

Two Cube

IS480 Midterms

Agenda

1. Introduction
2. Demo
3. Technical Complexity
4. User Acceptance Test Results
5. Project Management
6. Risk & Change management
7. X Factor
8. Reflection and learning outcome

INTRODUCTION

Our Team



Deborah Sim
Project Manager & Scrum Master



Vera Low
Robotics Hardware Lead & Developer Deputy



Sebastian Choo
Business Analyst Lead & Quality Assurance



Jack New
Developer Lead & Robotics Hardware Deputy



Ahmad Saifullah
Front-End & UI/UX Developer



Abdul Haqqim
Developer Lead & Business Analyst Deputy

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

Problem

Intimidation and hassle of Robotics
programming learning



- Hardware and Software Costs
- Do not know how to start

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

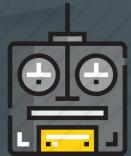


Remove the hassle of setting up the robot and connectivity issues

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 a 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



Interactive and Convenient



Sparks learners' interest in programming

DEMO

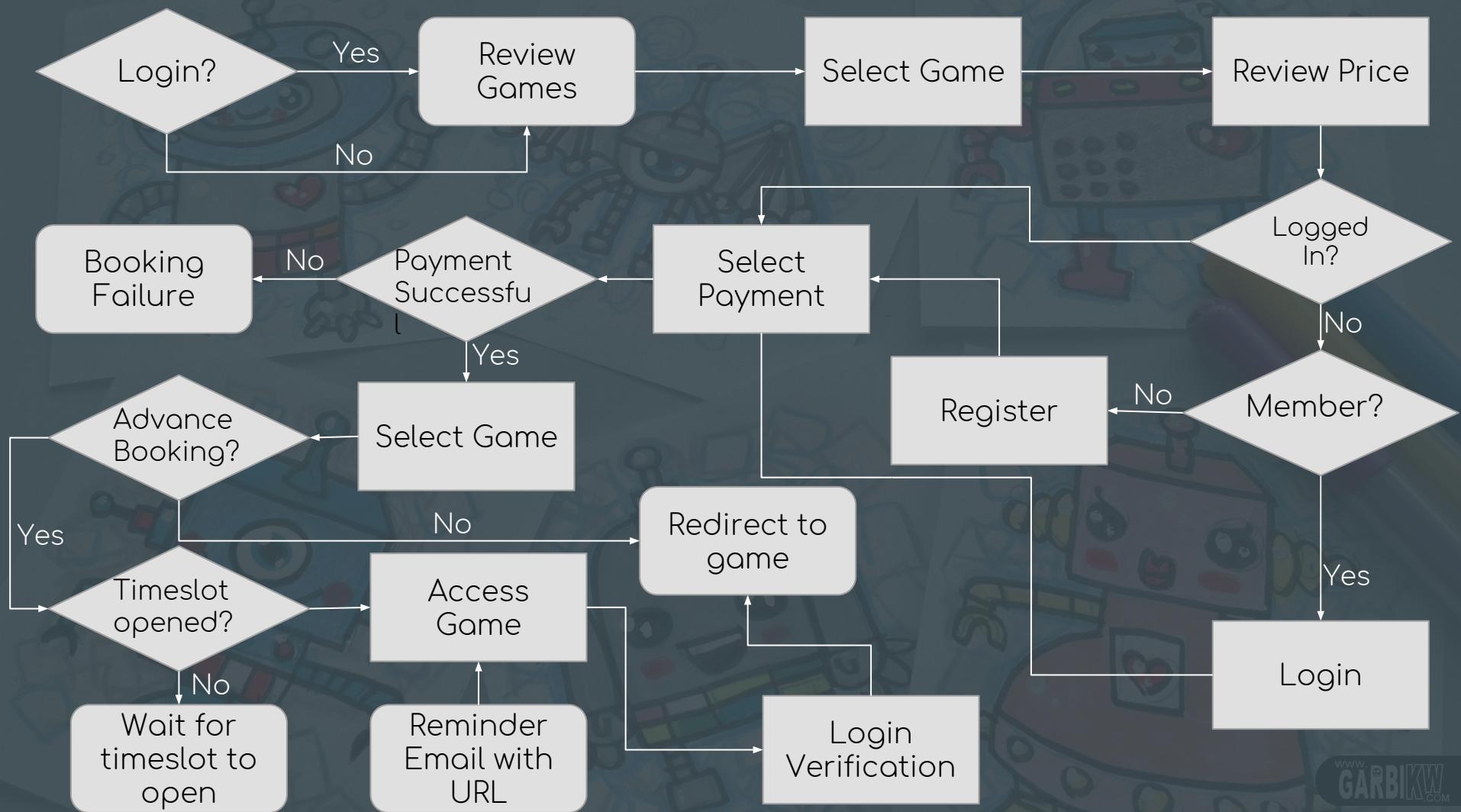
Persona

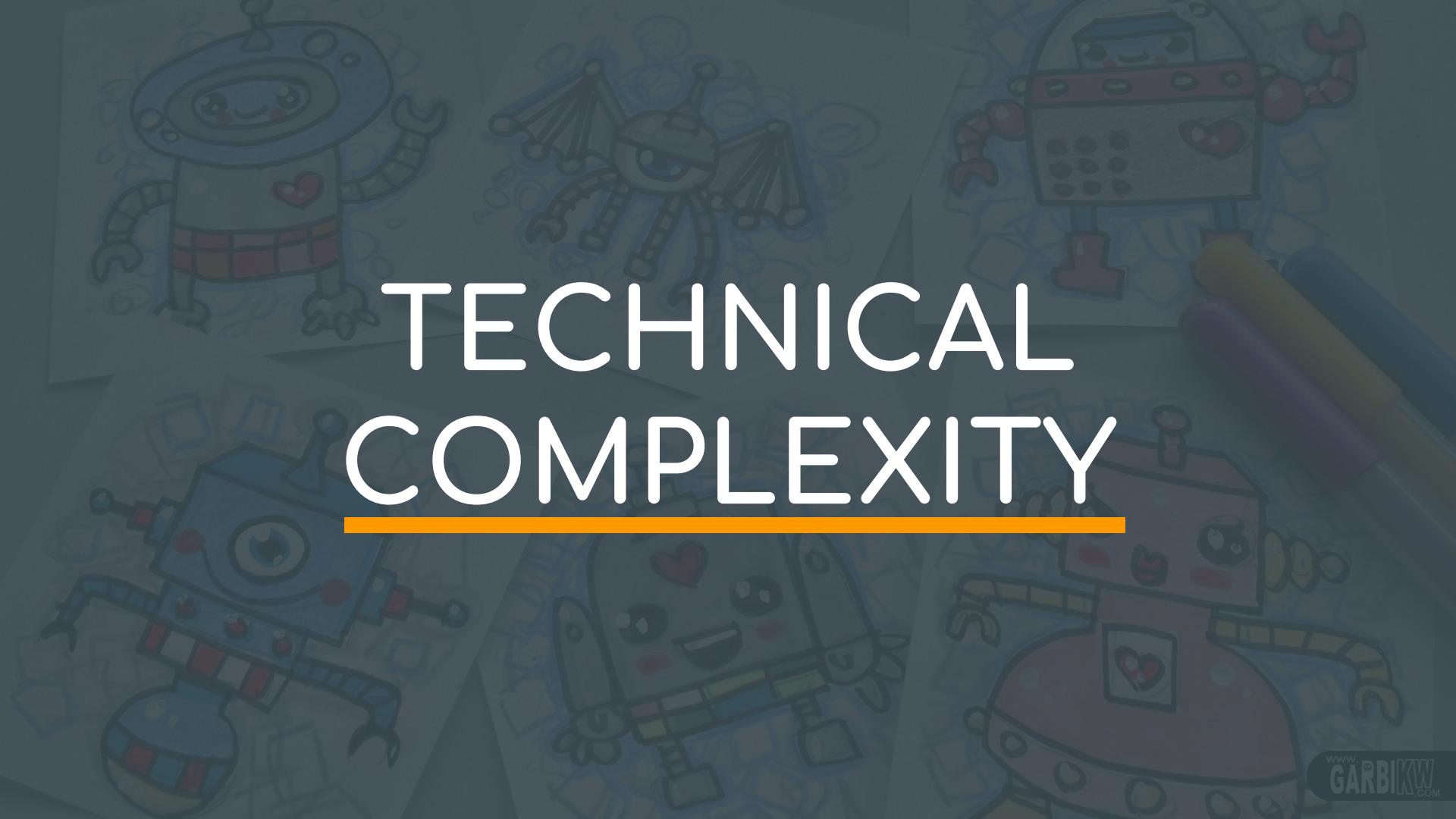
Sebastian is a university student who has always been interested in learning programming.

