

# Help manual for Web interface

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## Introduction

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It is a simple flow-navigation based web application, with several elements. The front-end has been developed using PHP, Javascript, CSS and HTML5. Back-end is on MySQL server based database server. Server is up and running, you can visit the site at 192.168.7.27 inside the IIT Hyderabad network.

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## Welcome page

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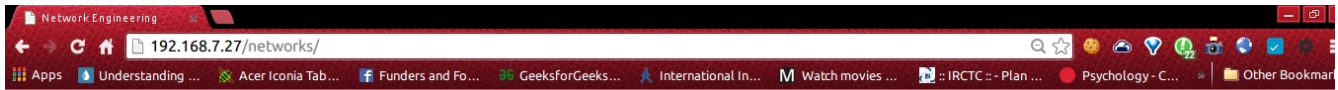
This is the welcome page of Raspberry Pi Management System, here you can see the general map just divided my Access Point's essid, and there is a second link which is to the admin panel of this management system.



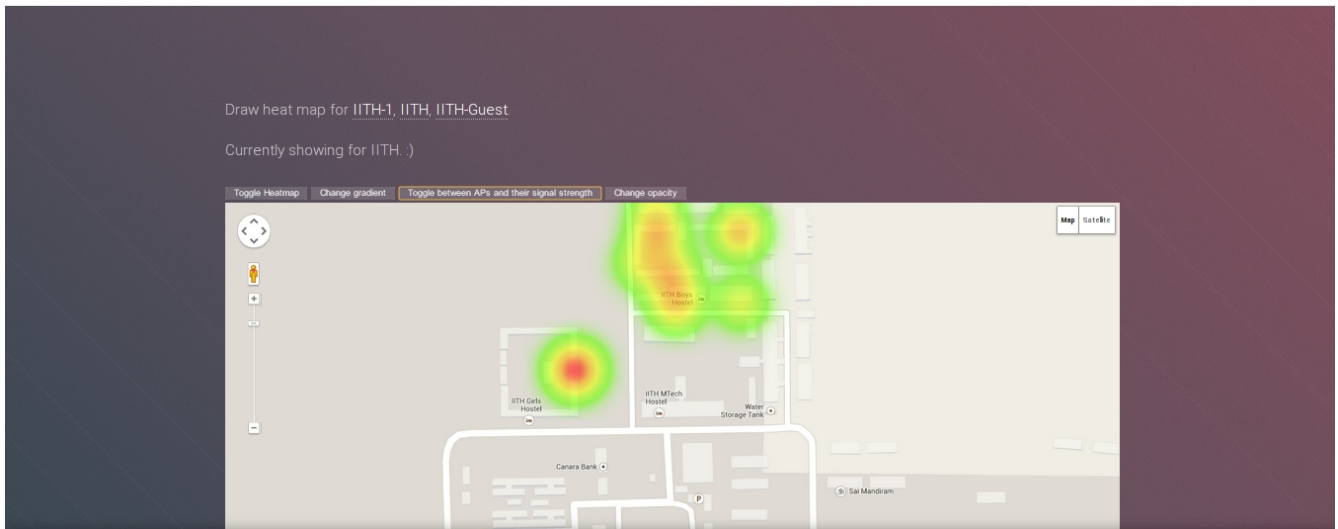
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## General Heat map for everyone

