



# MID-TERM PRESENTATION

JEON JE MIN (JJ), LOH CHUNG KIT, POON CHOR YI, TAN KIA YONG

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# AGENDA

1. Introduction
  2. Project Overview
  3. Demo
  4. Technical Complexity
  5. User Testing
  6. Project Management
  7. Roles & Reflections
-

01

# INTRODUCTION

The team. The client

# 01 THE TEAM



**CHOR YI**

Project Manager &  
Quality Assurance



**CHUNG KIT**

Assistant PM &  
Secondary Developer



**JE MIN (JJ)**

Front-end Developer



**KIA YONG**

Lead Developer



**INSTRUCTOR  
PRAKASH**

Supervisor

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# 01 THE CLIENT



- A **psychometric profiling test** for students or young adults
- **Discover** their entrepreneurial strengths and talents
  1. Starteur Attributes
  2. Starteur Roles

# 01 THE CLIENT

PROGRESS



I make associations between completely disparate ideas \_\_\_\_.

with difficulty      in time      with ease




in time

Skip, answer this question later

Need help?

Next >

PROGRESS



When necessary, I register a complain or call out a wrongdoing.

☐ No      ☐ Yes

Skip, answer this question later

Need help?

Next >

# 02

## PROJECT OVERVIEW

Problems. Purpose.

Target audience. X-factor

# 02 PROBLEMS



Attract educators to use Starteur Test as a supplement for teaching entrepreneurship



Wants to incorporate Starteur Test in their training programs



# 02 MOVITATION

“Entrepreneurship has to start in school”



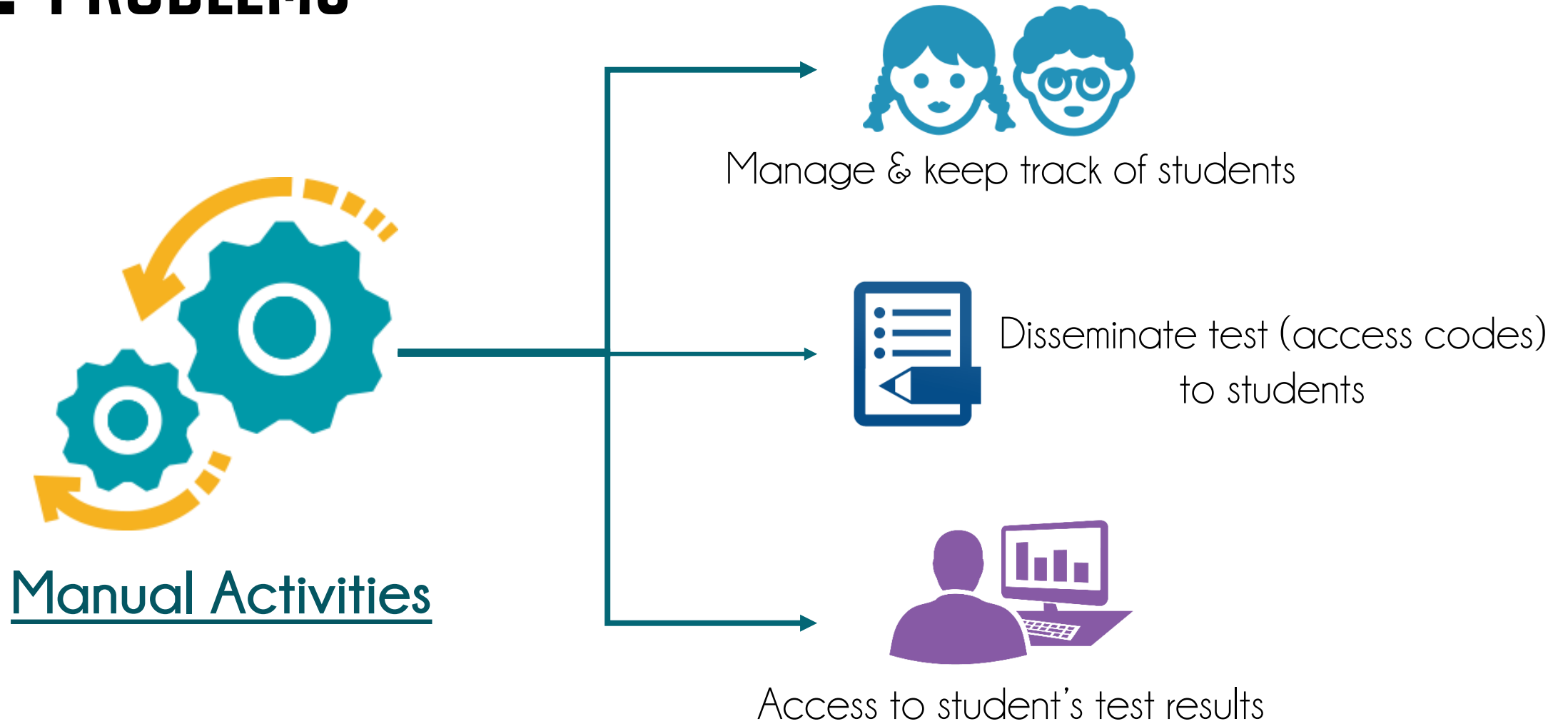
- Learn more about entrepreneurship education
- See how we can improve our entrepreneurial attitudes
- Learn from our client

# 02 TARGET AUDIENCE

- ✓ Secondary & tertiary educators
- ✓ University lecturers
- ✓ Personal development trainers



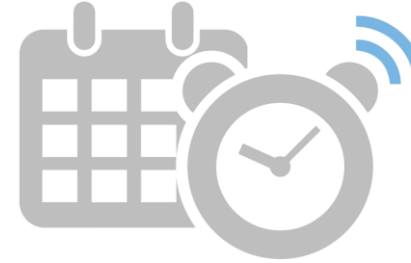
# 02 PROBLEMS



# 02 PROBLEMS



## Notifications



Students who need reminders



Notify educator upon completion of test

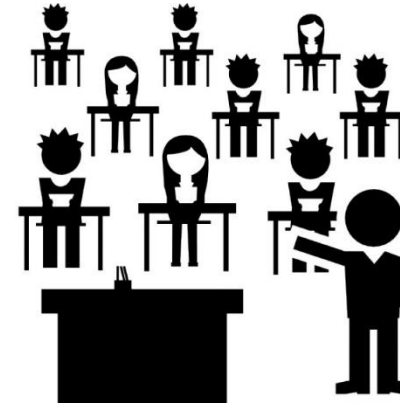
# 02 PROBLEMS



Insights



Individual students



A group/multiple groups of students

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# 02 OUR SOLUTION

A comprehensive application that aims to provide convenience to educators who would like to use the Starteur test as a supplement for teaching entrepreneurship

1

Eliminate Manual  
Activities

2

Enable student  
management

3

Provide access to both  
individual & group reports

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# 02 MARKET RESEARCH

|  | GALLUP® StrengthsQuest™ |  logicmills<br><small>The Preferred Soft Skills Assessment And Training Provider</small> |  <small>The people development people.</small> cpp |  socrative<br><small>by MasteryConnect</small> |  Starteur |
|--|-------------------------|--|---|---|--|
| Manage users (students)                  | ✓                       |  |   | ✓   | ✓  |
| Assign tests to users (students)         | ✓                       | ✓  |   | ✓   | ✓  |
| Notification                             |                         |  |   |   | ✓  |
| Assign Co-educator                       |                         |  |   |   | ✓  |
| Access to user's (student) results       | ✓                       | ✓  |   | ✓   | ✓  |
| Consolidate results for a group of users |                         | ✓  | ✓   | ✓   | ✓  |
| Consolidate results for multiple groups  |                         |  | ✓   |   | ✓  |

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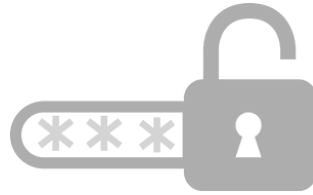
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# 02 X-FACTOR



