming and Networking — AY 2018/2019
Medical Imaging and Applications (MaIA)
Università degli studi di Cassino e del Lazio Meridionale

Contents

- Abstract
- Architecture
- Mockups
- Languages, ENV, TECH
- Moscow table

Abstract

Wearable and remotely accessible medical sensors are the new frontier in healthcare and this technology is primarily driven by the **Internet of Things (IoT)**. In this project, we propose the backbone infrastructure for a modular **e-health system**. The IoT side is powered by a **microcontroller** (with WiFi module and medical sensors) that collect **real-time health data** (pulse, ECG, EEG, etc.) from the user. This is forwarded and updated in a **cloud server database** in the back-end. Finally, a **graphical web interface** in the front-end allows the user or a medical professional to examine and analyse the data from any remote location across the world.

Architecture

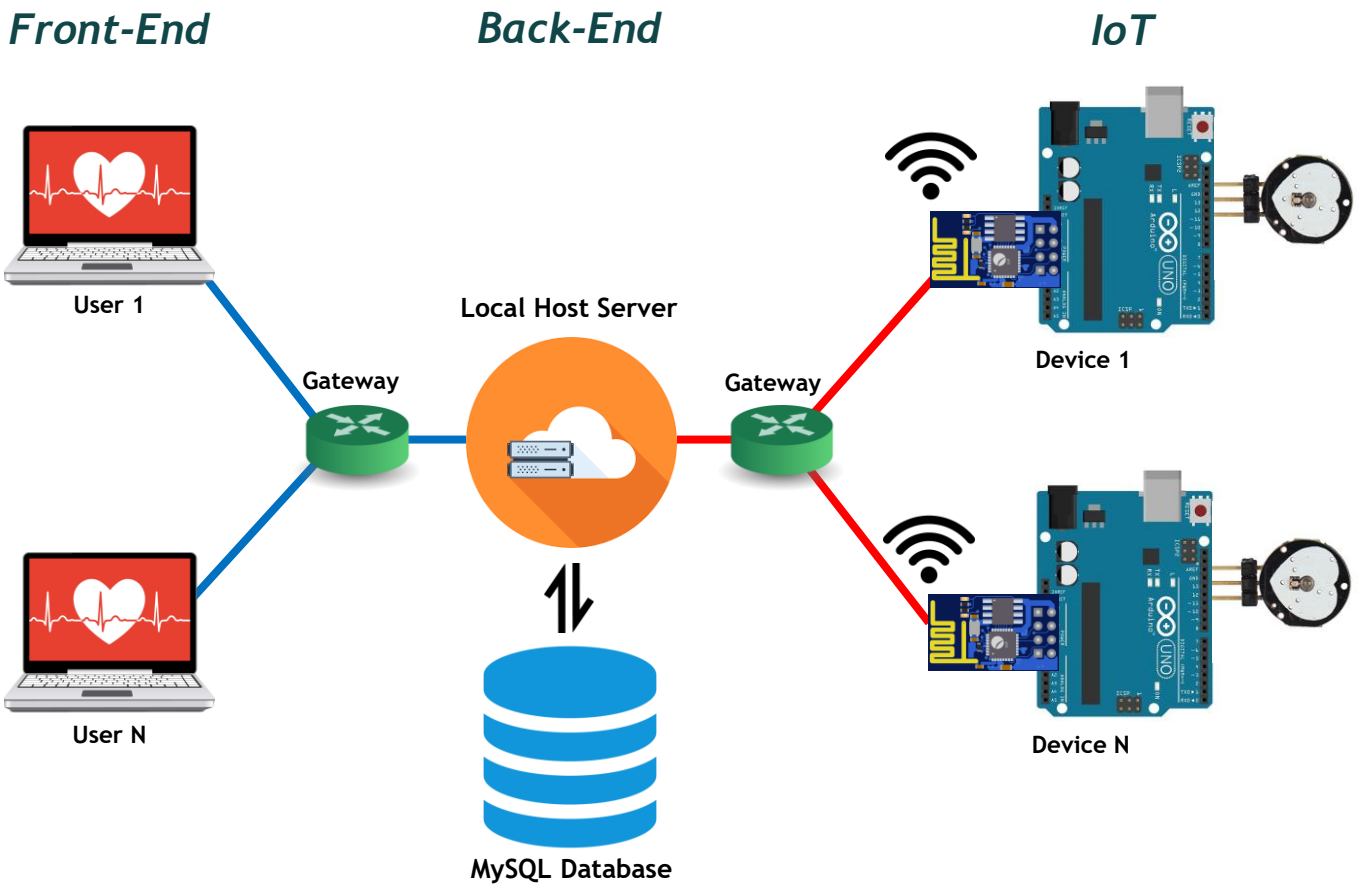

Fig 1: Mockup for the Sign-in Page

Mockups

Fig 1: Mockup for the Sign-in Page

Mockups

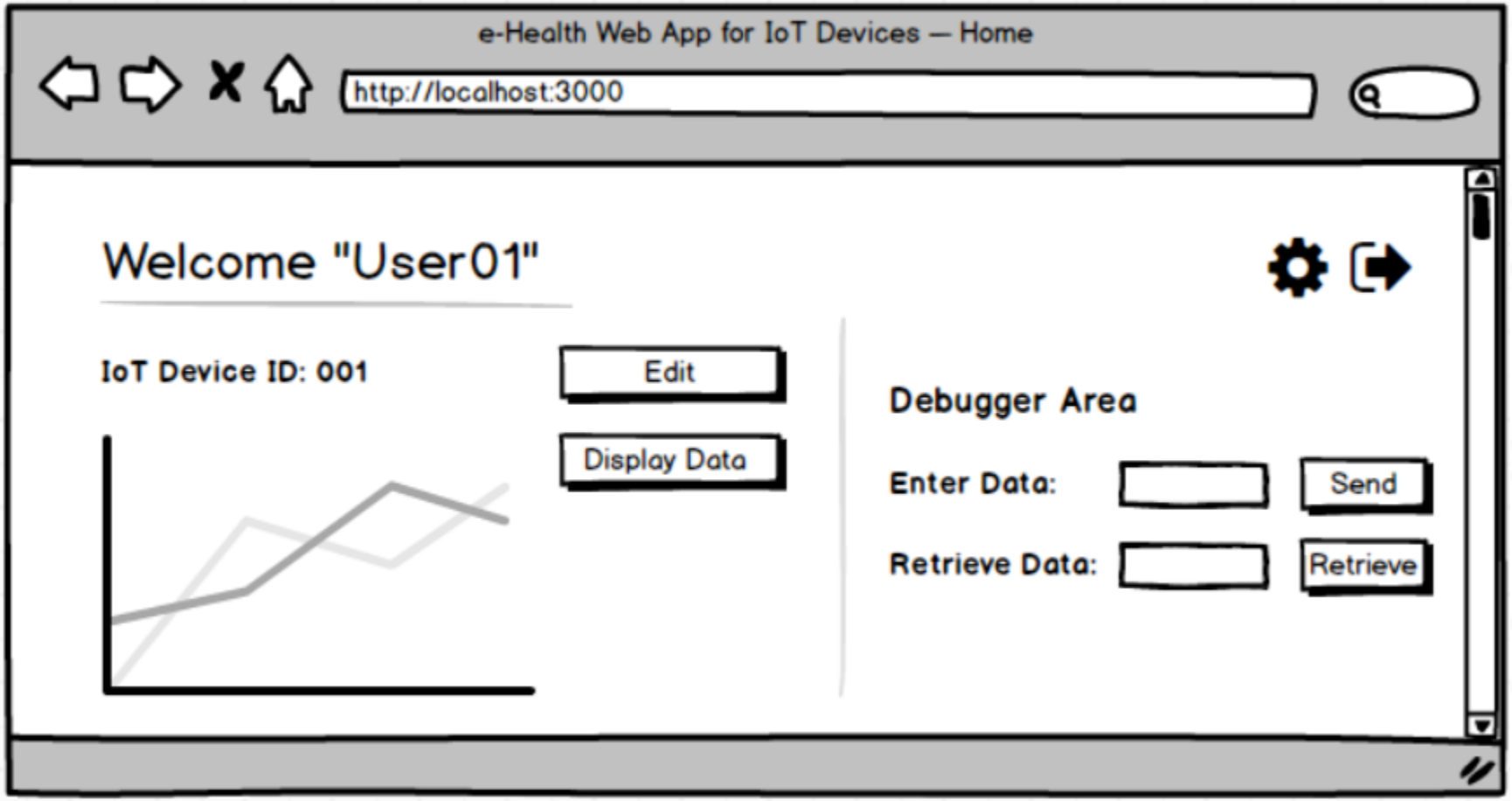

Fig 1: Mockup for the Home Page

Mockups

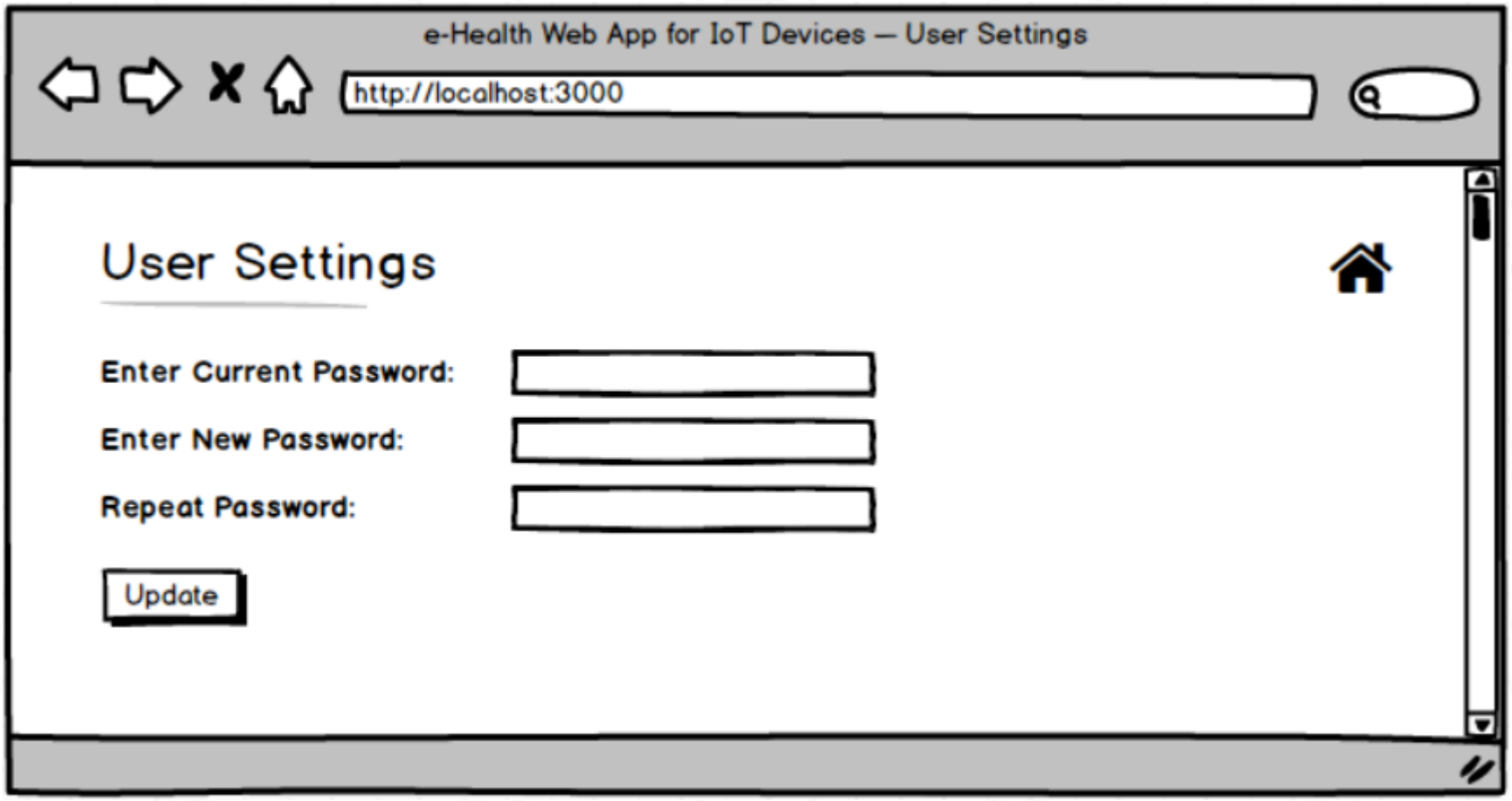

Fig 1: Mockup for the Home Page

Mockups

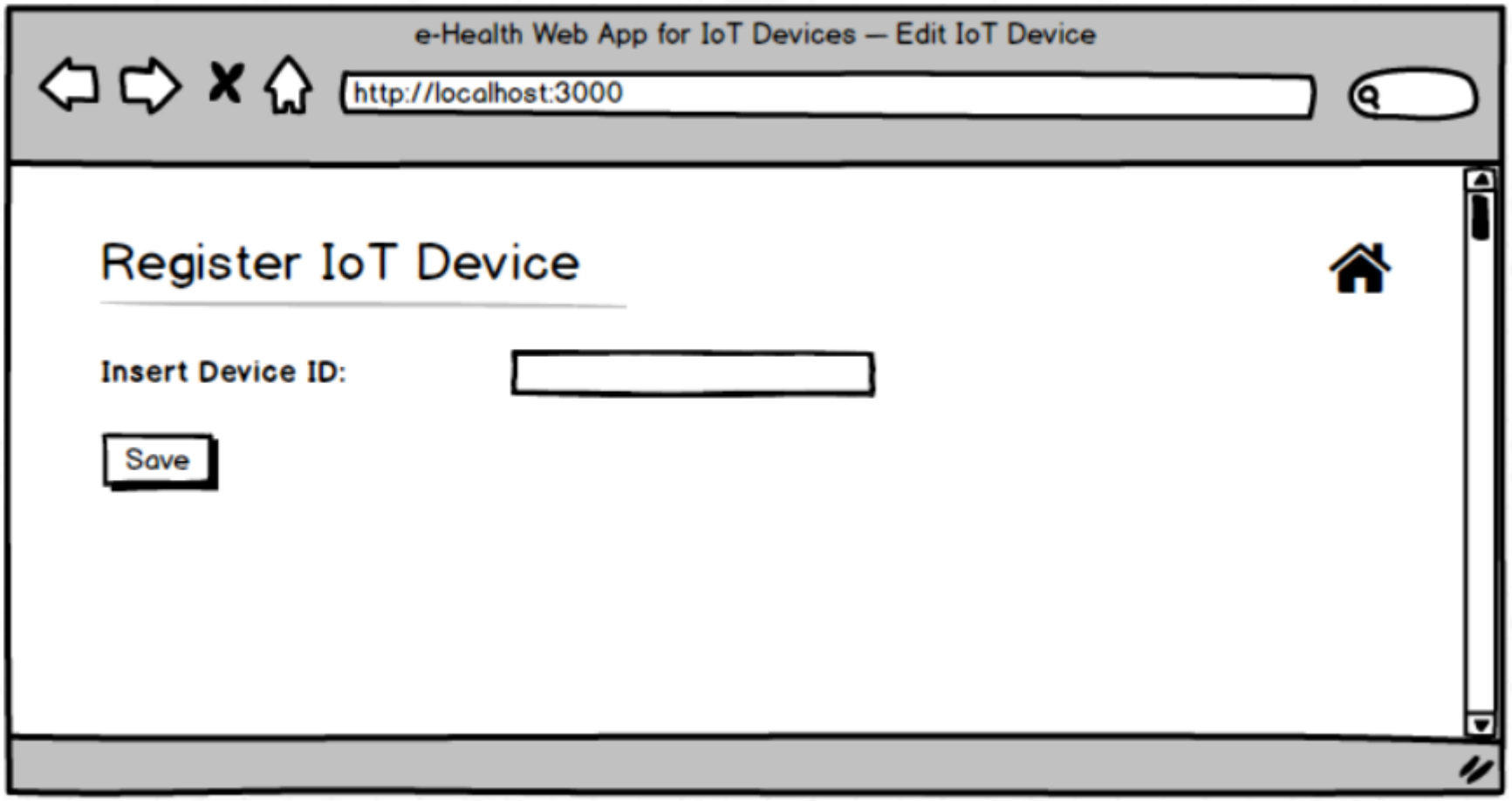

Fig 1: Mockup for the Home Page

Mockups

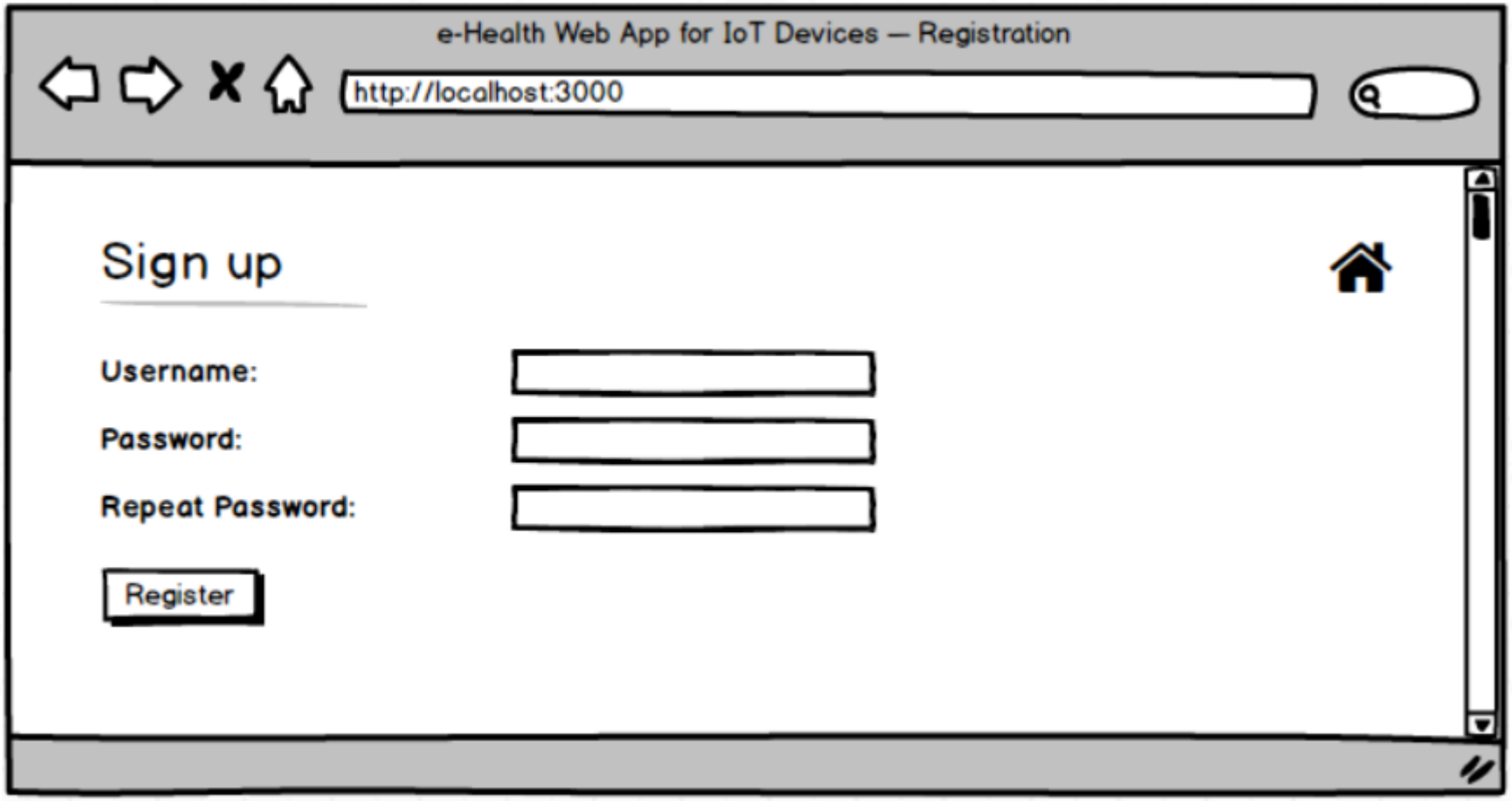

Fig 1: Mockup for the Home Page

Languages, ENV, TECH

Server/Client

Languages:

JavaScript (+ Node.js, JQuery)

HTML

CSS

Tracing/Visualisation:

Fiddler

Environment:

XAMPP (MySQL)

Visual Studio Code

IoT

Languages:

Embedded C

Hardware:

ESP8266 **WiFi Module**

DSD TECH **USB-TTL Serial Converter**

Arduino UNO

Tragoods **Heart Rate Monitor** Sensor

Tracing/Visualisation:

Proteus Professional **Simulation**

Serial Terminal Program*

Environment:

Arduino IDE/Atmel Studio

*To Be Decided

Languages, ENV, TECH

Server/Client

Languages:

JavaScript (+ Node.js, JQuery)

HTML

CSS

Tracing/Visualisation:

Fiddler

Environment:

XAMPP (MySQL)

Visual Studio Code

IoT

Languages:

Embedded C

Hardware:

ESP8266 **WiFi Module**

DSD TECH **USB-TTL Serial Converter**

Arduino UNO

Tragoods **Heart Rate Monitor** Sensor

Tracing/Visualisation:

Proteus Professional **Simulation**

Serial Terminal Program*

Environment:

