

Two Cube

IS480 Acceptance



Our Team



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*Project Manager & Scrum
Master*



Vera Low
*Robotics Hardware Lead
& Developer Deputy*



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*Business Analyst Lead &
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*Developer Lead &
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*Front-End &
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*Developer Lead &
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Stakeholders



Tan Hwee Xian
Supervisor
Senior Research Scientist



Ben Li
Sponsor
Founder of RoboStudio



Trends



- Companies starting to move towards automation & robotics

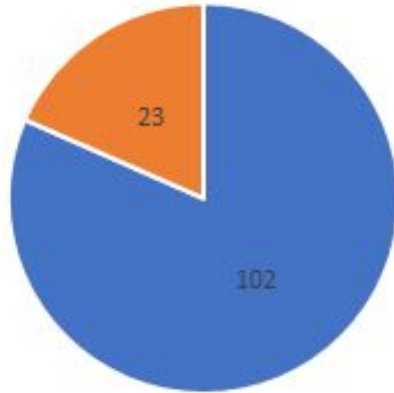


- People want to learn coding but face challenges



Statistics

Are you aware that companies are moving towards automation via robotics?



■ Yes ■ No ■

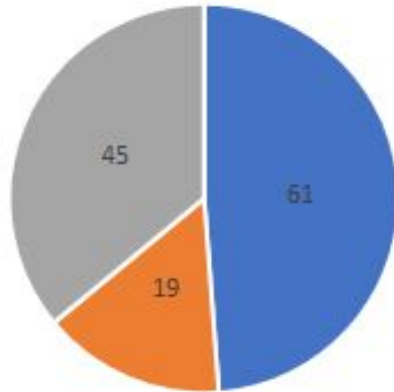
Sample Size : 125

Yes : 81.6%

No : 18.4%

Statistics

If given the chance, would you pick up robotics programming?



■ Yes ■ No ■ Maybe

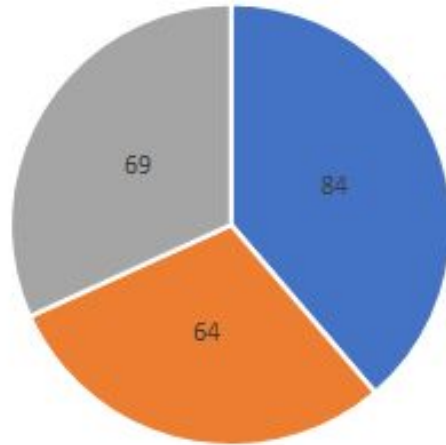
Sample Size : 125

Interested : 84.8%

Not Interested : 15.2%

Statistics

What is your preferred method of learning?



■ Learning via games ■ Classroom courses ■ Online tutorials

Sample Size : 125

Learning via games : 67.2%

Online tutorials : 55.2%

Classroom courses : 51.2%

Statistics

What programming languages would you consider picking up?



■ Python ■ Not Python

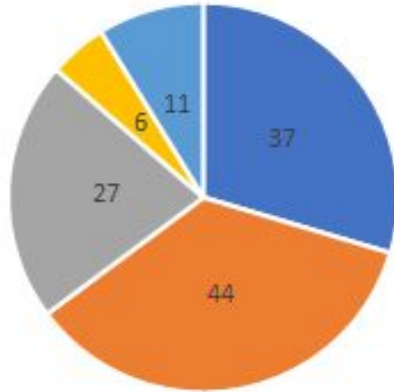
Sample Size : 125

Python : 75%

Non-Python : 25%

Statistics

What is the amount you would be willing to pay to pick up robotics programming?



■ Below \$50 ■ \$50 - \$100 ■ \$100 - \$150 ■ \$150 - \$200 ■ \$200 & above

Sample Size : 125

Below \$200 : 91.2%

\$200 & above : 8.8%

Problem



- Intimidation and hassle of Robotics programming learning
 - Hardware and Software Costs
 - Do not know how to start



The background is a dark, semi-transparent collage of various hand-drawn robot illustrations. The robots are drawn in a simple, cute style with thick outlines. Some are blue, some are purple, and some are grey. They have different shapes, some with multiple eyes, some with hearts on their chests, and some with multiple limbs. In the bottom right corner, there are three markers: a yellow one, a purple one, and a blue one. The word "DEMO" is written in large, white, sans-serif capital letters in the center of the image.