3 Educators Registered



100 Access Codes Used



3 Group Reports Generated



2 Educators Confirmed



50 Students Confirmed

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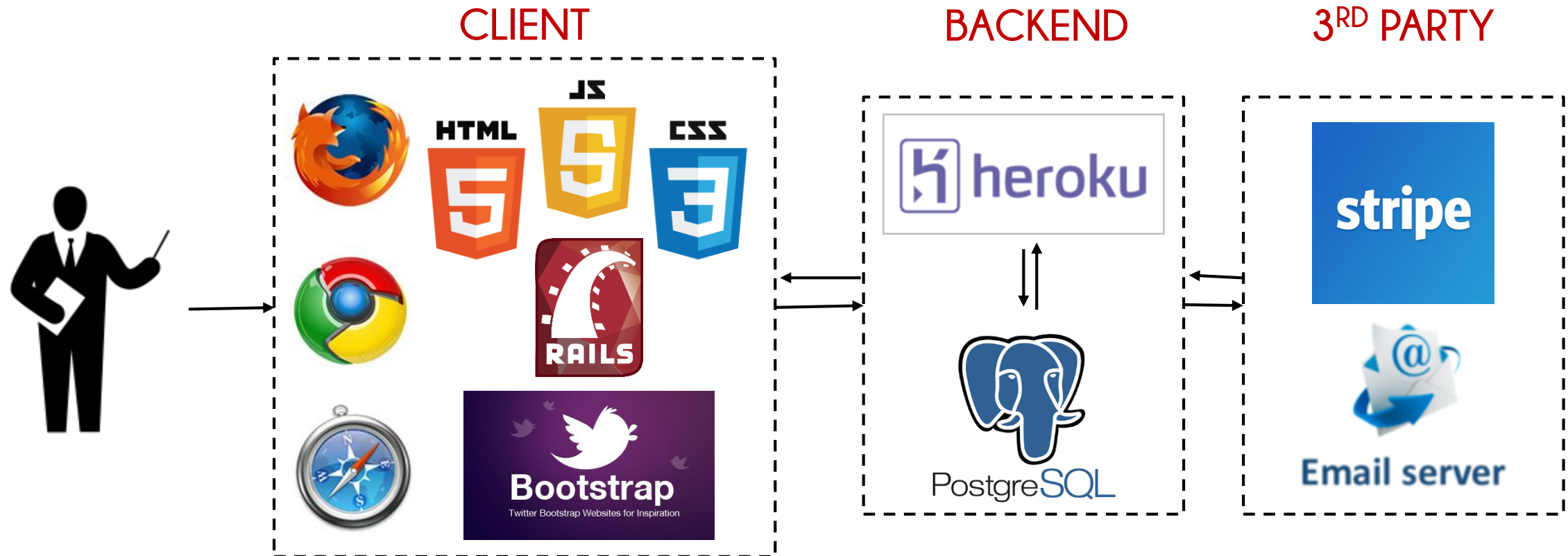
03 DEMO

# 04 TECHNICAL

Technical diagram.  
Technical complexity.

# 04 TECHNICAL DIAGRAM

## STAGING

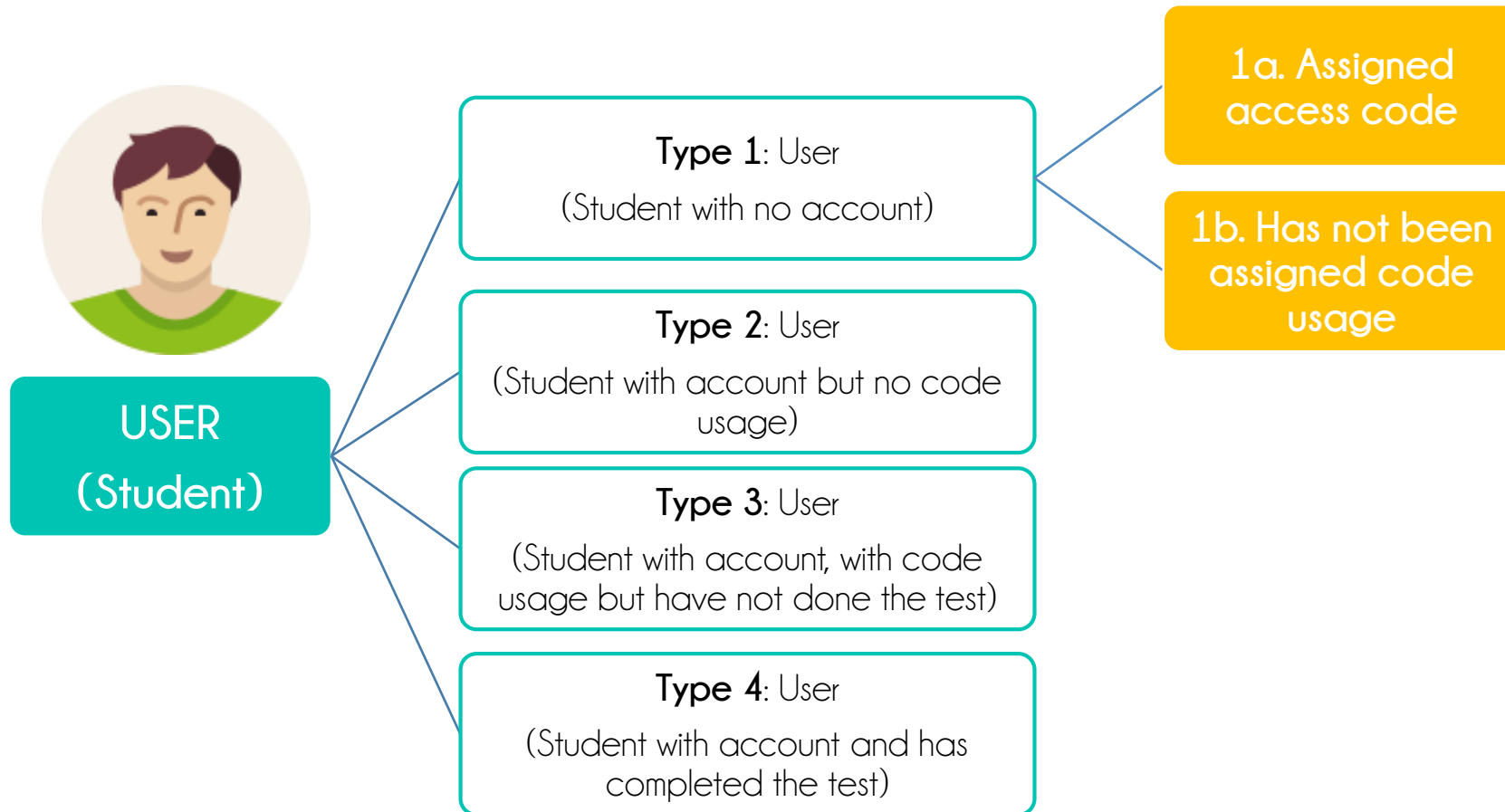


# 04 COMPLEXITY 1

## Assigning Code Usage

- Educator can potentially have a user of mixed states. Every time an educator tries to manage a batch, i.e. he has to take into account the different states a user can be in.
- Every time he takes an action, the logic has to take into account all the possible relevant states the user might be at.
- Compounded (exponential problem) when your actions involve more than 1 such modal with multiple states.
- **Action:** Figure out different possible combinations & appropriate actions to take.

# 04 COMPLEXITY 1



## Sample scenarios:

If user is removed what happens to code usage?



What if user is re-added?