ıo IDE/Atmel Studio

**To Be Decided*

Moscow table

	Server/Client	*IoT*
Mo	**User** Registration/Login **IoT Device** Registration **Front-End Design**	**Microcontroller** Circuits **Network** Modules
S	**User** Profile Modification **IoT Device** Modification **Data** Visualization	**Medical** Sensors* **Feedback** Notifications
Co	**Bidirectional** Dataflow **User** Notifications **Data** Encryption **Multiple IoT** Device/User	**Graphical** LCD Display **Portability**
W	**Data** Analysis/Diagnosis **Mobile** App Version **Connecting** with Health Centers	**Wearable** Gadgets **Power** Management **Firmware** Updates

**Based on Approval and Funding*

Gantt chart

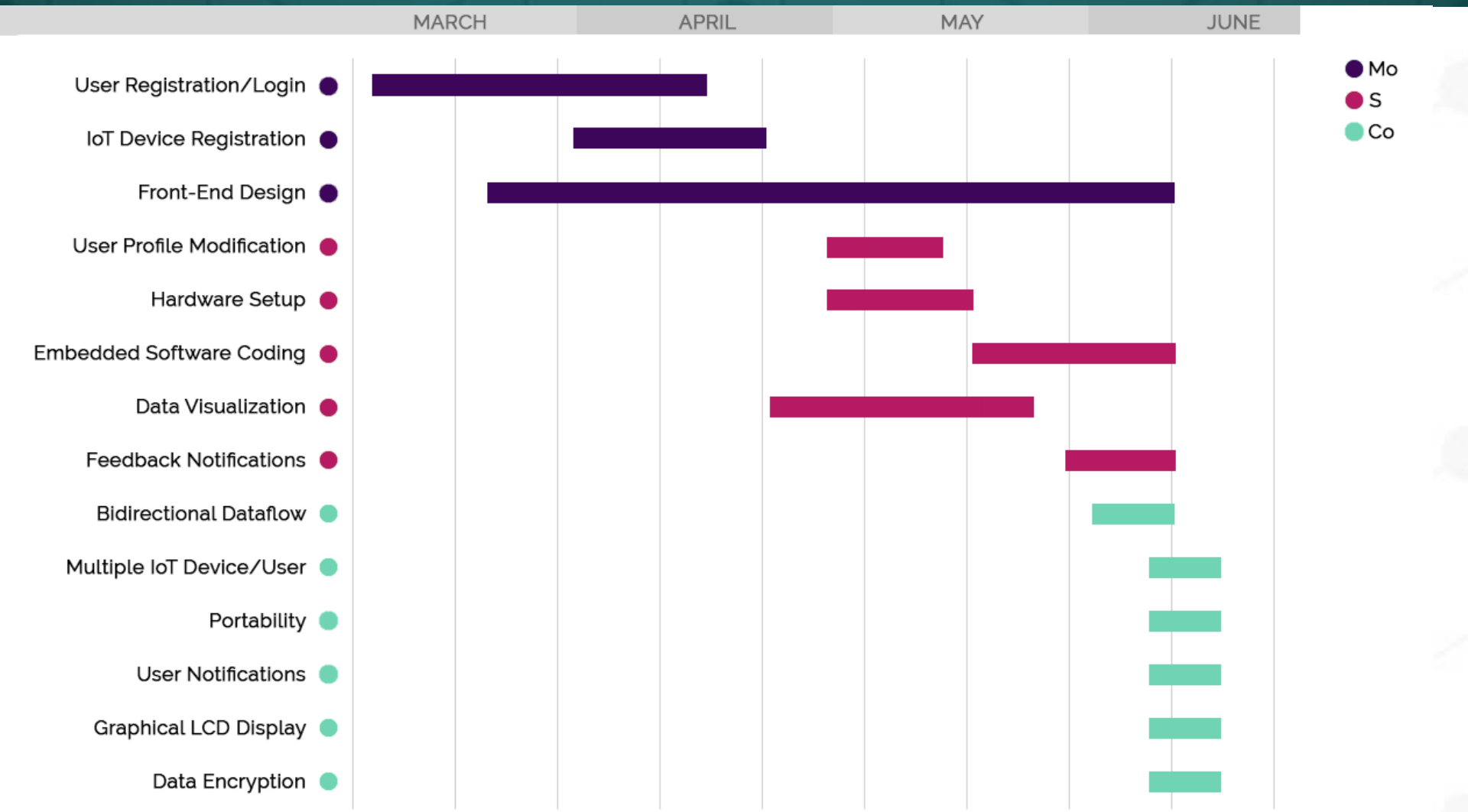

Fig 1: Project Gantt Chart

Thank you.