With a strong passion for learning, he started programming via multiple online platforms.

However, after a month or two, he started to get bored and felt that the platforms he used are boring, not interactive and yearns for an alternative.





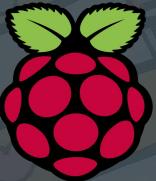


TECHNICAL COMPLEXITY

Technologies



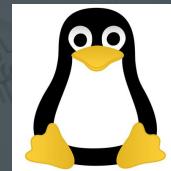
Python



Raspberry Pi



Wordpress



Linux



Windows

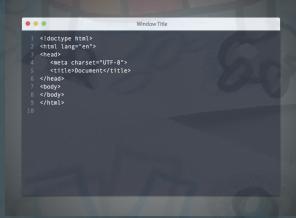


Putty



WinSCP



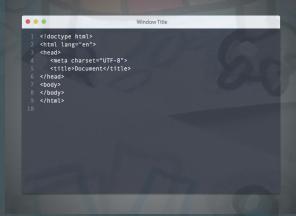


Users would access the games and live stream on the AWS platform over a URL link found in the booking email.

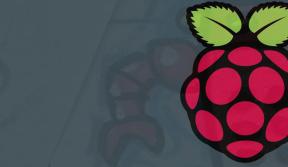
1



WordPress to book game slots or purchase robot kit.



User generated codes are transferred via MQTT to the robot's raspberry pi.



The robot receives the codes and are executed by using Dexter Industries's API.



USER ACCEPTANCE TESTING

Objectives

FEEDBACK

Gain valuable feedback from Potential Customers on the website in terms of user interface, design, functionalities, etc.

CONCERNS

Understand possible concerns regarding core functionalities such as Booking of slots, Payment, Robot remote control.

UAT 2

Date/ Time: Wednesday, 23rd January 2018, 2:00 pm

Venue: SIS Project Way

No. of Participants: 20

Age Group: 19-25

Goals

- 100% of users should be able to create an account and receive an activation email upon successful creation.
- 100% of users should be able to successfully make a booking and navigate to game page without any assistance

UAT Outcomes - Positive

GOAL REACHED!

All users were able to successfully create an account and receive the activation email.

OPPORTUNITIES

Users see the potential in the business idea as well as the website.

UAT Outcomes - Improvements

- 1) Users should be able to book slots 30 mins earlier onwards.
(Eg. time now is 9.30pm, can book from 10pm onwards)
- 2) Incorrect date shown when clicked on “Today” for the booking the slots
- 3) Numerous spelling mistakes and areas to improve with regards to website’s description phrasing.

UAT 3

Date/ Time: Monday, 12th February 2018, 12:00 pm

Venue: SIS Project Way

No. of Participants: 12

Age Group: 19-25

Goals

- Complete all tasks without guidance from a test facilitator
- Able to register and book a time slot with ease
- Able to shop for robot kits, submit enquiries and game ideas with ease
- Able to understand how to control the robot



UAT Outcomes - Positive

SATISFIED!

Users liked the idea and generally enjoyed our service.

CLEAN DESIGN

Website's user interface and design is clean and neat.

EASY NAVIGATIONS

Navigations of the website was easy and effortless.

SIMPLE CONTROLS

Control of the remote robot was understandable and simple enough, even more users without IT background.