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See the Heat Map below



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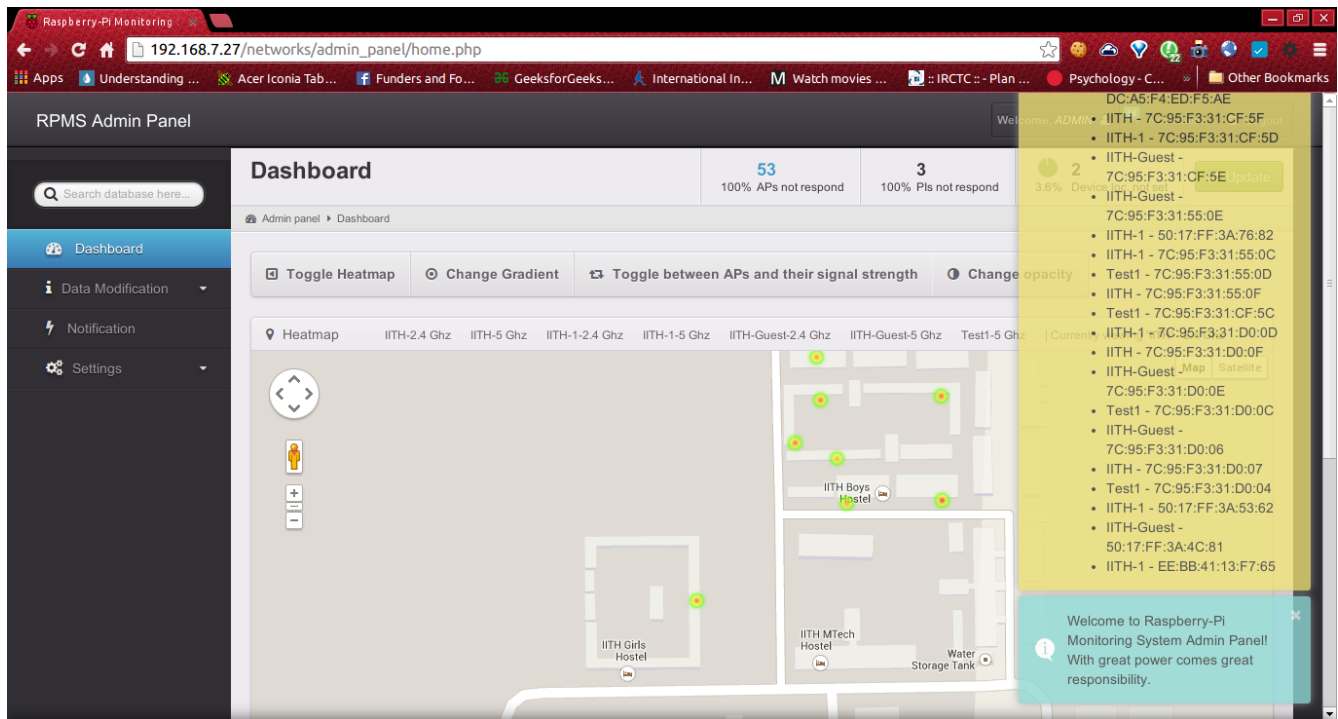
## Admin Panel

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Login – For the security of the admin panel a login page is designed. Default login username password is set to be “admin” - “admin”,

A screenshot of a web application showing the "RPMS Admin Panel" login page. The page has a dark background. In the center, there is a white login form with the title "RPMS Admin Panel" and a "Login" link. The form contains two input fields: "Email / username" and "Password", followed by a "Login" button. At the bottom of the page, there is a copyright notice: "©2014 IIT Hyderabad. All rights reserved." The browser's address bar shows the URL "192.168.7.27/networks/admin\_panel/index.php".

## Admin Panel – Home page



This is the home page for the admin. This has a variety of features like,

- **on the header (common in all pages)**
  - **Username** – Just greeting the user
  - **Notification** – shows the the total number of errors you are facing on it.
  - **Logout** – A button to end the user session, so that others cannot interfere through your account.
- **Menu bar (in left)**

With options to for

  - **Search**
  - **Data Modification**
    - **Add Device**
    - **Add location**
    - **Change Location**
    - **Delete Device**
  - **Notification**
  - **Settings**
    - **change password**
    - **change username**
    - **add user**
    - **delete user**

- **Right notification boxes**

These are the boxes with all the latest happenings of the network including the essid - mac address of the access point and raspberry pis that have not responded in last 30 minutes. It will also notify the essids and mac addresses of the access points that locations are not set.

- **Middle / center Part**

The common part in all the pages is the bar in the middle section which also acts as a notification thing, but in a pie graph format. It shows,