Assign code usages to all users

Send test reminder to all users

# 04 COMPLEXITY 2

## Generating PDF

- Involves stylized elements, layouts and dynamic content.
- Difficult to use go-to PDF libraries as PDFs are generated in Ruby
- **Prawn:** highly flexible PDF document generation system

```
13  
14  gem 'prawn'  
15
```

```
def generate_batch_report  
  pdf = Educators::ReportPdfService.new(batch_id: params[:batch_id], user_id: params[:user_id])  
  send_data pdf.render, filename: 'report.pdf', type: 'application/pdf'  
end  
end
```

```
bounding_box([240, y_position + 40],:width => 180, :height => bounds.height) do  
  text "Potential", size: left_column_font_size, :color => left_column_font_color  
end  
  
bounding_box([0, y_position + 30],:width => 180, :height => bounds.height) do  
  image "#{Rails.root}/app/assets/images/#{@potentialstr}", width: 150, at: [100,y_position]
```

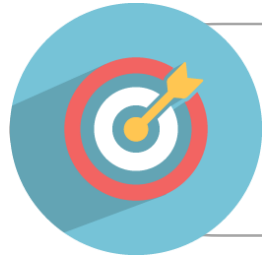
# 05

## USER TESTING

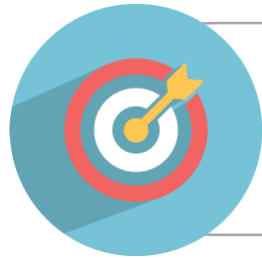
UAT1. UAT 2

# 05 USER TESTING 1

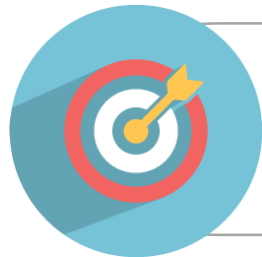
## Objectives



Verify that functionalities built are in line with user requirements



Determine if user interface is intuitive



Identify usability problems



# 05 USER TESTING 1

## Participants



**Mr Loh** Chih Hui, HOD Integrated Programme  
CHIJ St. Nicholas Girls' School



**Prof Lim** Lai Cheng, Academic Director, Office  
of the Provost and Fellow of Social Sciences  
Singapore Management University

**Mr Lim** Wei Yuan, Training Dragon  
Reactor Training



**Mr Leon** Lai, Year Head 2  
Raffles Institution



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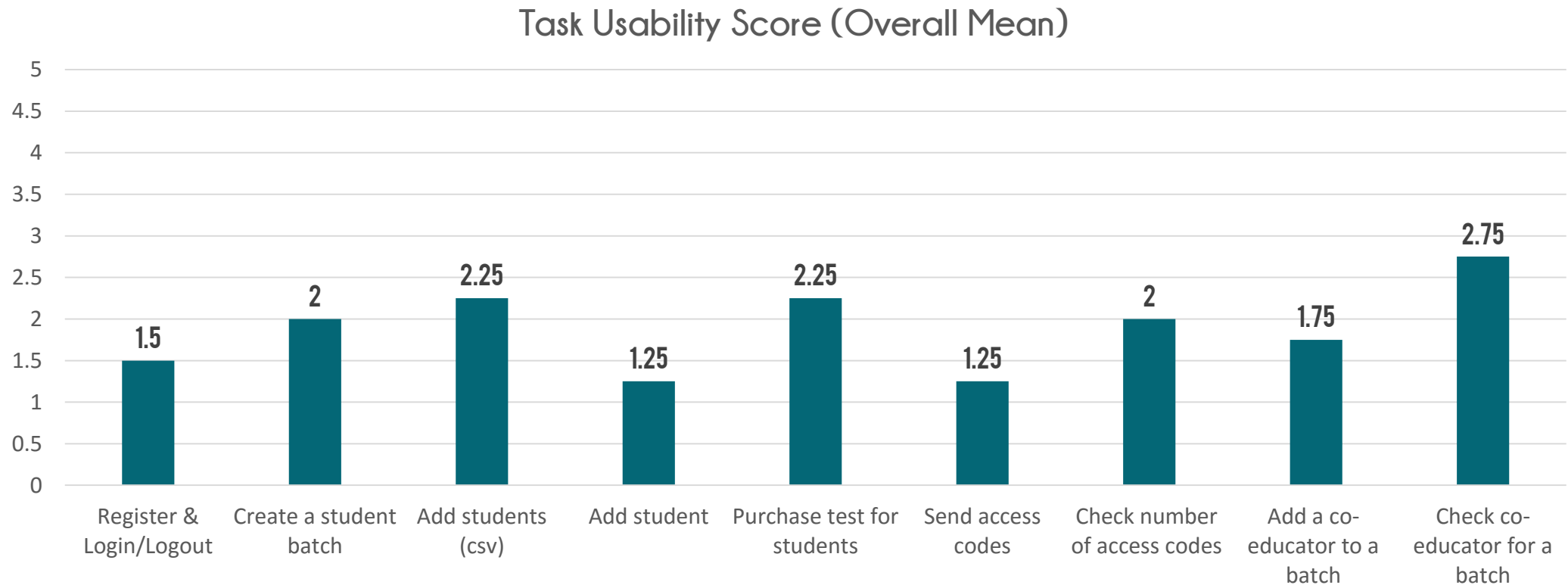
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# 05 USER TESTING 1

## Usability

Ease of performing task (1: Very Easy – 5: Difficult)



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# 05 USER TESTING 1

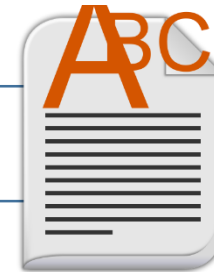
## Feedback

### 01. OVERALL FEEDBACK



Clickable icons

Text are too faint & small



# 05 USER TESTING 1

## Feedback

### 02. EDUCATOR MANAGEMENT



Lack of information hierarchy

Insufficient success messages



# 05 USER TESTING 1

## Feedback

### 03. REGISTER & LOGIN/LOGOUT



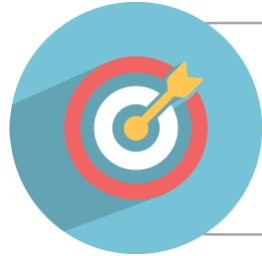
Consider validation for email

More extensive login validation

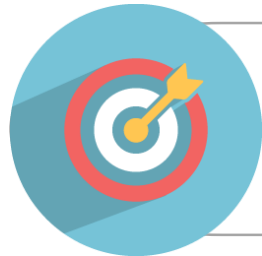


# 05 USER TESTING 2

## Objectives



Determine if user interface is intuitive



Identify usability problems



Identify additional functionalities  
that user may require

# 05 USER TESTING 2

## Participants



**Mr Lim** Weiyuan  
Reactor Training



**Ms Puah** Jing Wen, Finance Officer  
Reactor Training

**Mr Alex**, Customer Service  
Reactor Training



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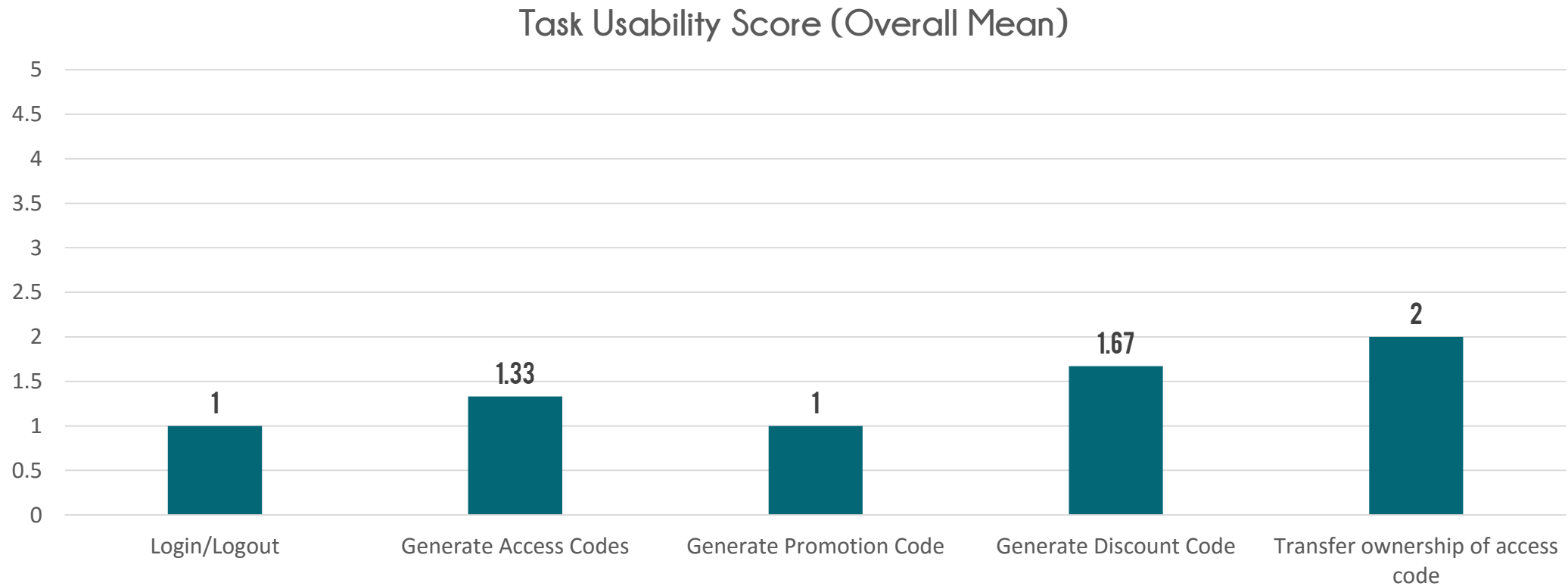
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# 05 USER TESTING 2