UAT Outcomes - Insights

Ease of understanding
and control of Remote
Robot

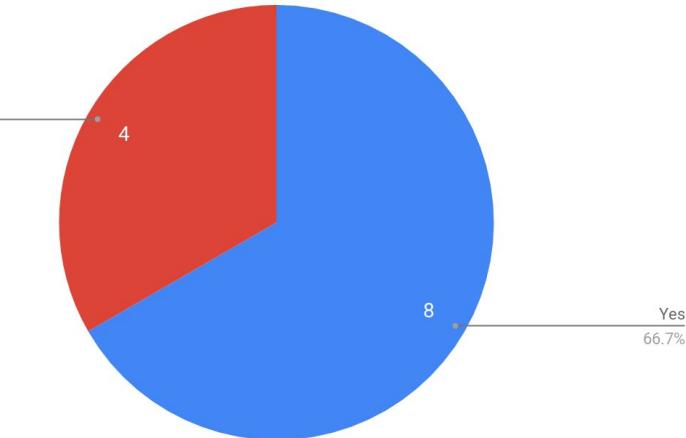
Score

7.1

Navigation of Website

7.8

Would you pay for a service like this?



UAT Outcomes - Improvements

- 1) User interface comments such as
 - Better positioning of the headers/tabs on the website,
 - More descriptions and usage of pictures
 - Clear “Sign up” or “Register” Button
- 2) Could provide even more tips and help when controlling the robot, especially for users with no tech background

PROJECT MANAGEMENT

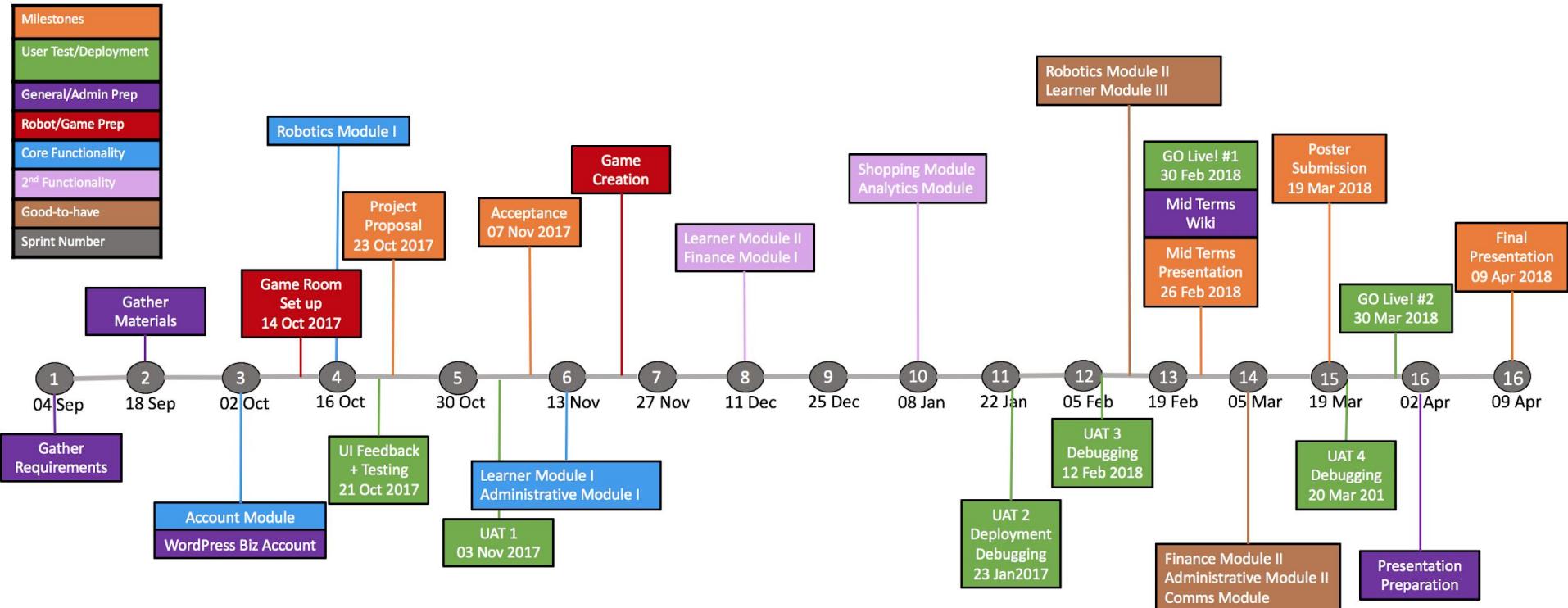
Project Management



An agile approach to deliver integrated, tested and business-valuable features in each sprint fast

