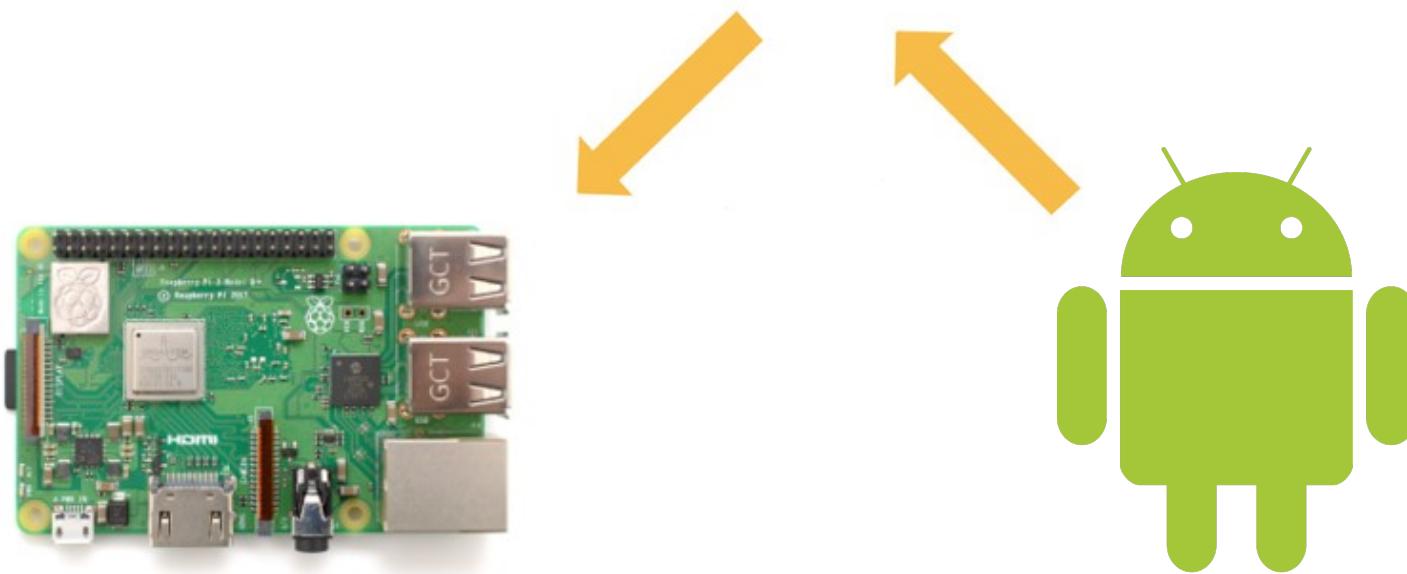


Online Home Automation Control System

Graduation Project 2 Presentation
Group 45 - JC8
Dr Abeer Mahmoud

Implementation





DigitalOcean

```
1 server {
2     listen 80;
3     server_name gp.reem-codes.com;
4
5     location / {
6         include uwsgi_params;
7         uwsgi_pass unix:/home/gin/gp_api/gp.sock;
8     }
9 }
10 }
```

PROJECTS

- Gin !
- + New Project

MANAGE

- Droplets
- Kubernetes
- Volumes
- Databases

Create new record

A AAAA CNAME MX TXT NS SRV CAA

-

Use @ to create the record at the root of the domain or enter a hostname to create it elsewhere. A records are for IPv4 addresses only and tell a request where your domain should direct to.

HOSTNAME

Enter @ or hostname
I

WILL DIRECT TO

Select resource or enter custom IP

TTL (SECONDS)

Enter TTL
3600

Create Record

gin@reem:~/gp_api\$

File Edit View Search Terminal Help

* Environment: production

WARNING: This is a development server. Do not use it in a production deployment.

Use a production WSGI server instead.

