



My Home LED

이지원

Python & RaspberryPi Project

CONTENTS

- 1** ——— **Project Name**
- 2** ——— **Process**
- 3** ——— **User Action Diagram & Design**
- 4** ——— **Table Schema**
- 5** ——— **Points of Improvement**

1. Project Name

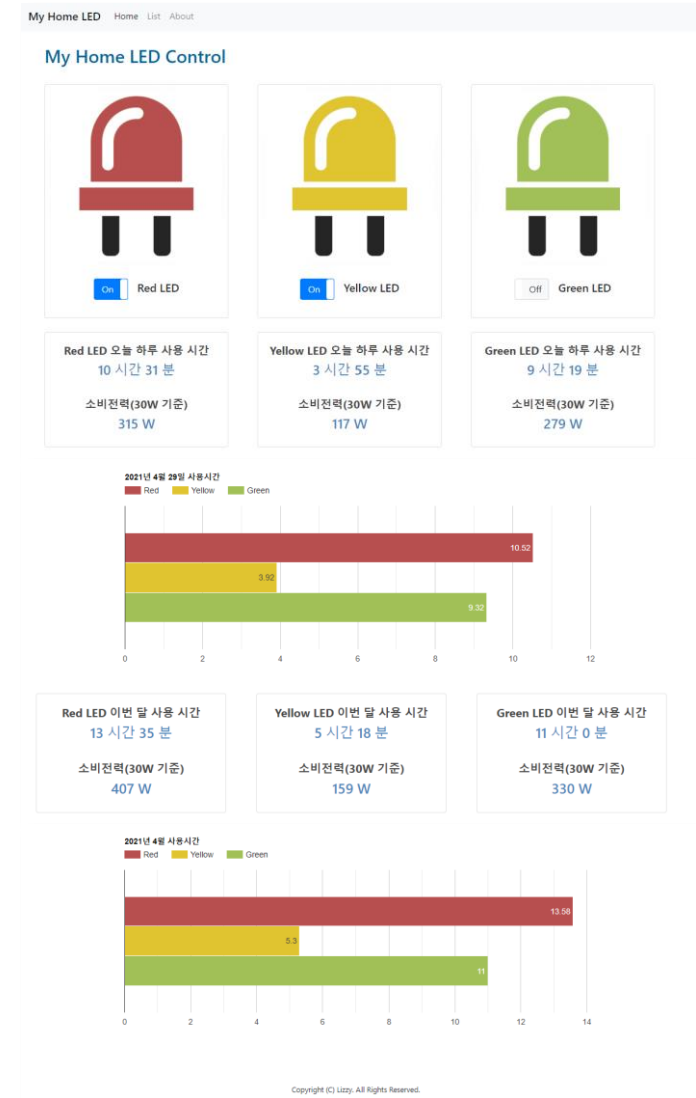
My Home LED

: 집 전등 컨트롤 웹페이지

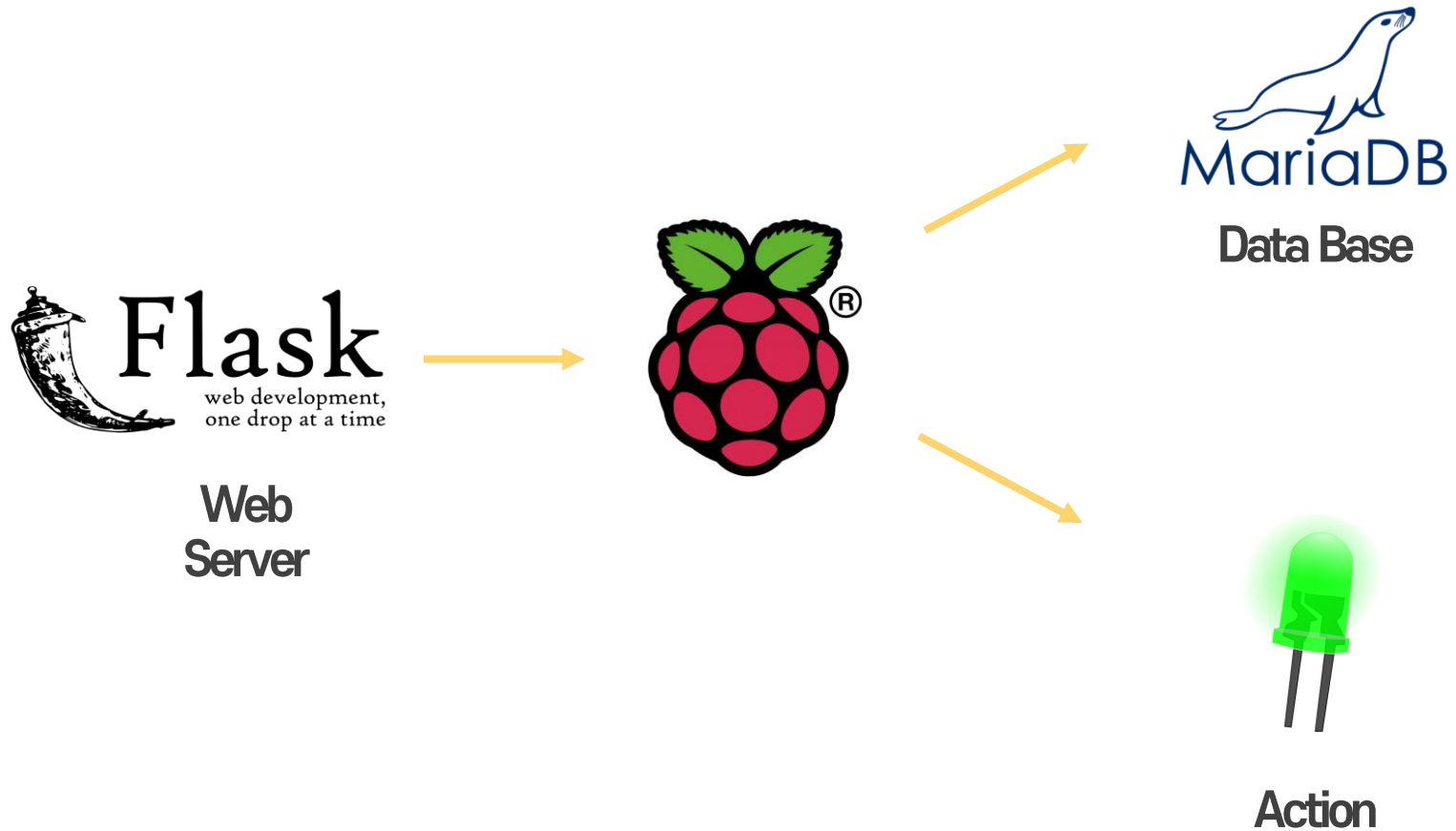
사용 언어/프레임워크) Python / Flask
DB) Maria DB