## Usability

Ease of performing task (1: Very Easy – 5: Difficult)



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# 05 USER TESTING 2

## Feedback

### 01. OVERALL FEEDBACK



Additional Search functionalities

Additional analytical features



# 06

## PROJECT MANAGEMENT

Planned v Actual. Changes.

Risks. Metrics

# 06 SCOPE (ACCEPTANCE)

## PRIMARY

### Educator Account Module

- Register
- Login/Logout
- Password Reset
- Update Details

### Educator Management Module

- Create batch
- Delete batch
- Add student to batch (single)
- Add student to batch (csv)
- Remove student from batch
- Purchase access codes
- View purchased access code
- View purchased access code
- View payment history
- Generate invoice
- Track test completion rate
- Add co-educator to batch
- Remove co-educator from batch

### Student Test Report Module

- View Student Test Report
- Export Student Test Report

## SECONDARY

### Payment Gateway Module

- 3<sup>rd</sup> party payment integration

### Batch Report Module

- Create batch report (single)
- Export batch report
- Sort users in batch
- Filter users in batch

### Notification Module

- Automated Email Test Reminder
- Email Access Code
- Automated Test Completion Notification

### Discount & Promotion Module

- Create discount code
- Create promotion code
- Apply discount code
- Apply promotion code

## TERTIARY

### Client Administrator Module

- Login/Logout
- Generate access codes
- View payment history of all educators account
- Generate global report for all users

# 06 SCOPE (ACTUAL)

## PRIMARY

### Educator Account Module ✓

- Register
- Login/Logout
- Password Reset
- Update Details

### Educator Management Module ✓

- Create batch
- Delete batch
- Add student to batch (single)
- Add student to batch (csv)
- Remove student from batch
- Purchase access codes
- View purchased access code
- View purchased access code
- View payment history
- Generate invoice
- Track test completion rate
- **Track status of access code**
- Add co-educator to batch
- Remove co-educator from batch

### Student Test Report Module ✓

- View Student Test Report
- Export Student Test Report

## SECONDARY

### Payment Gateway Module

- 3<sup>rd</sup> party payment integration
- **View payment history**
- **Generate invoice**

### Batch Report Module

- Create batch report (Single)
- Export batch report
- **Multiple batch report**
- Sort users in batch
- Filter users in batch

### Notification Module ✓

- **Manual** Email Test Reminder
- Email Access Code
- Automated Test Completion Notification

### Discount & Promotion

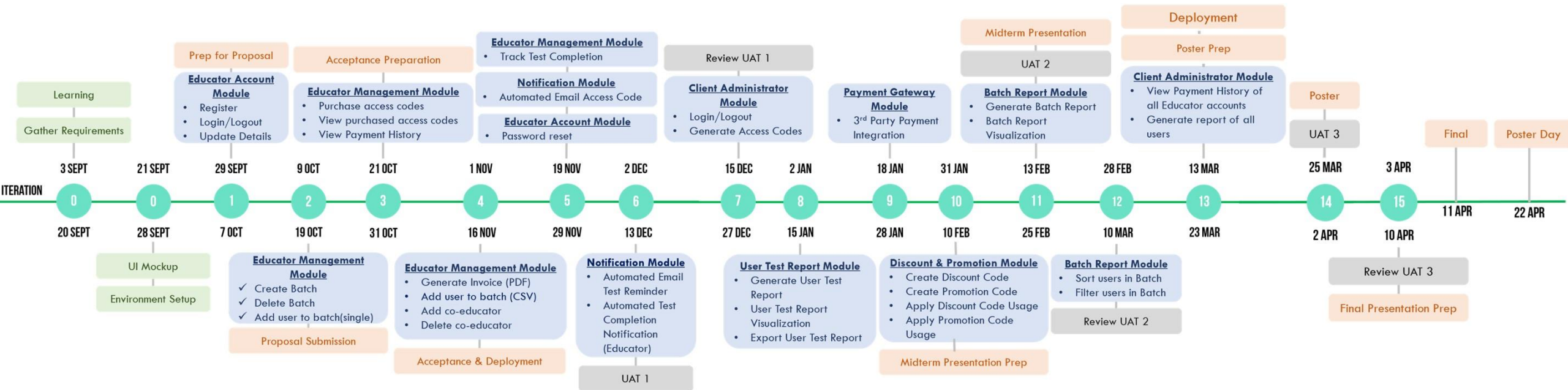
- ✓ Module
- Apply discount code
- Apply promotion code
- ✓ Create discount code
- ✓ Create promotion code

## TERTIARY

### Client Administrator Module

- ✓ Login/Logout
- ✓ Generate access codes
- ✓ **Transfer ownership**
- View payment history of all educators account
- Generate global report for all users

# 06 SCHEDULE (ACCEPTANCE)



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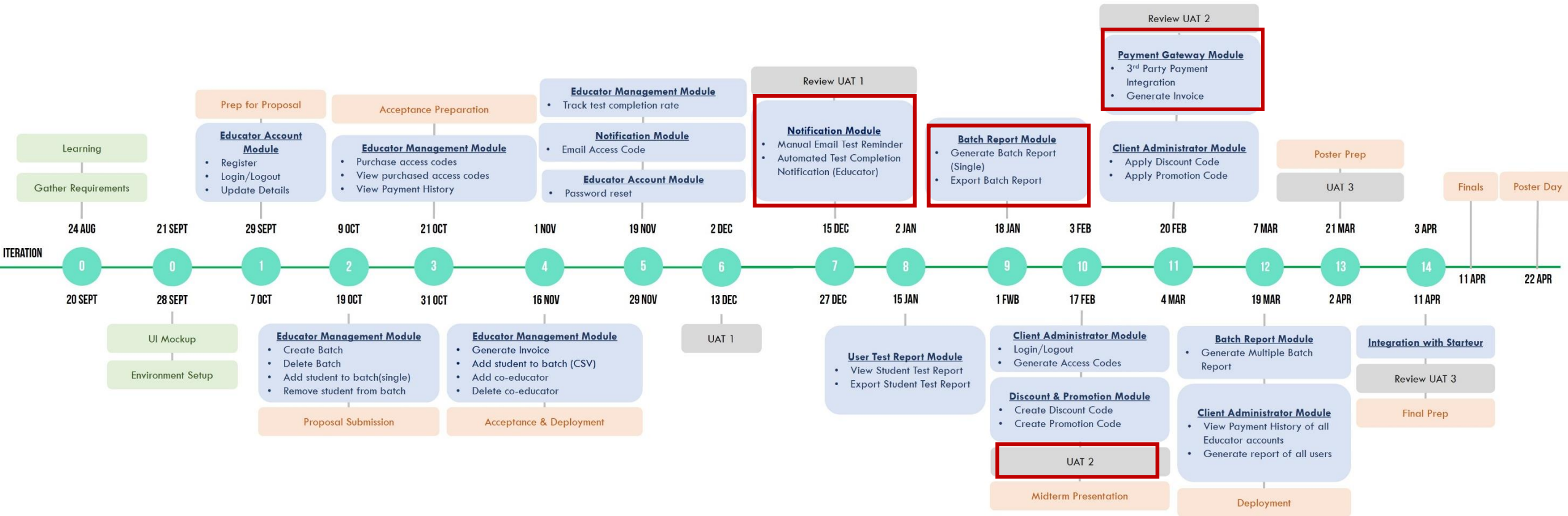
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# 06 SCHEDULE (NOV '15)