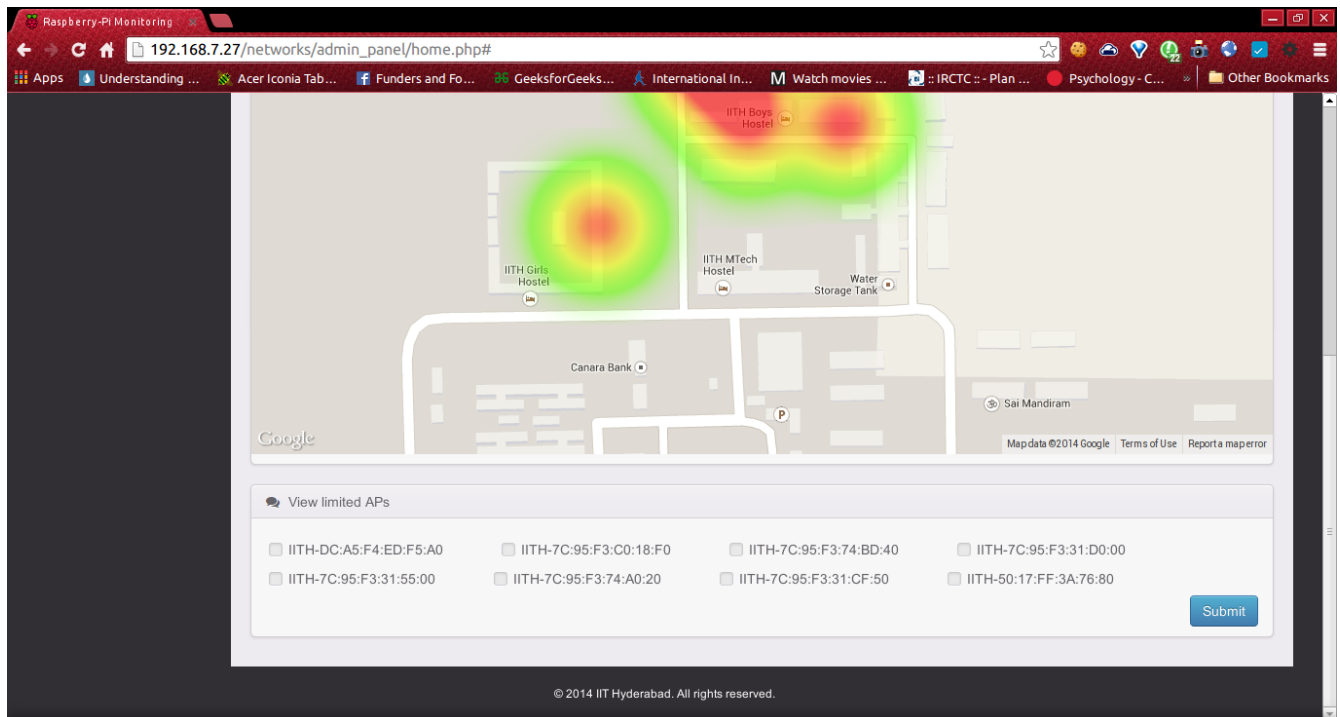
- Number / Percentage of Aps not responded in last 30 mins
- Number / Percentage of Pis not responded in last 30 mins
- Number / Percentage of devices whose locations are not set.

This part of the page have two parts, first is the part in which heat map is plotted on the google maps. With the buttons,

- **Toggle Heatmap** – you can toggle between the plotting, in other words between plot and no plot maps
- **Change Gradient** - can be used to change the color of the gradient that we are using to plot the heatmap
- **Toggle between APs and their signal strength** - the initial plot is just to show the points where the Access Points are existing. With this button, you can toggle to see the heat map after all the calculations.
- **Change opacity** – this changes the opacity of the plot that we are making on the google maps.

On the header of the google maps, user can see the different essids and the frequencies that we are getting at the raspberry pis. You can click to see heat map plot for any of that. Default selection is IITH at 2.4Ghz.

In the second part user, is given the list of the Access Points for the selected essid and frequency, and user can select any number of them to see the output only because of them without the influence of any other Access Point.



## Search

Search can be used to find any information that is stored in the database. Like all the access points with 5Ghz frequency, you just need to write in that and press enter key.