활용 기기/OS) Raspberry Pi 4.0 / Raspbian

Code Link



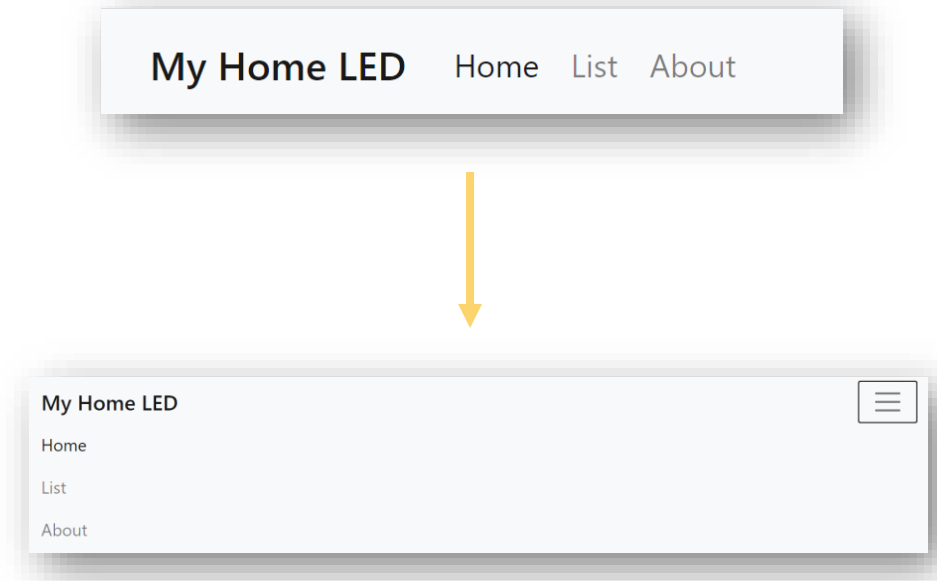
2. Process



3. User Action Diagram & Design

1) Navigation Bar

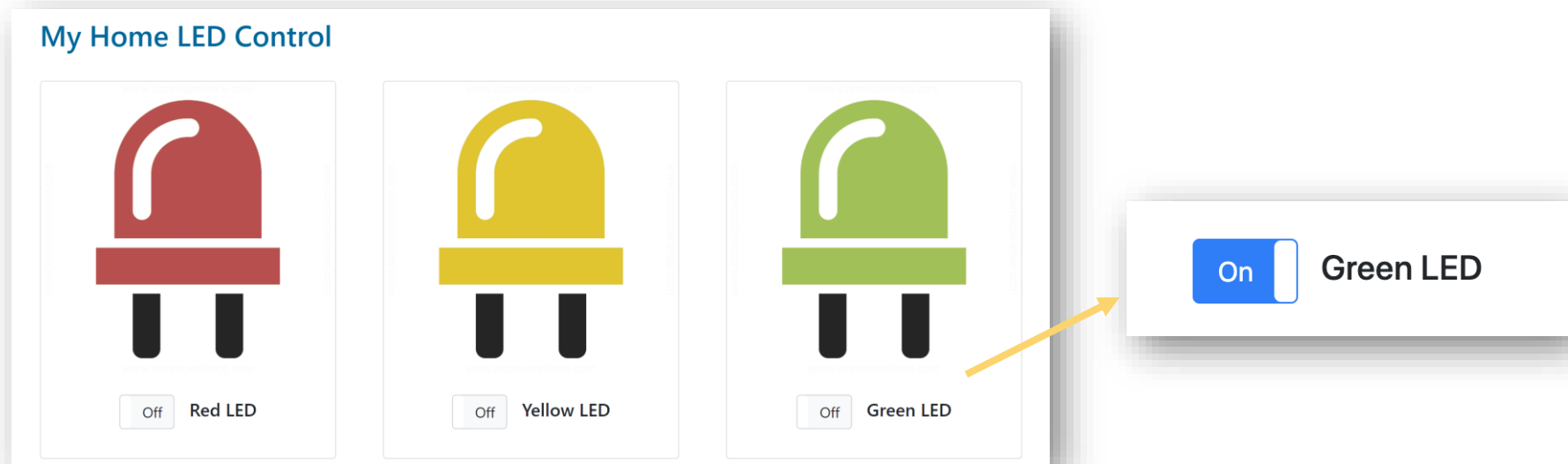
- Home 클릭 → 메인화면
- List 클릭 → LED 사용 내역
- About 클릭 → 연락처
- 화면 사이즈 변화 시
목록 버튼 활성화(반응형)