* Debug mode: off

* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)

^C(venv) gin@reem:~/gp_api\$ nano wsgi.ini

(venv) gin@reem:~/gp_api\$ nano /etc/systemd/system/gp.service

(venv) gin@reem:~/gp_api\$ pwdir

No command 'pwdir' found, did you mean:

Command 'owdir' from package 'ow-shell' (universe)

pwdtr: command not found

(venv) gin@reem:~/gp_api\$ pwd

/home/gin/gp_api

(venv) gin@reem:~/gp_api\$ nano /etc/systemd/system/reem.service

(venv) gin@reem:~/gp_api\$ nano /etc/systemd/system/gp.service

(venv) gin@reem:~/gp_api\$

(venv) gin@reem:~/gp_api\$ sudo nano /etc/systemd/system/gp.service

(venv) gin@reem:~/gp_api\$ sudo systemctl start gp

(venv) gin@reem:~/gp_api\$ sudo systemctl enable gp

Created symlink from /etc/systemd/system/multi-user.target.wants/gp.service to /etc/systemd/system/gp.service.

(venv) gin@reem:~/gp_api\$ sudo nano /etc/nginx/sites-available/gp

(venv) gin@reem:~/gp_api\$ sudo nginx -t

(venv) gin@reem:~/gp_api\$ sudo nginx -g "daemon off;"

(venv) gin@reem:~/gp_api\$ curl -s http://gp.reem-codes.com | grep "Hello, world!"

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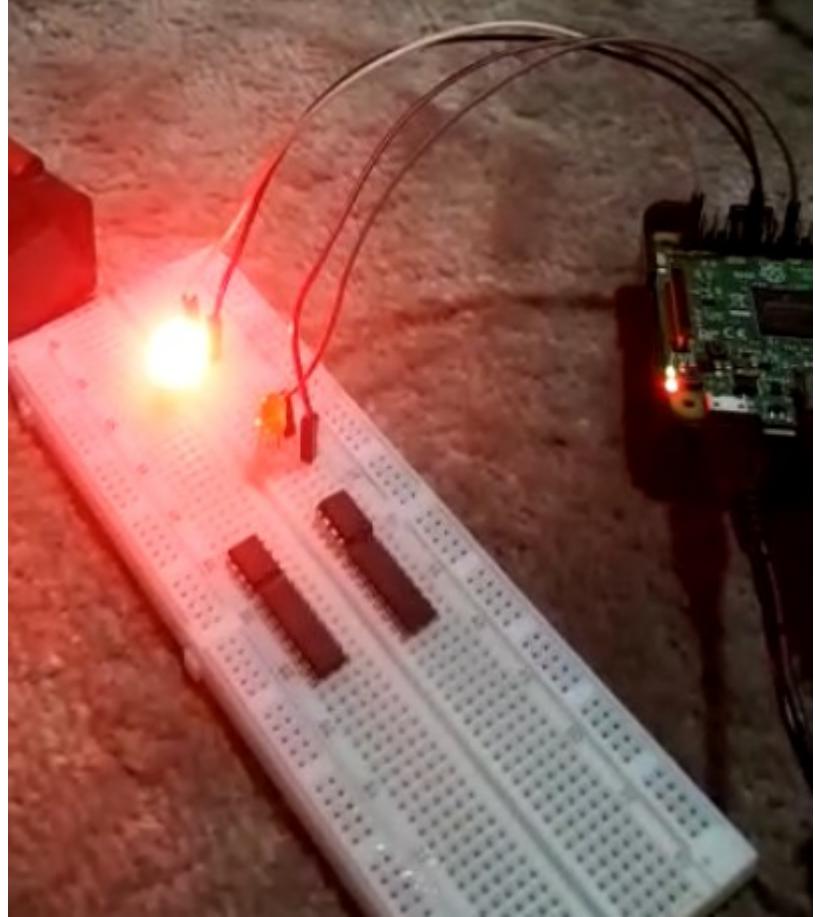
(venv) gin@reem:~/gp_api\$ curl -s http://gp.reem-codes.com | grep "Hello, world!"