DEMO

Solution

RoboStudio



- An online web platform that aims to promote Python learning with Robotics



- A physical robot is not needed on the user's end



- Remove the hassle of setting up the robot and connectivity issues



RoboStudio



- RoboStudio aims to make learning a fun and interactive experience for the users through the gamification approach



- Users control the movement of the robots to accomplish that goal



- Integrates a code editor for the users which guides them on what code to enter



- Users monitors the movements of robots via a live camera



Competitive Advantage



- Learning via gamification and robotics as a learning tool



- Shared economy



- Interactive and Convenient

Scope



CORE FUNCTIONALITIES

Account Module

- Login/Logout
- User Registration
- Profile Management

Learner Module

- Book Game

Administrator Module

- Add/Delete Game

Robotics Module

- Remote Control
- Live Streaming

SECONDARY FUNCTIONALITIES

Game Provider Module

- Add/Delete Game
- Rate Game

Analytics Module

- Learner Proficiency

Robotics Module

- Robot Management System

Learner Module

- Rate Game
- Search Game
- Book Additional Session

Shopping Module

- Purchase of Robot Kits

GOOD-TO-HAVE

Finance Module

- Wallet
- Cash out
- Player Donation

Comms Module

- Chat Bot

Administrator Module

- Recording of Live Display
- Robot Stock/Status Check

Learner Module

- Multiplayer Game Room

Core Functionalities



Account Module



- Login/Logout
- User Registration
- Profile Management

Administrative Module



- Add/Delete Game



Learner Module

- Book Game



Robotics Module

- Remote Control
- Live Streaming



Secondary Functionalities



Game Provider Module



- Add/Delete Game
- Rate Game

Learner Module



- Rate Game
- Search Game
- Book Additional Session

Analytics Module



- Learner Proficiency

Shopping Module

- Purchase of Robot Kits

Robotics Module



- Robot Management System

Completed Functionalities



Account Module



- Login/Logout
- User Registration
- Profile Management



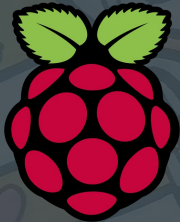
Robotics Module

- Remote Control

Technologies



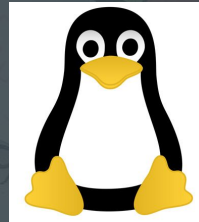
Python



Raspberry Pi



Wordpress



Linux



Windows



Putty



peepso

User Acceptance Test (UAT) 1

Venue: SMU SIS GSR 2-2

Date: 03 November 2017

Time: 12:30PM

Duration: About 15 minutes per user

Number of Participants: 4

Age Group: 18 to 24

Roles Involved: Learner

Scope: Account Module

User Acceptance Test (UAT) 1

Objectives:

To look at the feedback with regards to our User Interface

Test Goals

Users should be able to create an account and receive an activation email upon successful creation.

Goals Reached. All participants were able to complete the task.

Users should be able to login successfully with their username and passwords.

Goals Reached. Some participants took some time in finding the button to log in on the site.

Users should be able to update their personal account information.

Goals Reached. All participants were able to complete the task.

User Acceptance Test (UAT) 1

Key Findings:

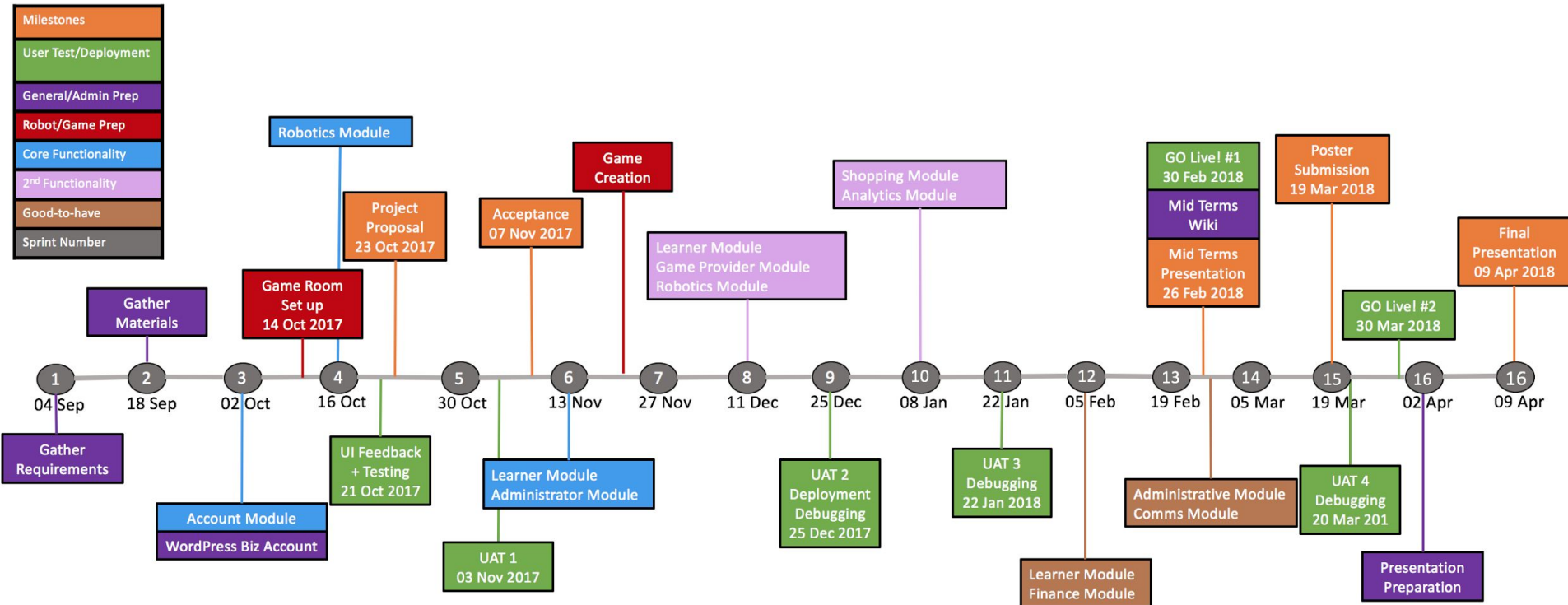
No.	User Comments	Changes
1	Difficulty in finding the login button.	Added the login button at the top navigation bar beside the registration button.
2	Update profile should have more coding related information	Added in more questions with regards to technical proficiency.