3. User Action Diagram & Design

2-1) Home : LED Control

- 컬러별 토글 버튼 클릭 -> LED on/off

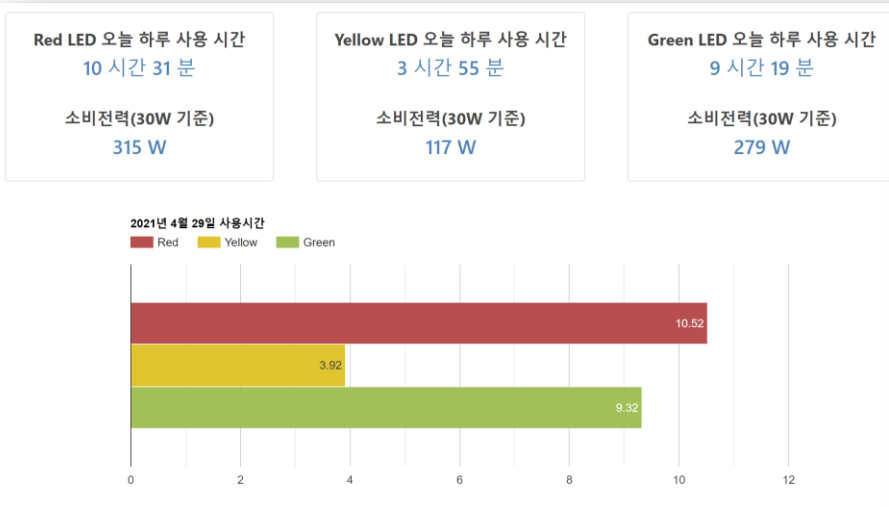


3. User Action Diagram & Design

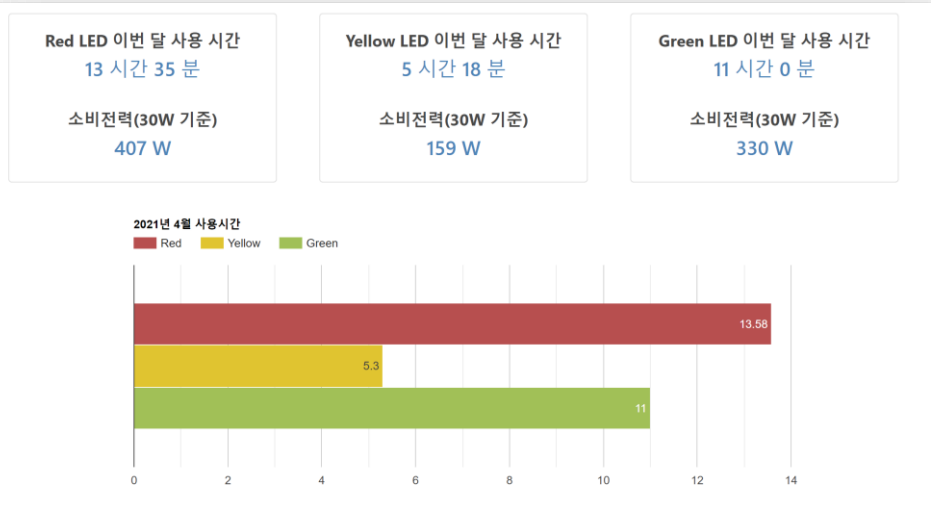
2-2) Home : Time & Graph

- 컬러별 토글 버튼 클릭 -> LED off 시 사용 시간/소비전력 업데이트

[1일 사용 시간]



[한 달 사용 시간]



3. User Action Diagram & Design

3) List

- Select LED 콤보박스 -> LED 클릭 -> 선택 내역 조회
- 페이징 클릭 -> 해당 페이지 조회

List

Select LED ▾

No.	Name	On Time	Off Time
1	Red LED	2020-12-18 16:08:35	2020-12-18 16:18:28
2	Green LED	2020-12-18 16:10:34	2020-12-18 16:24:28
3	Red LED	2020-12-18 16:24:15	2020-12-18 16:37:42
4	Red LED	2020-12-18 23:04:24	2020-12-18 23:04:41
5	Yellow LED	2020-12-18 23:32:29	2020-12-18 23:37:48
6	Red LED	2020-12-18 23:32:49	2020-12-19 00:13:23
7	Green LED	2020-12-18 23:38:02	2020-12-18 23:40:16
8	Green LED	2020-12-20 14:08:20	2020-12-20 14:14:48
9	Yellow LED	2020-12-21 16:07:34	2020-12-21 16:08:37
10	Red LED	2020-12-22 11:25:17	2020-12-22 11:25:42

« 1 2 3 4 5 ... 8 9 »