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(venv) gin@reem:~/gp_api\$ curl -s http://gp.reem-codes.com | grep "Hello, world!"



```
Total 4 (delta 3), reused 0 (delta 0)
remote: Resolving deltas: 100% (3/3), completed with 3 local objects
To https://github.com/reem-codes/gp_rp.git
  d92cd75..cc6093a master -> master
pi@gin:~/Desktop/gp_rp $ python main.py
6
eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpVXQiOjE1ODI1MzQ0
xpQeoPHQxyYu6YTatg47Z33D1RINDH3E6bL6qI38
{"schedule": {"time": "1:45 PM", "updateAt": "Thu, 27
0:47:18 GMT", "id": 37}}
I'm executing..
(11, True)
main.py:17: RuntimeWarning: This channel is already in use
  GPIO.setup(_gpio, GPIO.OUT)
{"message": "resource added successfully", "object": {"u
12:09:40 GMT", "id": 48, "isDone": True, "command_id": 1
{"message": "resource updated successfully", "object": {"id": 14, "raspberry_id": 6, "icon": "light"}}
```

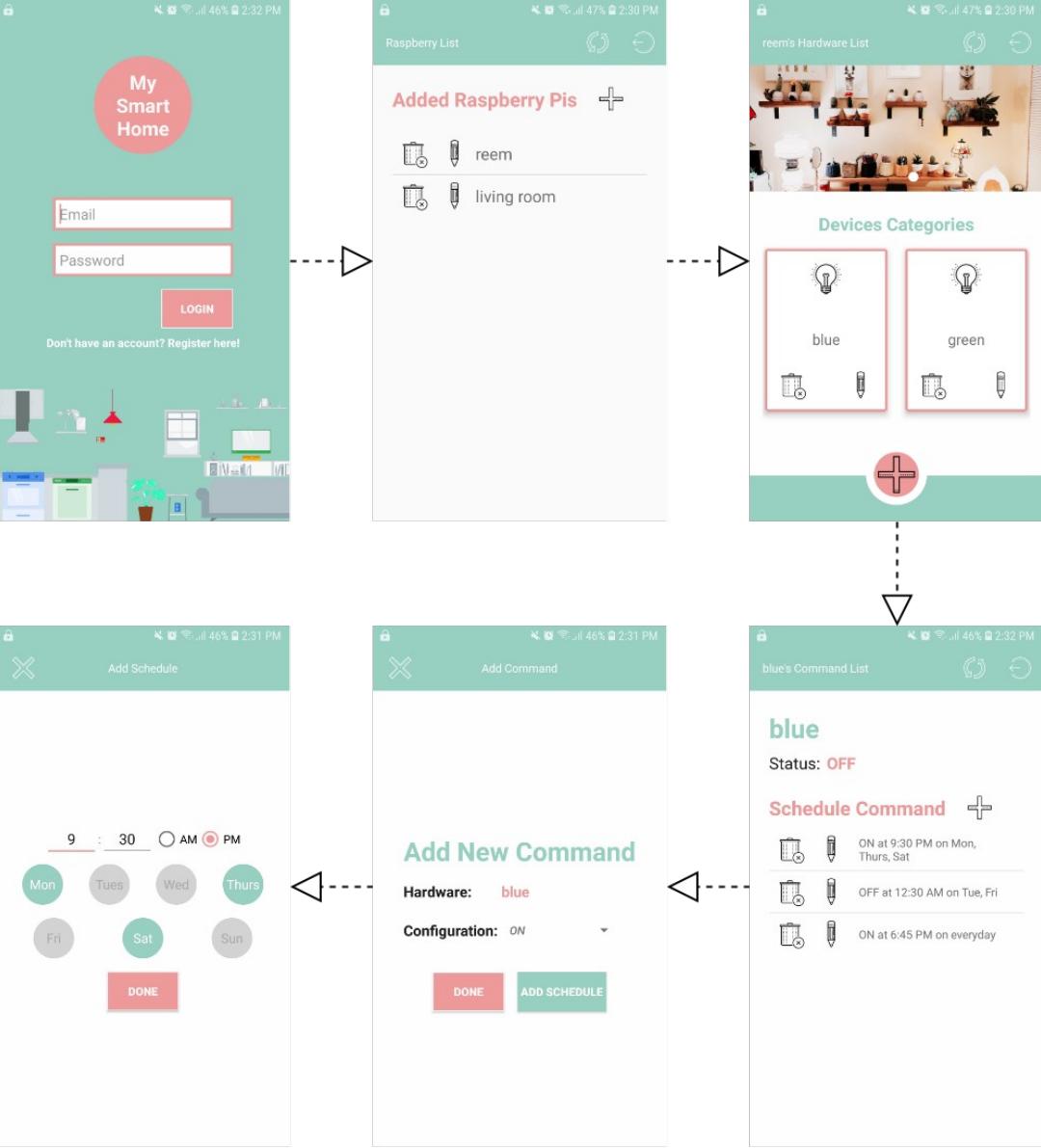




⚙️ My Smart Home • Just now ^

Command executed successfully