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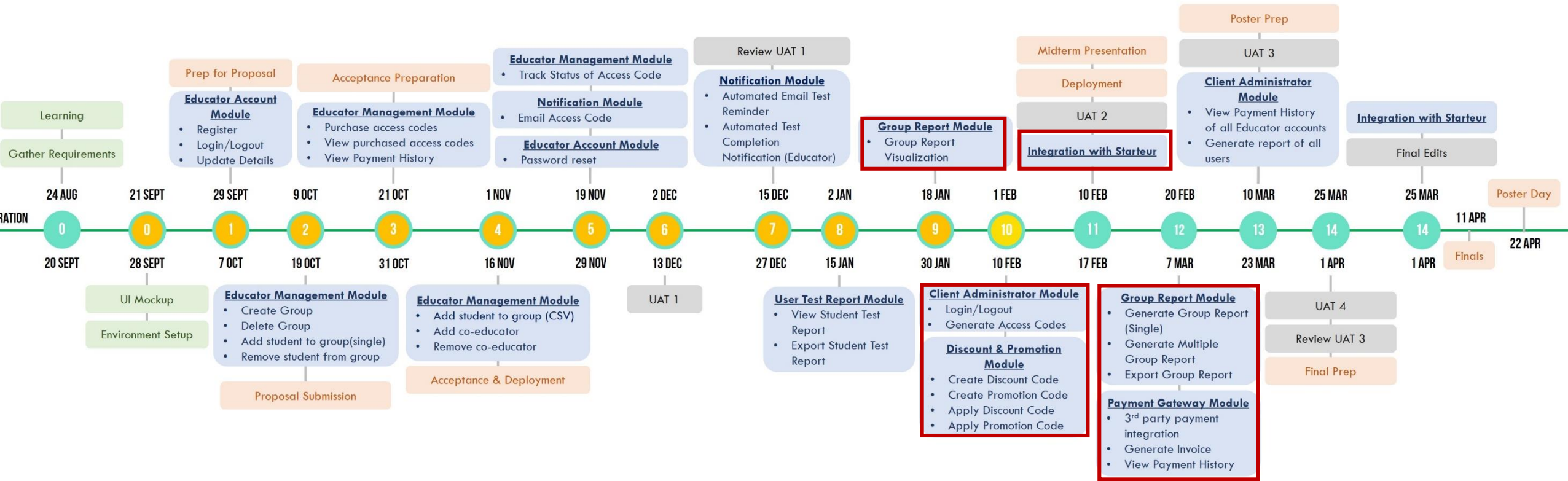
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# 06 SCHEDULE (ACTUAL)



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# 06 CHANGE MANAGEMENT

| Iter | Description  | Reason for Change   | Feasibility  | Priority | Accept/Reject |
|------|--|---|--|----------|---------------|
| 4    | Shifting “View Payment History” and “Generate Invoice” to Payment Gateway Module | These 2 functions will only be fully completed once 3 <sup>rd</sup> party payment system has been integrated        | Team has function to view payment history and to generate pdf invoice. | B        | Accept        |
| 6    | Dropping of function: Filter users in group                                      | UAT feedback: Filter is irrelevant to them  | N.A.   | B        | Accept        |
| 6    | Adding of function: Multiple Group Report  | UAT feedback: Ability to view reports for a cohort.   | Algorithm will be similar to group report                              | C        | Accept        |
| 6    | Change Track completion rate to Track status of access code                      | UAT Feedback: Educators prefer knowing if the student has completed the test/not, has been assigned access code/not | Access codes have field to track status, thus able to reflect.         | C        | Accept        |
| 6    | Change of test reminder email from automated to manual                           | UAT feedback: Educators want to have control over frequency of reminders.   | Remove threshold days to send reminder and add button to trigger       | B        | Accept        |

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# 06 RISK MANAGEMENT (ACTIVATED)

| Type        | Description  | Consequence  | Risk Level | Mitigation   |
|-------------|--|--|------------|--|
| Development | Starteur for Educators will require results from Starteur and is sharing same database as Starteur | Any delay in input required from Starteur will impact Starteur for Educators' development. Inconsistencies may also arise as there are 2 different development teams, affecting user experience. | C          | Specify needs early to Starteur & client.<br>Constant communication and updates.<br>Cut-off time for pulling from Starteur branch. |
| Technical   | RubyonRails (RoR) is a new framework for the team.   | Insufficient learning time & inexperience will affect development schedule & quality of work produced  | C.         | Started learning RoR once project has been confirmed.<br>Materials e.g. Rails Tutorials & Rails Casts utilized as.                 |