Project Management



- An agile approach to deliver integrated, tested and business-valuable features in each sprint fast
- Sprints with a fixed duration of 2-weeks

Project Management



Risk Management

Risk Type	Risk Event	Mitigation
Technical Risk	Team is not proficient in the technology used (Raspberry Pi, Python)	Team to research on technology and experience it to gain proficiency
Resource Risk	Unexpected Hardware issues	Team to keep testing hardware functionalities to ensure that hardware is in good condition. Team to also have spare parts for hardware in case of any hardware breakdown
Resource Risk	Scalability in hardware procurement	Sponsor to help the team source the robotics supplier

Challenges



- Team is unfamiliar with working with robotics hardware
- Malfunction of the robot/robotics parts which requires replacement
- There may be many changes in the platform requirements as our project proceeds
- Delaying of Project due to inaccurate time estimation on functionalities and unfamiliarity with robotics hardware



Improvements



- Took the time to familiarise ourselves with the robot hardware
- Bought spare parts for the robot should there be a need for replacement and reduce down time



- Learn from previous iteration and ensure that project can be better managed

X Factor



By Finals :

- Aim to produce a full-fledged web application that will be used by at least 50 users islandwide
- Achieve 10 bookings within the first month of launch



Learning Outcome



- Importance of Project Management
 - Anticipate risks and be adaptable to change
- Managing of expectations is crucial
- Translating a business idea into technical deliverables

Learning Outcome



“Through this project, I am to improve my project management skills through being better able to anticipate potential risks, be it software or hardware. I will also have first hand experience in the process of translating a business idea into technical deliverables”



“I hope to challenge myself by stepping into an unknown field where I have to pick up skills/knowledge that I do not currently possess. Through this experience I hope I can train myself to work under pressure as well as learning to cope with limited knowledge. The lack of knowledge would further establish my communication skills when I have to seek help from fellow peers/professors who are more experienced in this field.”

Learning Outcome



“I am looking forward to greatly benefitting from liaising with a real-world stakeholder to accommodate his demands and needs. I am aiming to not only sharpen, but to also enhance my knowledge of both user interface and experience design.”

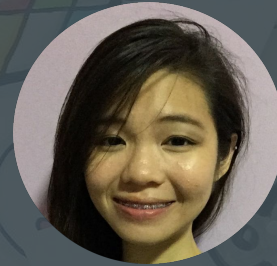


“Through this project I will learn how to be more meticulous and patient. I will understand the importance of project management, managing expectations of various stakeholders and the value of communicating with one another. I also hope that this group can be open with one another and communicate with each other clearly and coherently.”

Learning Outcome



“Through this project, I will learn how to manage all stakeholders, especially business side personnels. Also I will learn to have a keen eye for detail as well as to consistently improve the product so that the final delivered product would be of the best.”



“Through this FYP, I wish to learn more coding and soft skills to equip myself better for the future. Additionally, I would wish to gain a better understanding and grasp of the connection between both software and hardware in the working world.”

The background image is a still from the animated film 'The Iron Giant'. It depicts the titular Iron Giant, a massive red robot, flying through the night sky over a city. Hiro, a young boy in a blue and black suit, is perched on the Giant's back. On the ground, several other characters are visible, including a man in a green shirt and a woman in a blue suit, along with a small blue creature. The city below is illuminated by streetlights and building lights, creating a vibrant night scene.

Thank You!