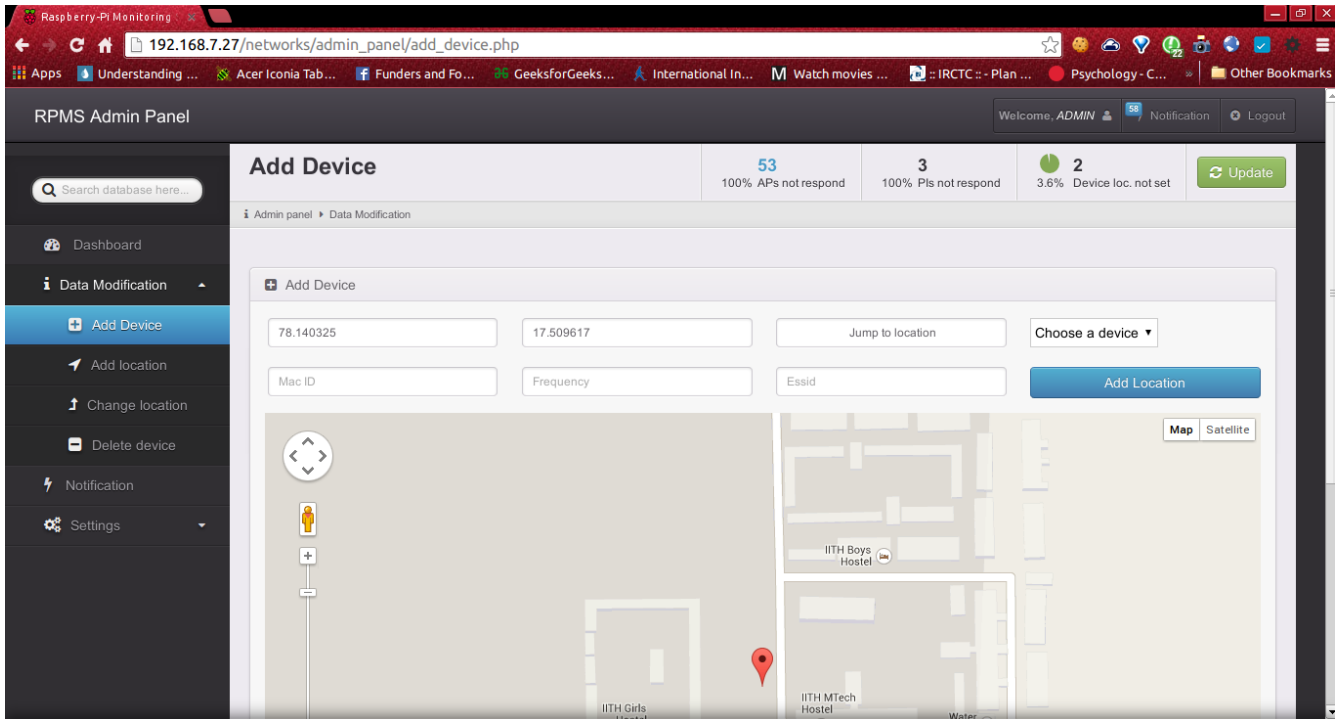
The screenshot shows the "RPMS Admin Panel" with the "Search" tab selected. The search bar contains "Search Key - 5ghz". The results are displayed in a table under the heading "Access Points result".

Device Id	Mac	Essid	Frequency	Channel	Strength	Latitude	Longitude
36	7C:95:F3:31:CF:5F	IITH	5.18	36	96	17.510251	78.140793
43	7C:95:F3:31:55:0F	IITH	5.18	36	95	17.510809	78.141311
124	7C:95:F3:31:D0:0F	IITH	5.18	36	84	17.509737	78.139964
21	7C:95:F3:74:A0:27	IITH	5.32	64	92	17.510486	78.140737
34	DC:A5:F4:ED:F5:AF	IITH	5.18	36	91	17.510793	78.140646
128	7C:95:F3:31:D0:07	IITH	5.18	36	94	17.509737	78.139964
26	7C:95:F3:74:A0:2F	IITH	5.32	64	92	17.510486	78.140737
27	7C:95:F3:74:A0:2C	IITH-1	5.32	64	92	17.510486	78.140737
37	7C:95:F3:31:CF:5D	IITH-1	5.18	36	96	17.510251	78.140793
41	7C:95:F3:31:55:0C	IITH-1	5.18	36	96	17.510809	78.141311
29	DC:A5:F4:ED:F5:AC	IITH-1	5.18	36	90	17.510793	78.140646
123	7C:95:F3:31:D0:0D	IITH-1	5.18	36	85	17.509737	78.139964
39	7C:95:F3:31:55:0E	IITH-Guest	5.18	36	95	17.510809	78.141311

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## Data Modification → Add Device

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Add Device is used for adding a particular device in the database, mostly used for adding the Raspberry Pis. User need to enter or select the location where is device is set and the type of device one is adding, along with the essid , mac and frequency of the device if any.