Sprints with a fixed duration of 2-weeks

Project Timeline



CORE FUNCTIONALITIES

Account Module

- Login/Logout
- User Registration
- Profile Management

Robotics Module I

- Remote Control

Administrative Module I

- Database Management
- Add/Delete Game

Learner Module I

- Code Editor
- Live Streaming
- Coding Hints

SECONDARY FUNCTIONALITIES

Finance Module I

- Payment
- Wallet

Learner Module II

- Book Additional session
- Public Live Streaming

Shopping Module

- Purchase of Robot Kits

Analytics Module

- Site Statistics

GOOD-TO-HAVE FUNCTIONALITIES

Finance Module II

- Cash Out
- Player Donations

Administrative Module II

- Recording of Live Display
- Robot Stock and Status Check

Learner Module III

- Multiplayer Game Room

Robotics Module II

- Robot Management System

Comms Module

- Chat Bot

COMPLETED FUNCTIONALITIES



Completed Functionalities (Acceptance)

Account Module

Login/Logout

User Registration

Profile Management



Robotics Module

Remote Control



Core Functionalities



Account Module



Login/Logout

User Registration

Profile Management



Learner Module I

Code Editor

Live Streaming

Coding Hints



Administrative Module I

Add/Delete Game

Database Management



Robotics Module I

Remote Control

Secondary Functionalities



Finance Module I



Payment

Wallet



Learner Module II

Public Live Streaming



Shopping Module

Purchase of Robot Kits

INCOMING FUNCTIONALITIES

Secondary Functionalities



Learner Module II

Book Additional
Session



Analytics Module

Site Statistics

Good to Have Functionalities

Finance Module II



Cash Out

Player Donations



Administrative Module II

Recording of Live Display

Robot Stock and Status Check



Learner Module III

Multiplayer Game Room



Robotics Module II

Robot Management System



Comms Module

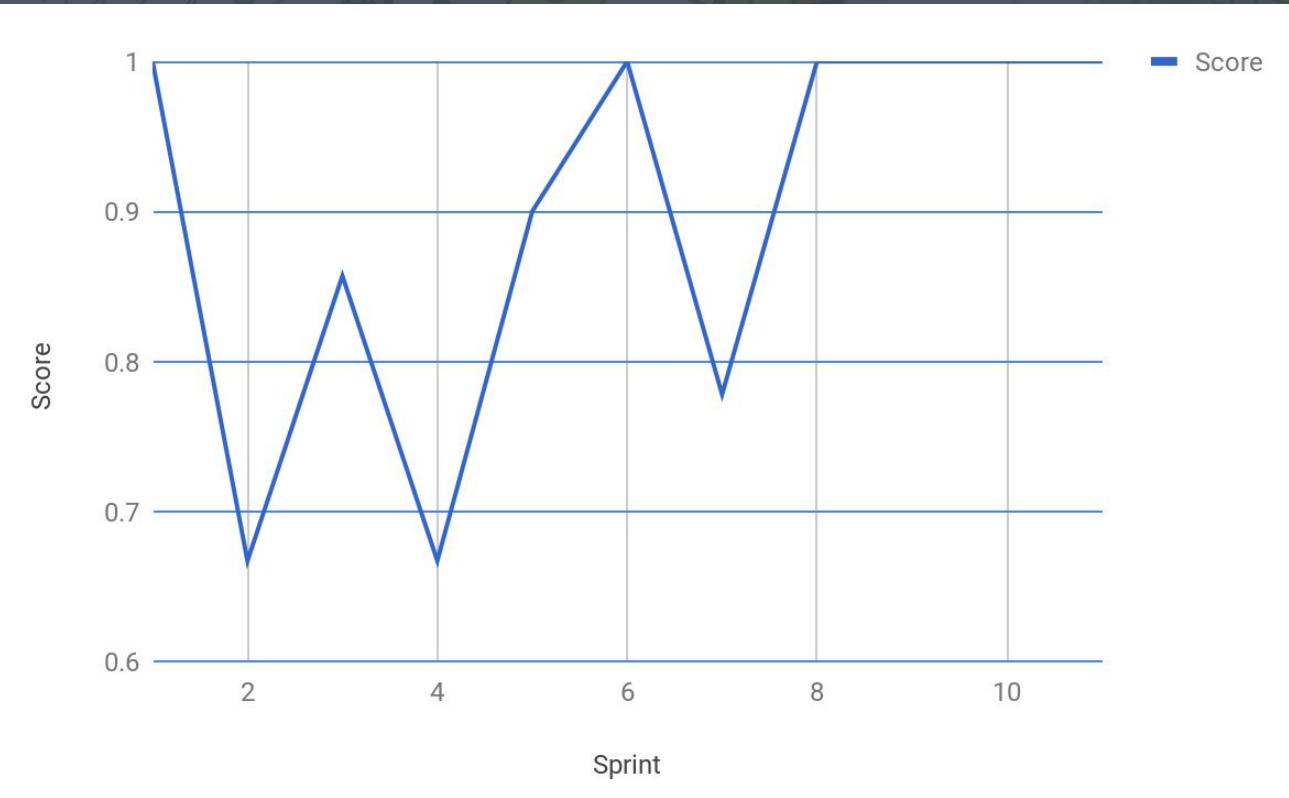
Chat Bot

Task Metric

Sprint	Total Tasks	Tasks Completed	Tasks Carried Forward	Score
1	2	2	0	1.0
2	3	2	1	0.667
3	8	7	1	0.857
4	9	6	3	0.667
5	10	9	1	0.9
6	8	8	0	1.0
7	9	7	2	0.778
8	8	8	0	1.0
9	6	6	0	1.0
10	8	8	0	1.0
11	7	7	0	1.0