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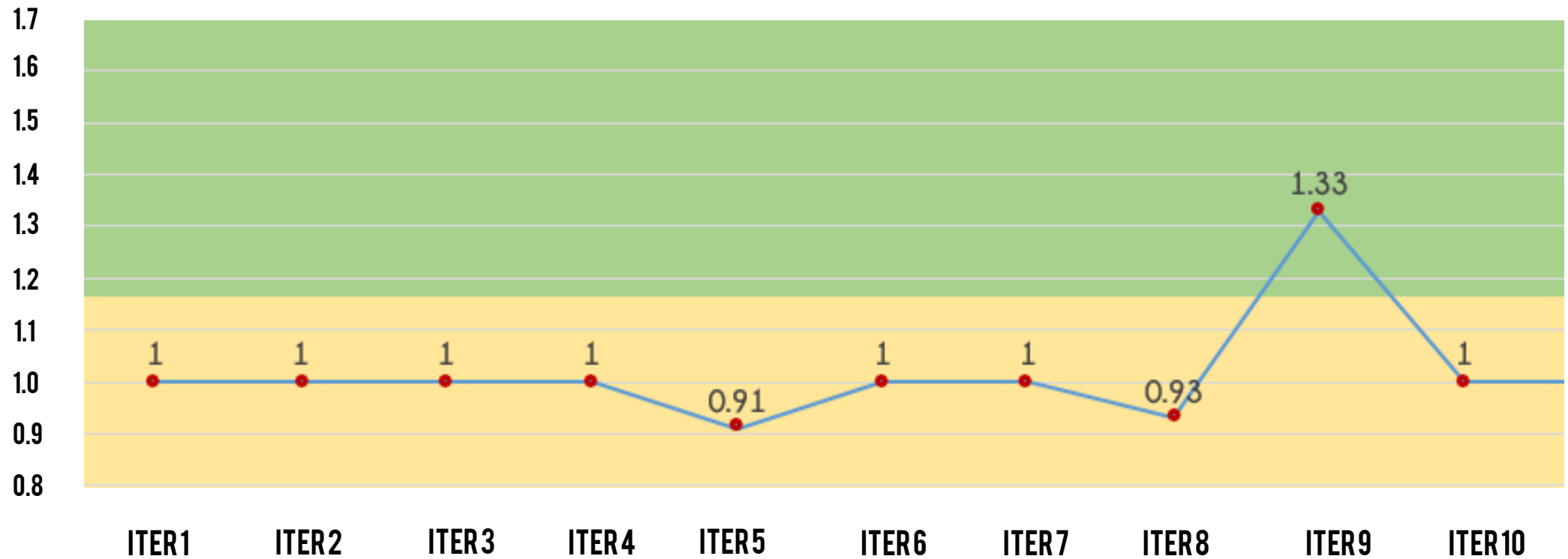
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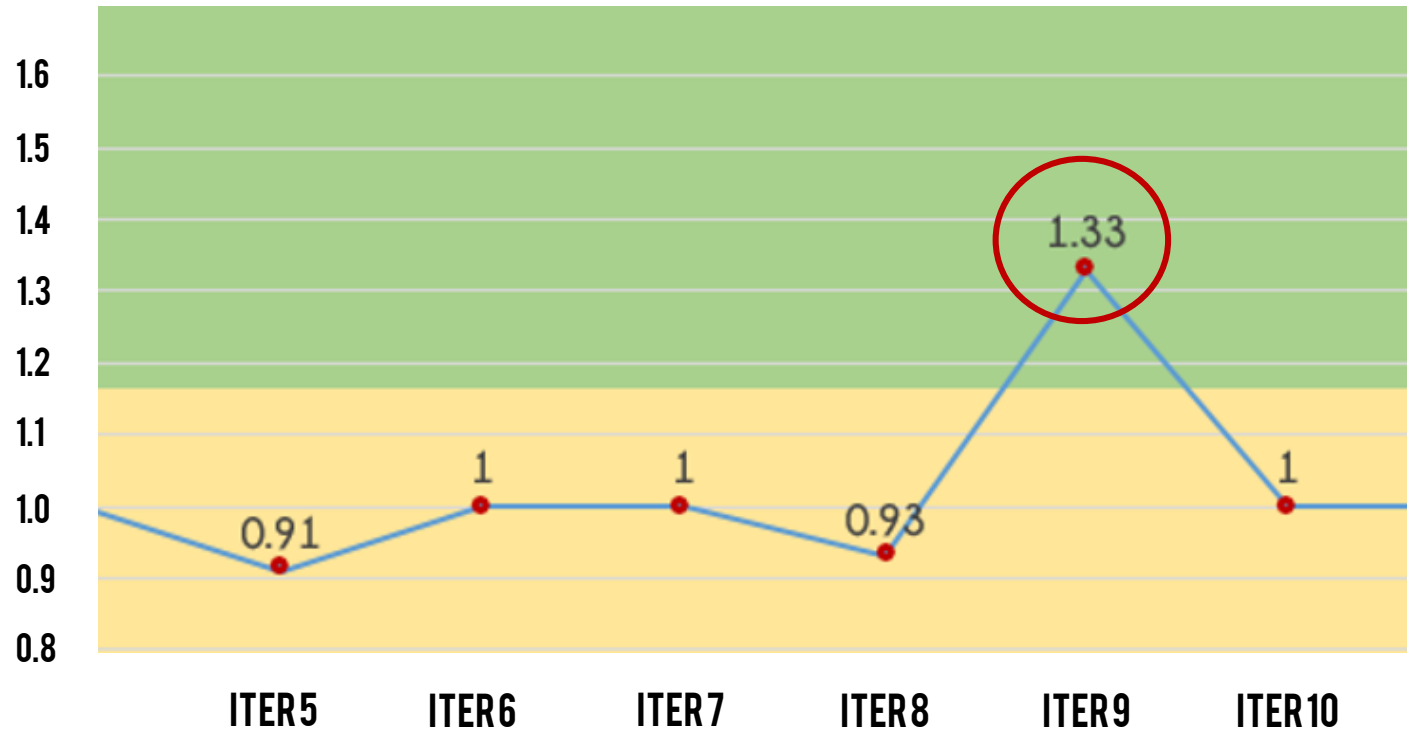
# 06 RISK MANAGEMENT (POTENTIAL)

| Type          | Description   | Consequence  | Risk Level | Mitigation  |
|---------------|---|--|------------|---|
| Communication | Client is juggling multiple roles and is busy with business trip. Sponsor may not be available when needed.               | A potential bottleneck for feedback for development as well as contact with end-users. | C          | Specify needs early to Starteur & client. Constant communication and updates.   |
| Scope         | New project and client has no experience with such a project and as such may have difficulties pointing out what he wants | Scope creep could occur and affect development schedule.                               | C.         | Transparent communication with client on team's capabilities and progress. Change management .  |
| Manpower      | 4-man team, thus have limited manpower  | Will affect development progress if a team member is unavailable.                      | C          | Plan ahead with members being communicative about schedules. Compulsory weekly meetings & daily updates. Try to ensure that we can cover each other's work. |