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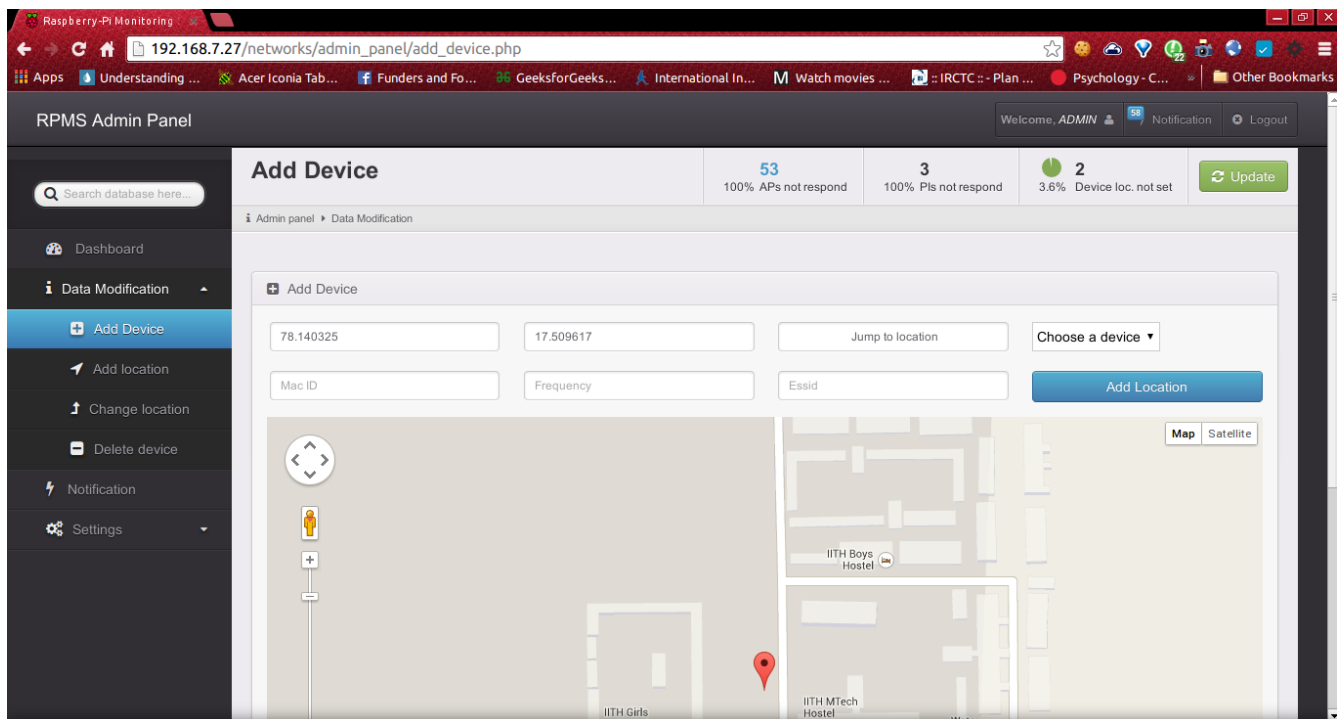
## Data Modification → Add Location

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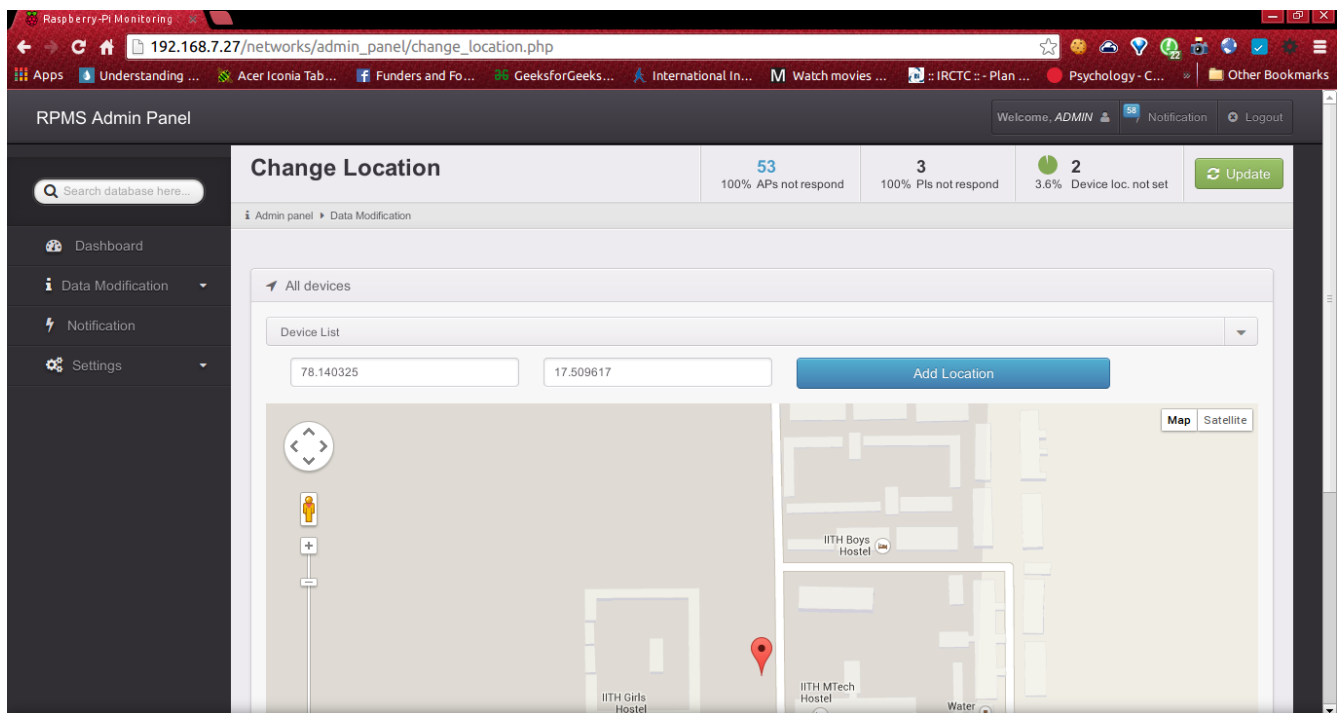
This field opens only when some device's (AP) location is not set in the database that is discovered by the Raspberry Pi. In this one only needs to select the Essid – Mac Address of that device and point to the correct location or enter the location of that device.

