



## Progress Report

# SimpleHome

## A Home Automation System

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## Introduction

The goal of the SimpleHome project is to take regular household fixtures and intelligently automate the functions which they perform. Simple, Efficient, Inexpensive and Secure: these are the four core values which give our product a distinct edge over competing home automation solutions. The @HOME team believes that our SimpleHome hub will meet the needs of both the rapidly expanding smart-home market and the growing need for in-home assistive devices for the aging populace.

This report reflects on the progress made by the @HOME team in the development of the SimpleHome product, especially focusing on the goals met, modifications to the scope of the project and further enhancements to be implemented in the near-future.

## Schedule

In regards to the project deadlines outlined in the proposal document, the SimpleHome project deployment is running behind schedule for certain aspects, due to the issues encountered during the development cycle. As shown in Table 1 below, most of our goals have been met in a timely fashion, barring the on-going implementation goals.

*Table 1: Estimates and Current Standing based on Initially Proposed Project Schedule*

Phase	Task	Planned Start Date	Planned End Date	Percent Complete
Design, Development and Implementation of Individual Components	<i>Server</i>	<i>9/Aug/15</i>	<i>30/Sep/15</i>	<i>75%</i>
	Database Storage	9/Aug/15	30/Sep/15	100%
	Interface	8/Aug/15	30/Sep/15	100%
	Encryption	8/Aug/15	30/Aug/15	100%
	Peripherals	11/Aug/15	30/Sep/15	100%
Integration of Overall System	<i>Integrate Modules</i>	<i>1/Oct/15</i>	<i>30/Oct/15</i>	<i>45%</i>
	<i>Test System</i>	<i>31/Oct/15</i>	<i>13/Nov/15</i>	<i>50%</i>
Additional Development	Additional Development	14/Nov/15	12/Dec/15	0%
	Create Manuals	1/Nov/15	1/Dec/15	0%



Prior to starting our project, we had allotted the time between November 14, 2015 and December 12, 2015 as time for additional development of our project. This included implementation of additional peripherals such as an alarm module, high-current outlet and a smart peripheral using Intel Edison. Due to our slow progress with the integration of the overall system, the testing phase of the overall system is currently in an on-going state and the additional development phase has been eliminated.

## Progress & Remediation

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Based on the initial goals outlined in the project proposal document, the @HOME team should have completed the design, development and implementation phases of the SimpleHome product at this point. Due to several challenges with the server, development of our product is behind schedule and we have had to reduce subsequent functionalities from our initial design.

In order to meet the higher-priority goals for our proof-of-concept model, the @HOME team will not be integrating Machine-Learning aspects to the product directly. However, a separate demonstration of its implications on SimpleHome and how it could impact the production model will be presented on December 14, 2015. The lack of time to collect data which is needed to properly train the system for a specific configuration is the cause for this modification in the implementation phase.

On the peripheral devices front, we have opted out of integrating a pre-existing thermostat into our test plan. Since we are unable to configure a pre-existing thermostat to suit our design needs, this change in peripheral implementation was necessary. An additional minor change in the goals will be that the @HOME team will be unable to write the user manuals by the demonstration date.

The additional peripheral development phase has been eliminated so as to implement, test and debug our proof-of-concept system. Over the next two weeks, the @HOME team has allotted multiple days to collaborate and complete the SimpleHome project and prepare for the presentation.



## Financial

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Having obtained funding from IEEE and ESSEF for a total of \$1370, the SimpleHome project is currently in a financially well-compensated state. Our current expenses total \$942, leaving \$428 for the @HOME team to utilize, in the event of any last minute issues or changes. All the necessary expenditures and component purchasing has been completed and accounted for, and we do not have any imminent expenses lined up for now.

## Conclusion

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As outlined in the progress and remediation section of this document, we expect the SimpleHome project to be completed on-time, with the stated modifications to the system in place. We intend to be within cost constraints and our teamwork will be in the adjourning stages of team development. Our product will not only improve the convenience and quality of life for the elderly and physically-disabled, but also for the general public. SimpleHome is an easy-to-use, efficient, inexpensive and secure home automation system that should be in everyone's homes.