# 06 SCHEDULE METRICS

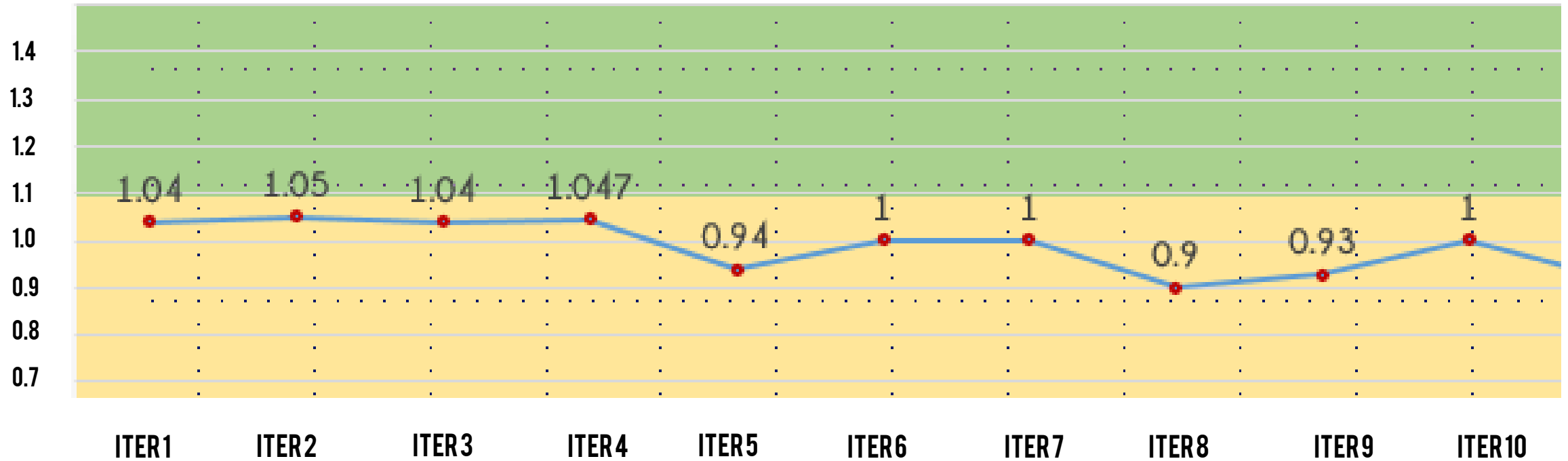


# 06 SCHEDULE METRICS

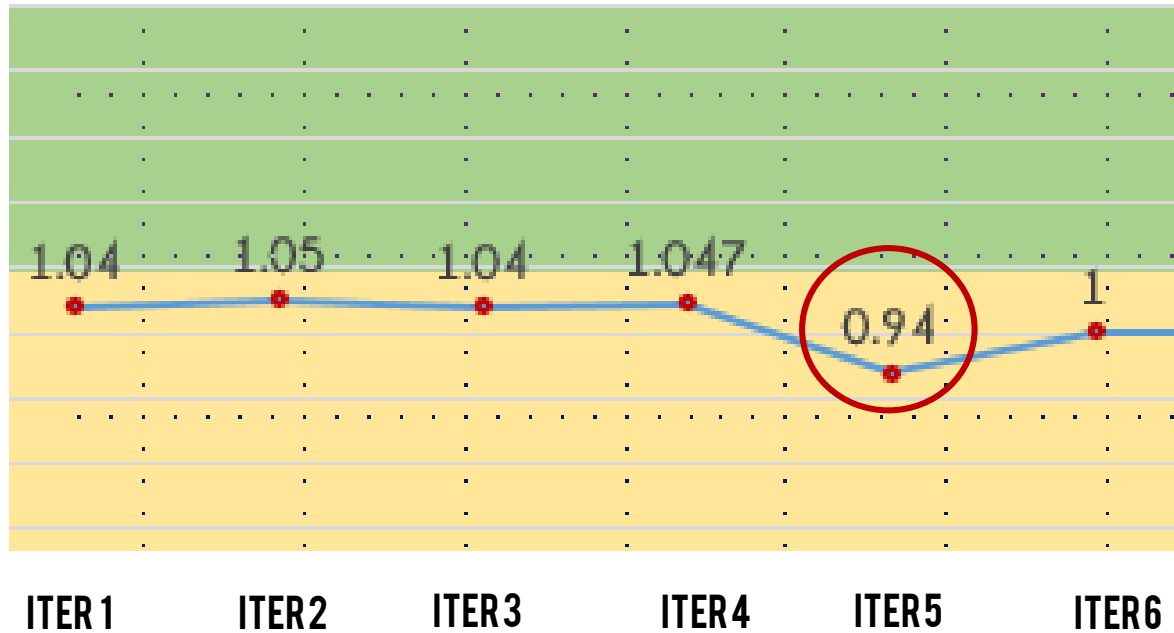


- Estimated/Actual days – **12/9**
- Ended iteration early due to lack of input from client's side
- Tasks were dependent on input.
- Change schedule & shift non-dependent functions forward to prevent further delay

# 06 TASK METRICS

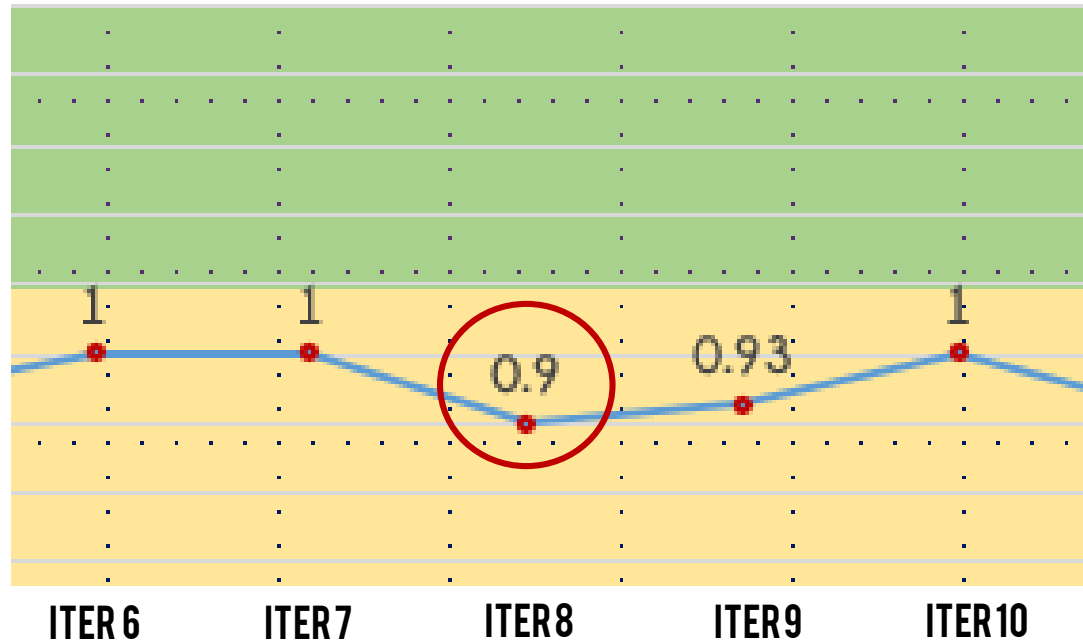


# 06 TASK METRICS



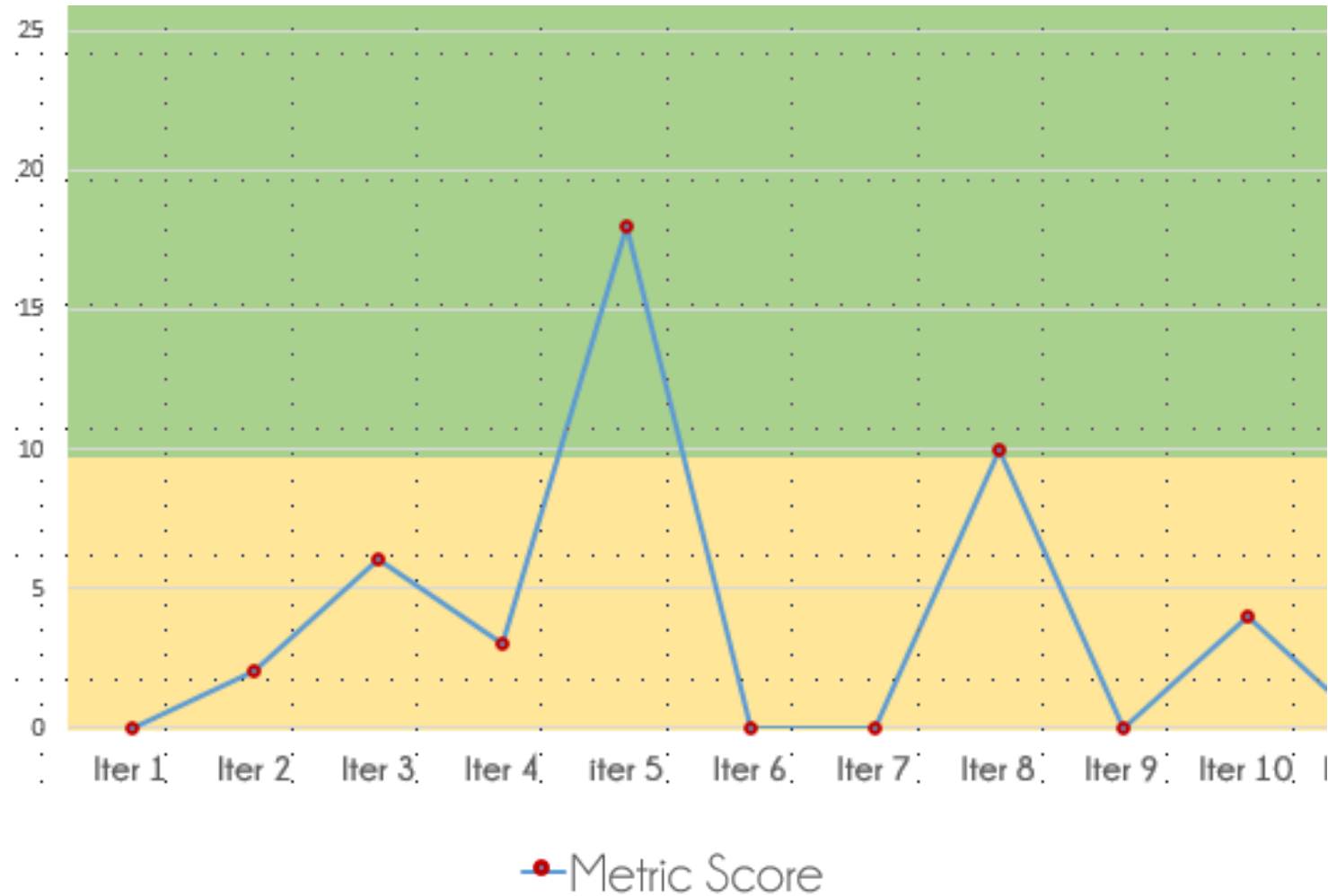
- Under-estimation of hours in tasks for the Email Access Code feature in Notification module
- Use cases for Email Access Codes were added after discussion with sponsor
- Action: Re-estimated tasks for future iterations. 1 buffer day used.