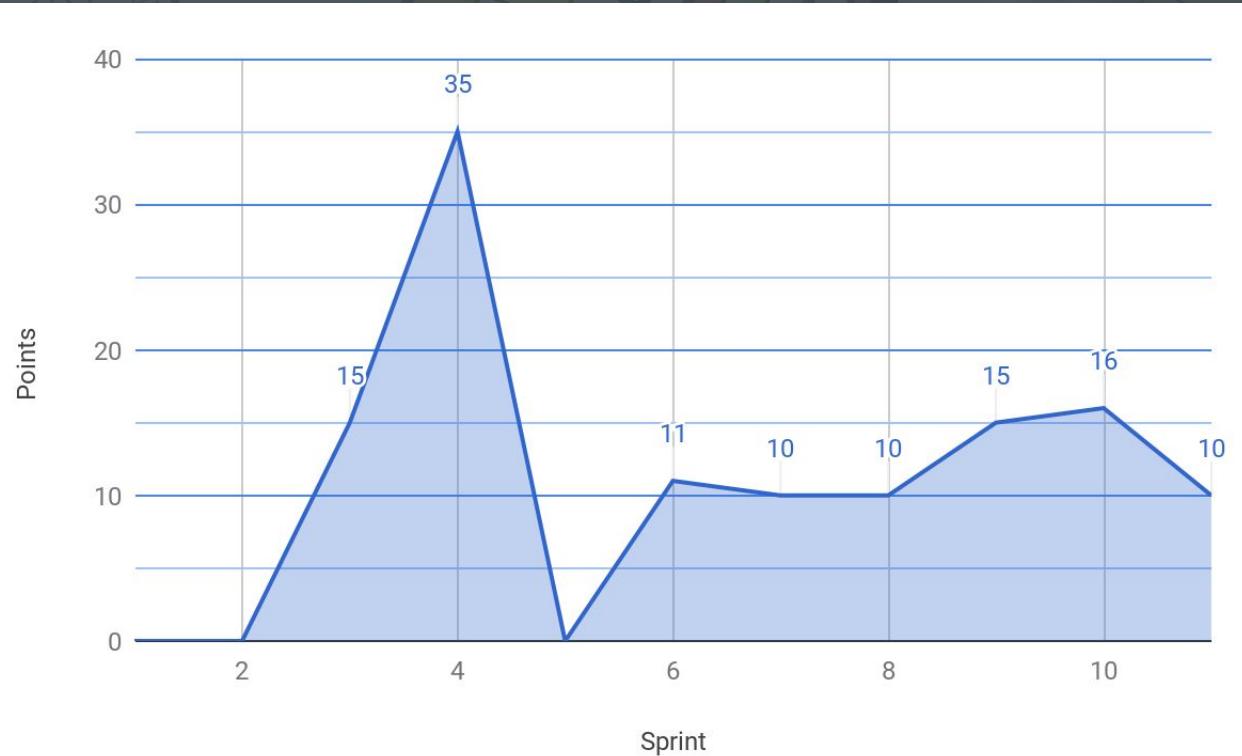
Task Metric

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8	1.0
9	1.0
10	1.0
11	1.0



Bug Metric

Sprint	Points
1	-
2	-
3	15
4	35
5	-
6	11
7	10
8	10
9	15
10	16
11	10



Risk Management

Risk Type	Risk Event	Mitigation
Technical Risk	Integration of the separate servers	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
Project Management Risk	Having to adjust tasks and schedule based on wrong estimations or unexpected hardware issues	Team to spend more time on current tasks to get back on track or research more to resolve hardware issues
Client Management Risk	Finding a balance between the school requirements as well as sponsor requirements	Try to understand both points of view and compromise. Consult supervisor if issue cannot be resolved with sponsor to ensure that everyone is on the same page

Change Management

Sprint	Date	Type	Requested By	Change Type	Change Description	Reason	Status
3	8.10.2017	Scope	Team	Learner Module	Game Room Setup delay	Raspberry Pi burnt, and thus unable to obtain measurements of the robot's movement	In Progress
3	8.10.2017	Scope	Team	Account Module	Change in website provider	Wix had supported a limited number of plugins, especially since e-commerce was a huge concern for the sponsor, we researched and realised WordPress would be the better option	Completed
5	30.10.17	Scope	Sponsor	Shopping Module	Included Shopping Module into scope	Expond on the e-commerce aspect of the site, provide a platform for aspiring game providers resources to start their game designs	In Progress

Change Management

Sprint	Date	Type	Requested By	Change Type	Change Description	Reason	Status
7	07.12.17	Scope	Team	Robotics Module	Extend Game Server to a separate server	Unable to connect to the robot directly through WordPress	Completed
7	10.12.17	Project Management	Project Manager	UAT 2	UAT 2 Delay	Booking game slot on WordPress still in progress	Completed
7	10.12.17	Scope	Team	Analytics Module	From Learner Proficiency to Site Statistics	Measuring learner proficiency is not feasible	In Progress
9	27.12.17	Scope	Team	Game Provider Module	Removed admin access option for game providers, and inserted form option	Game providers should not have direct access to the administrative pages (database etc.) and games should be streamlined by admins to ensure the credibility and reputation of the site	Completed

X FACTOR

XFactor



Target	Achieved
<ul style="list-style-type: none">• Minimum of 20 bookings• Minimum 20 users• \$200 in total revenue	<ul style="list-style-type: none">• Achieved 30 bookings• Achieved 25 users



REFLECTIONS

Challenges



Incompatibility of some plugins

Malfunction of the robot/robotics parts which requires replacement

Delaying of Project due to inaccurate time estimation on functionalities and unfamiliarity with robotics hardware