command executed successfully
Thu, 27 Feb 2020 15:11:57 GMT



Testing and Validation - Validation

resource updated successfully

resource deleted successfully

Schedule added

You must enter a password

Bad email or password

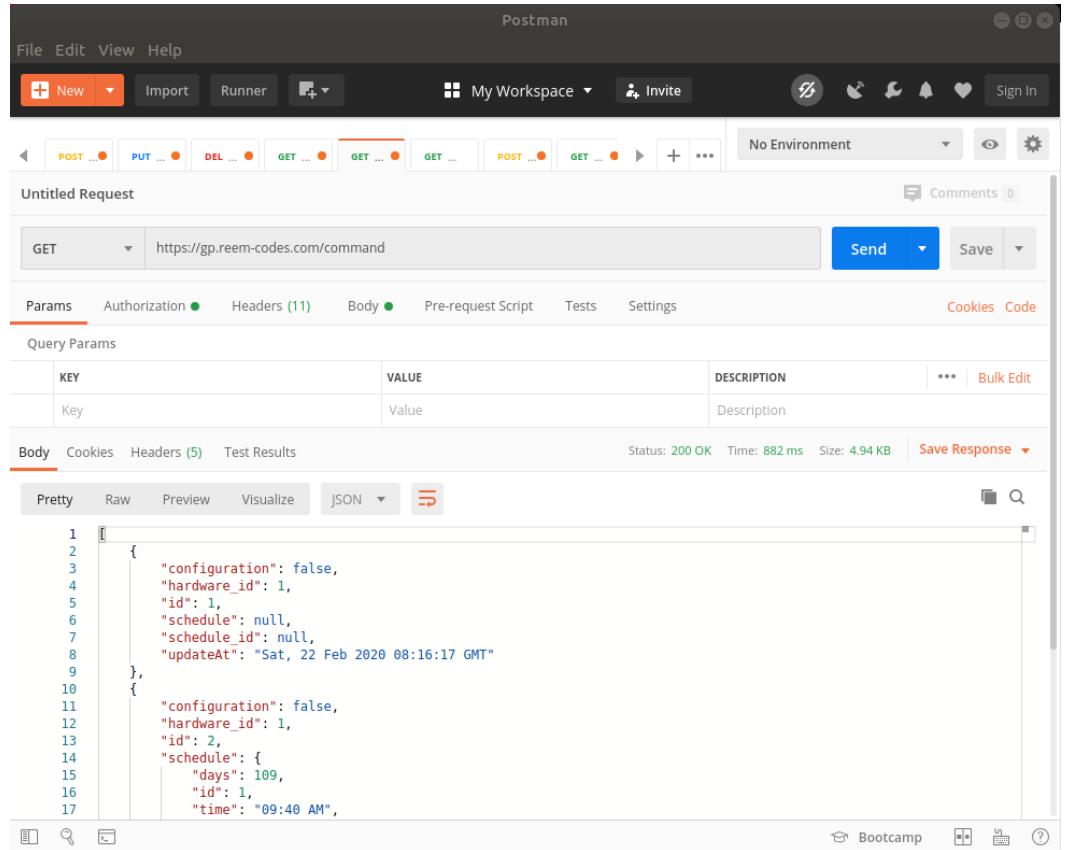
email is incorrect

please check network and try again

user cancelled

Testing and Validation - Testing

No.	Function	Input	Expected Output	Resulting Output
1	Login	email and password	If exists in the database and credentials correct, go to raspberry pi's activity.	Display raspberry pi's activity.
2	Adding a resource	resource attributes	Add a new resource if data is in the right format and required fields are filled.	Return successfully added message
3	Editing a resource	resource id and its attributes	Edit resource if id is correct and data is in the right format and required fields are filled.	Return successfully edited message
4	Deleting a resource	resource id	Delete resource if id is correct.	Return successfully deleted message