As we have see, all the mac address of same Access Point ( for different things like IITH , IITH-1, etc.. or for different frequencies like 2.4Ghz. Or 5 Ghz are different) so this will set the location of all those devices.





## Data Modification → Change Location



This section can be used to change the location of the device if it is moved/replaced with some other device. User just needs to select the device and the new location.



## Data Modification → Delete Device

The screenshot displays the 'Delete Device' interface within the RPMS Admin Panel. The page title is 'Delete Device'. At the top right, there are status indicators: '53 100% APs not respond', '3 100% Pls not respond', and '2 3.6% Device loc. not set', along with an 'Update' button. Below the title, there is a 'Delete Devices' section with a 'Password' input field. The main content is a 'List of Devices' table with 11 rows. Each row includes a checkbox for selection, followed by columns for Device Id, Mac, ESSID, Frequency, Latitude, Longitude, and Device Name. The devices are all 'Access Point' type.

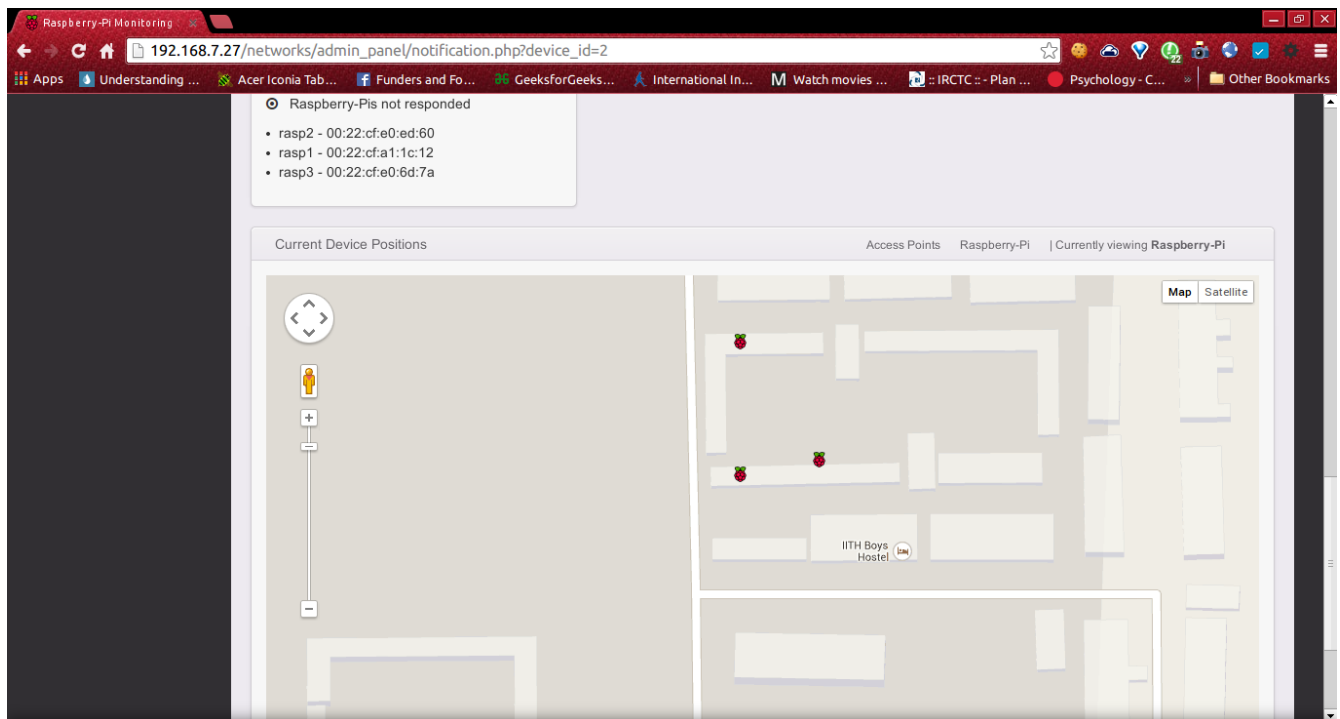
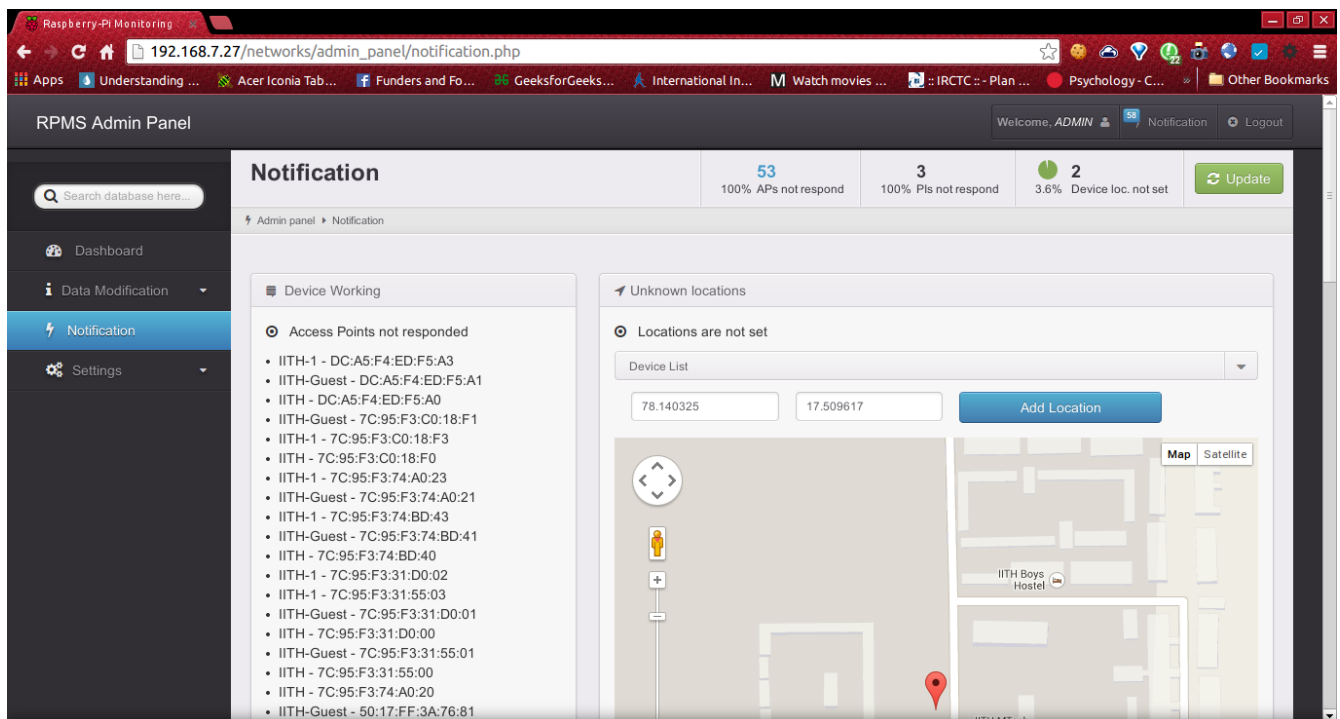
	Device Id	Mac	Essid	Frequency	Latitude	Longitude	Device