Miscommunication with Sponsor regarding terminologies

Improvements



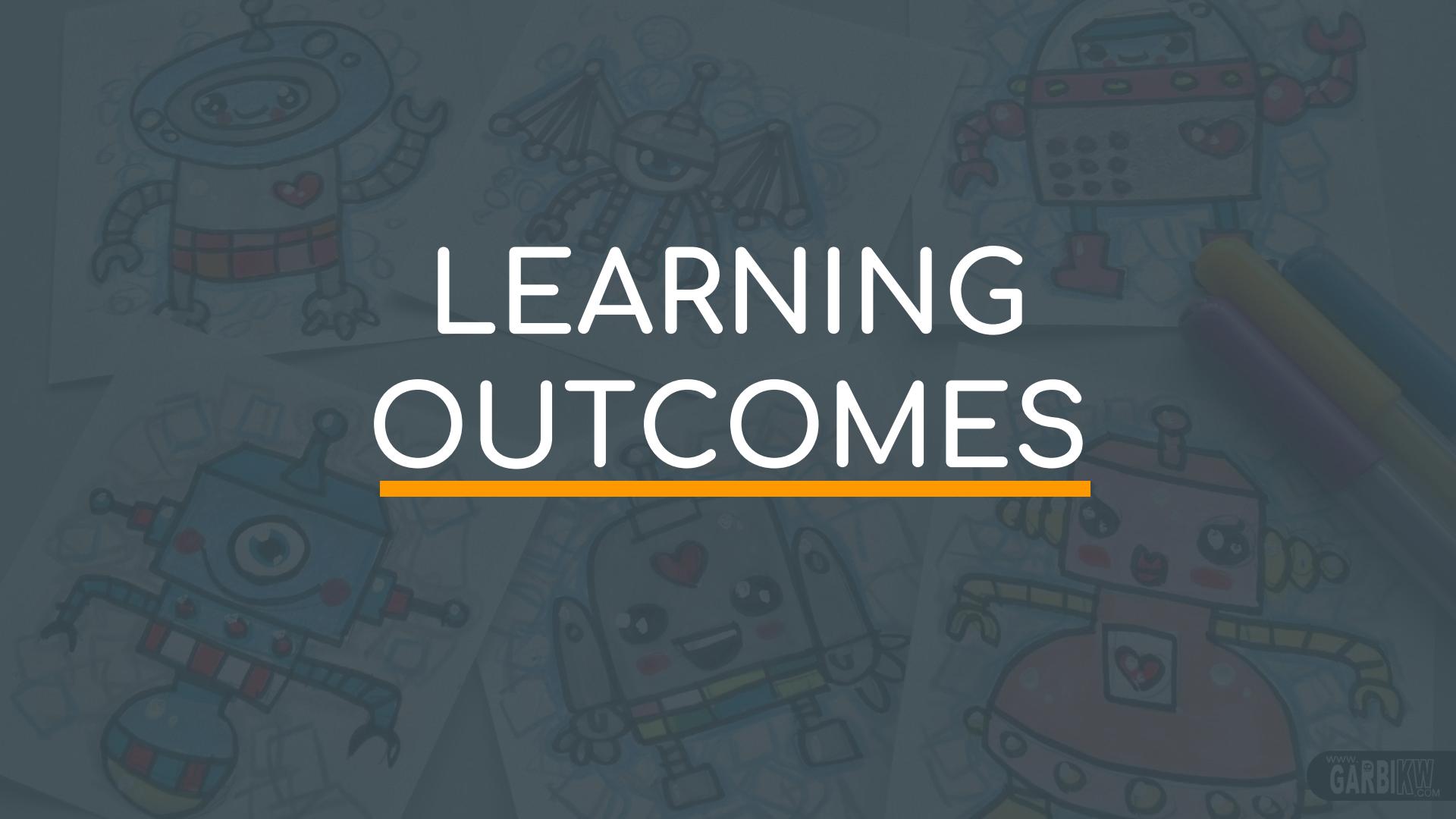
Took the time to familiarise ourselves with the robot hardware

Bought spare parts for the robot should there be a need for replacement and reduce downtime



Learn from previous sprint and ensure that project can be better managed

Work on tasks in parallel



LEARNING OUTCOMES

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



"This project gave me a first-hand experience in juggling requirements between the school and sponsor. Through this, I can improve my planning and communication skills which are important for project management."

"Stepping out of your comfort zone really helped me to expose myself to new technologies as well as gaining more knowledge. Having taken this project has led me to understand IOT a lot better."

Learning Outcome



"This project has made me stretch myself and empathise with needs of the clients to deliver their goals."



"Through this project I will learn how to be more meticulous and patient. In addition, clear communication is needed within our group as well."

Learning Outcome



"Through this project, 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."



"Time management as well as project management is very important especially with all the other commitments that we have such as other school modules."

A vibrant, futuristic cityscape at night. In the foreground, a massive orange and red robot with a large head and a determined expression is shown from the side, facing right. Behind it, a woman in a blue and black suit with a helmet is perched on a building. In the middle ground, a man in a green suit is running towards the left. To his right, two women in dark, futuristic suits are walking; one has blue hair and the other has purple hair. On the far right, a small, blue, horned creature with a mask is crouching. The background is filled with tall buildings, billboards, and neon lights in shades of blue, green, and yellow.

Thank You!