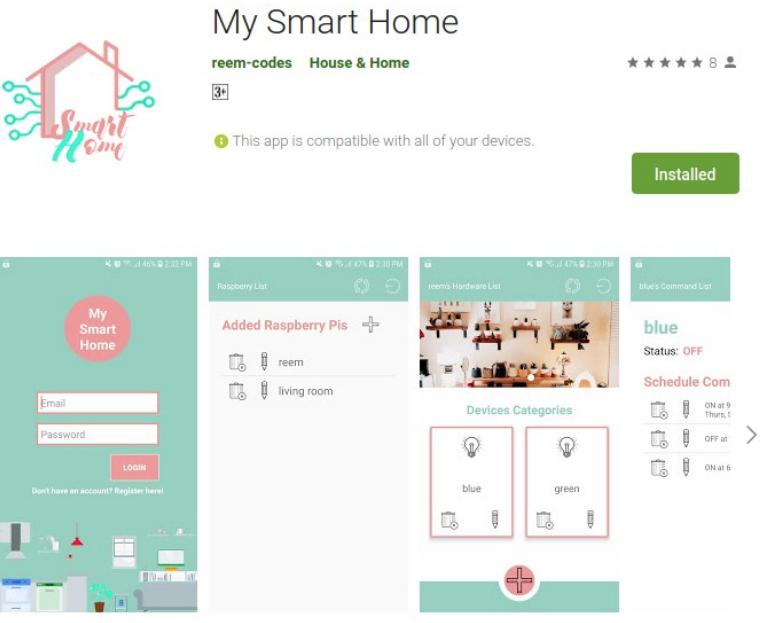


Testing and Validation - Testing

Requirement	Success	Failure	Description
User login or register	✓		validation and authentication are implemented too.
Manage resources	✓		a user can get, delete, create and edit each of the following: raspberry pi, hardware, command and schedule.
Receive Responses	✓		Response service pulls responses from the server each 5 minutes and show them in the notifications.

Requirement	Success	Failure	Description
Get command list	✓		raspberry pi read commands each 30 seconds.
Update local queue	✓		The local queue was replaced by a list for faster implementation
Execute commands saved in queue	✓		Raspberry pi execute commands accordingly
Submit a command response to server	✓		Once done, a response is POST to the server

Deployment - Android



This is my graduation project. It is a system that aims to control any hardware online as long as it is connected to a registered raspberry pi.

ABSTRACT:

With the recent very rapid progress in technology and automation, and towards easier daily life tasks, there has become a need for remote control of almost all possible aspects of living. Some examples

[READ MORE](#)

A screenshot of the Google Play Console. At the top, it says 'Google Play Console' and 'All applications'. On the left, there are navigation links: 'All applications', 'Game services', 'Download reports', 'Alerts', and 'Settings'. On the right, there is a search bar with 'Search for apps' and icons for notifications, help, and account. A message box says: 'Due to adjusted work schedules at this time, we are currently experiencing longer than usual review times. Please expect review times of 7 days or longer.' Below this, there is a table titled 'All applications' with columns: App name, Active installs, Google Play rating, Last update, and Status. One row is shown for 'My Smart Home' with the details: Active installs 7, Google Play rating 5.00, Last update Mar 24, 2020, and Status Published. At the bottom right, it says 'Page 1 of 1'.

https://play.google.com/store/apps/details?id=com.reem_codes.gp_android

My Smart Home
This is my graduation project it is a smart home controller using raspberry pi.

Methodology

- Android Application
- Web Application
- Raspberry Pi

The main application works on the user interface, its goal is to receive requests and send them to the Raspberry Pi. The user can control the lights and the temperature.

The RPI will work according to the commands received from the android application or the web application. It will also receive data from the sensors and send it back to the user.

No need to connect the user directly to the hardware. User controls the user by his phone or computer. The user can control the lights and the temperature. The user can also receive data from the sensors.