No.	Name	On Time	Off Time
1	Red LED	2020-12-18 16:08:35	2020-12-18 16:18:28
2	Red LED	2020-12-18 16:24:15	2020-12-18 16:37:42
3	Red LED	2020-12-18 23:04:24	2020-12-18 23:04:41
4	Red LED	2020-12-18 23:32:49	2020-12-19 00:13:23
5	Red LED	2020-12-22 11:25:17	2020-12-22 11:25:42
6	Red LED	2020-12-23 12:19:49	2020-12-23 15:32:03
7	Red LED	2020-12-23 15:32:22	2020-12-23 15:54:01
8	Red LED	2020-12-23 15:54:04	2020-12-23 15:54:36
9	Red LED	2020-12-23 15:54:42	2020-12-23 16:19:26
10	Red LED	2020-12-23 16:20:46	2020-12-23 16:21:16

« 1 2 3 4 »

List

Select LED ▾

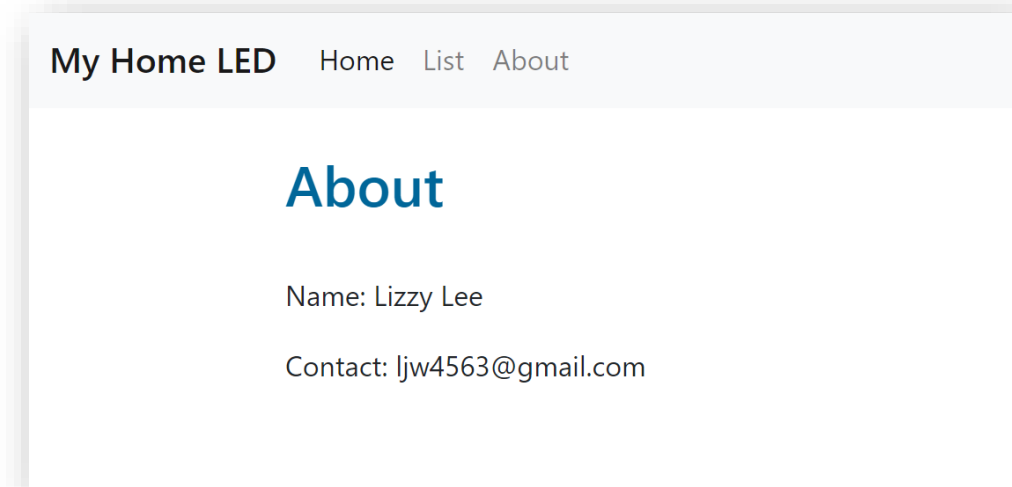
No.	Name	On Time	Off Time
81	Yellow LED	2021-04-29 09:19:32	2021-04-29 13:15:17
82	Red LED	2021-04-29 09:19:44	2021-04-29 10:32:27

« 1 2 ... 5 6 7 8 9 »

3. User Action Diagram & Design

4) About

- 연락처 확인



4. Table Schema

1) LED Table

Field	Type	Null	Key	Default	Extra
Name	varchar(20)	NO		NULL	
onTime	datetime	NO		NULL	
offTime	datetime	YES		NULL	

- Example

Name	onTime	offTime
Red LED	2020-12-18 16:08:35	2020-12-18 16:18:28
Green LED	2020-12-18 16:10:34	2020-12-18 16:24:28
Red LED	2020-12-18 16:24:15	2020-12-18 16:37:42
Red LED	2020-12-18 23:04:24	2020-12-18 23:04:41
Yellow LED	2020-12-18 23:32:29	2020-12-18 23:37:48
Red LED	2020-12-18 23:32:49	2020-12-19 00:13:23
Green LED	2020-12-18 23:38:02	2020-12-18 23:40:16

7 rows in set (0.001 sec)

5. Points of Improvement

1) 온습도 센서 추가

NodeMCU 및 MQTT프로토콜 활용하여 데이터 통신

2) API 활용

현재 날씨 등의 정보 활용하여 웹페이지에 구현

3) 사용 시간 DB 저장

LED on/off 외 하루, 한 달 사용 데이터도 테이블 생성하여 저장

THANK YOU