<input type="checkbox"/>	1	DC:A5:F4:ED:F5:A3	IITH-1	2.437	17.510793	78.140646	Access Point
<input type="checkbox"/>	2	DC:A5:F4:ED:F5:A1	IITH-Guest	2.437	17.510793	78.140646	Access Point
<input type="checkbox"/>	3	DC:A5:F4:ED:F5:A0	IITH	2.437	17.510793	78.140646	Access Point
<input type="checkbox"/>	4	7C:95:F3:C0:18:F1	IITH-Guest	2.462	17.510566	78.140506	Access Point
<input type="checkbox"/>	5	7C:95:F3:C0:18:F3	IITH-1	2.462	17.510566	78.140506	Access Point
<input type="checkbox"/>	6	7C:95:F3:C0:18:F0	IITH	2.462	17.510566	78.140506	Access Point
<input type="checkbox"/>	7	7C:95:F3:74:A0:23	IITH-1	2.412	17.510486	78.140737	Access Point
<input type="checkbox"/>	8	7C:95:F3:74:A0:21	IITH-Guest	2.412	17.510486	78.140737	Access Point
<input type="checkbox"/>	9	7C:95:F3:74:BD:43	IITH-1	2.462	17.511018	78.140625	Access Point
<input type="checkbox"/>	10	7C:95:F3:74:BD:41	IITH-Guest	2.462	17.511018	78.140625	Access Point
<input type="checkbox"/>	11	7C:95:F3:74:BD:40	IITH	2.462	17.511018	78.140625	Access Point

In this section user can select the device/s from the list of all the devices which he intend to remove. Please note user need to re-enter the password for the successful deletion to happen.