Gallery

- Android Application
- Web Application
- Raspberry Pi

Add New Hardware

Schedule Command

Add New Command

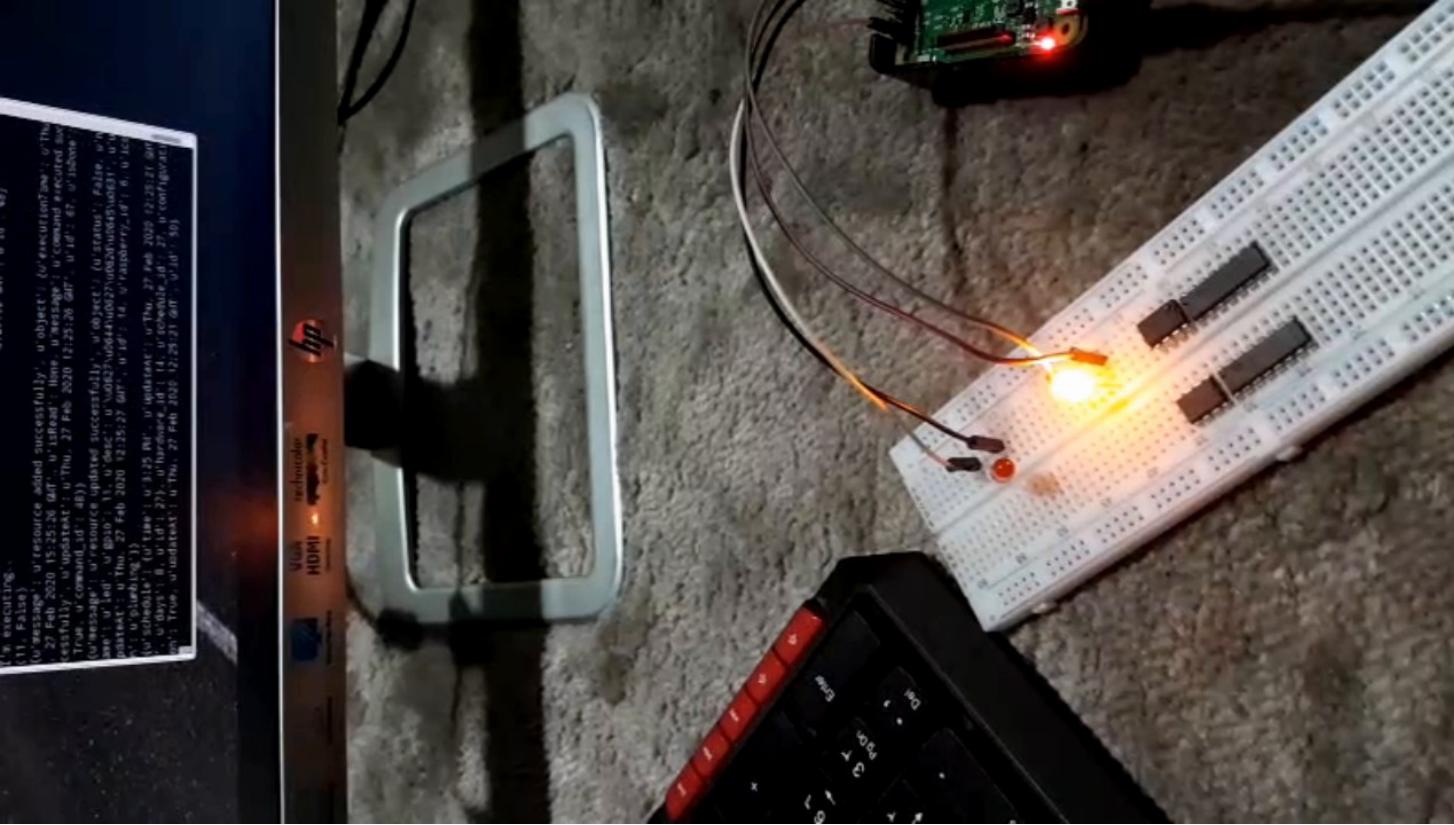
Deliverable

- Scientific Paper
- Slide Show
- Report
- Android Application
- Raspberry Pi Console Application
- Web Application

Deployment – Web Application

<https://gp.reem-codes.com/>

Conclusion - Evaluation



Conclusion – Problems Faced

- Time management: making 3 applications
- Configuring the server
- Publishing application to google play

Conclusion – Future Work

- Add configuration table
- Test on multiple devices
- Make an iOS version

THANK YOU!

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