# 06 TASK METRICS



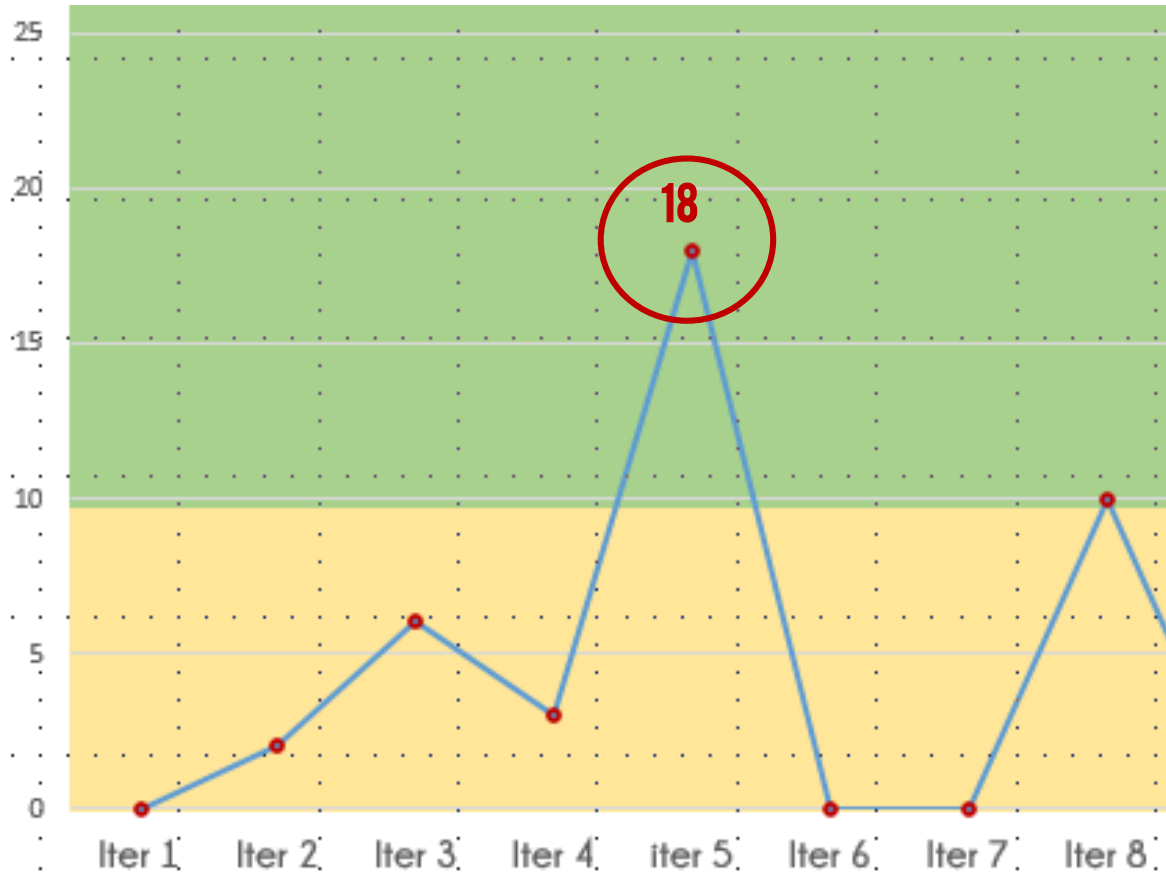
- Under-estimation of hours in tasks for PDF generation
- Student report required thought into designing report generation logic and Student report has many complex elements.
- Action: Re-estimated tasks for future iterations.

# 06 BUG METRICS



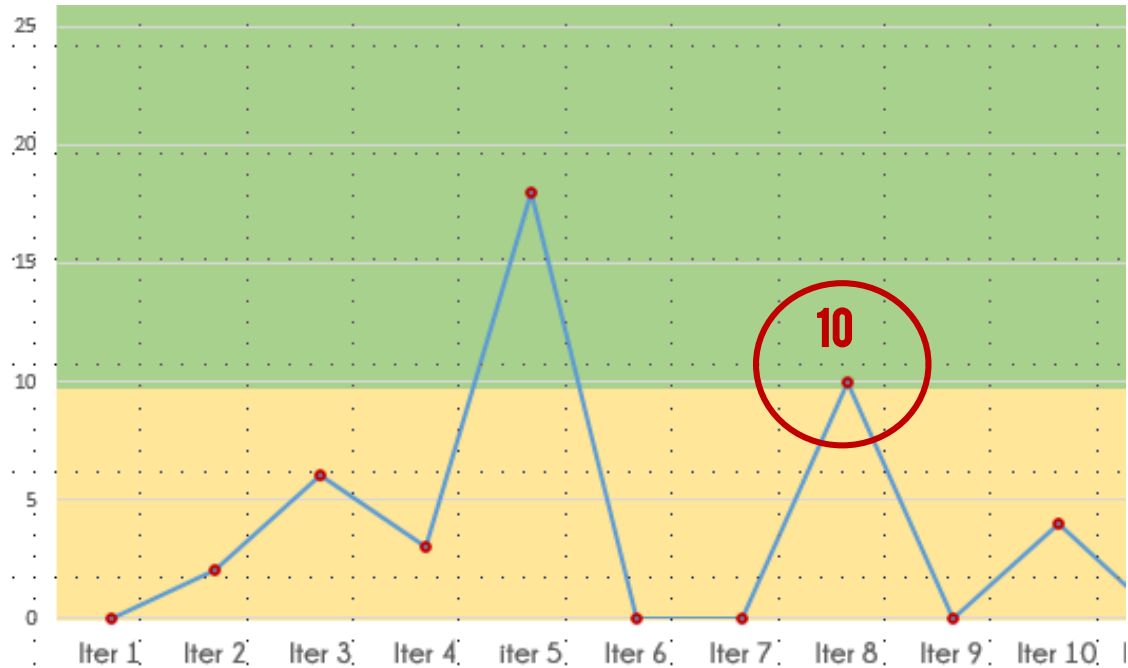


# 06 BUG METRICS



- Failed to send codes accurately to different types of students
- Unable to link access code in Starteur to email generated in Starteur for Educators
- Action: Stopped current development and resolved bugs immediately
- 1 buffer day taken up to resolve bugs

# 06 BUG METRICS



- Implementation of download individual student report
- Alignment of elements in individual student reports and data in pdf generation.
- Action: Stopped current development and resolved bugs immediately
- 1 buffer day taken up to resolve bugs

07

## REFLECTIONS

Team. Individual. Client

# 07 TEAM

## What we have done well?



- Focused on providing convenience & ease to end-users so they found that the functions were useful and easy to use.
- Kept in close & constant contact with end-users.
- Communication with client & professor. We highlighted possible situations that will crop up and kept them updated throughout.

## What can we do better?



“It is important to always have PLAN B & C.”  
In a project, anything & everything can affect your project as such, it is important to be adaptable & flexible.

# 07 INDIVIDUAL



## PROJECT MANAGER

As a Project Manager, I have learnt how to manage client's expectations and the team's capabilities. I have also learnt how to embrace sudden situations and changes during the project and the importance of communication and commitment.



## SECONDARY DEVELOPER

I have learnt the importance of constant updating my team and client on the progress and to communicate any difficulties I may face during development. We can always be open to seek help from others and thus, it will always facilitate the learning experience.

# 07 INDIVIDUAL



## FRONT-END DEVELOPER

Through this journey, I have learnt the importance of accepting feedback from relevant stakeholders. In addition, I have also learnt how to voice my opinions out. I hope to create an application that end-users find intuitive to use.



## LEAD DEVELOPER

I have learnt how to work effectively with others. For this project, we are developing in parallel with client's team. Thus, it is imperative for us to be on the same page clear on what each other is doing in order to minimise conflicts and work together effectively

# 07 CLIENT



Mr Rusydi Khairul  
Co-founder & CEO, Reactor

“The team displayed professionalism consistently throughout all client meetings and discussions. I also appreciate that they made relevant counter-proposals, and we discussed various scenarios and business cases that I may not have previously considered.”