## Notification

This section is to view all the problems that is happening in the system, that it possible try to correct them. In the first section, if there is any raspberry pi or access point not responding from last 30 mins then that will be shown. Also with this, the list of access points whose locations are not set, which can be directly added by the map given just at the bottom of that.

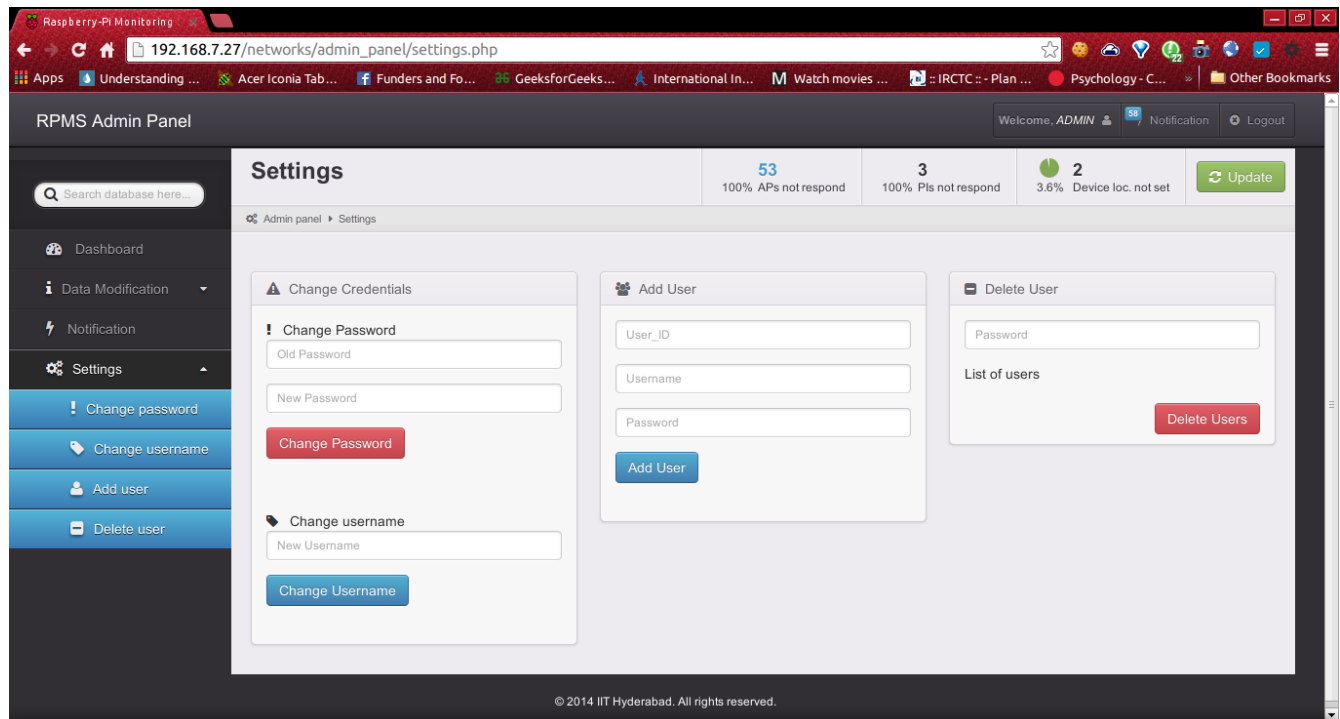
In the second part, user can view the locations of the Access Points or the Raspberry Pis on the google maps.



## Settings

This section is mostly to take all the security and user related decisions. In this you can change your password or username, or add another user with user\_id that is not existing already. You can also delete the users that you have added in the database.

But please see that, admin can see and delete any of the user, need not to be added by admin.



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**Thank You !**

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For any further assistance, please e-mail us at,  
[cs11b009@iith.ac.in](mailto:cs11b009@iith.ac.in)  
or [cs11b038@iith.ac.in](mailto:cs11b038@iith.ac.in)

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