

# AI PROJECT LOGBOOK

## Resource for Students

*(Adapted from “IBM EdTech Youth Challenge – Project Logbook” developed by IBM in collaboration with Macquarie University, Australia and Australian Museum)*

### KEY PARTNERS



### INDIA IMPLEMENTATION PARTNERS



### GLOBAL PARTNERS



# AI Project Logbook

**PROJECT NAME:** HR Analytics

**SCHOOL NAME:** Samashti International School

**YEAR/CLASS:** \_\_\_\_\_

**TEACHER NAME:** \_\_\_\_\_

**TEACHER EMAIL:** \_\_\_\_\_

## TEAM MEMBER NAMES AND GRADES:

1. Radha Katralapalli
2. Annapurna Vegesna
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

**Note:** Add more rows if there are more members in your team

# 1. Introduction

This document is your **Project Logbook**, and it will be where you record your ideas, thoughts and answers as you work to solve a local problem using AI.

Make a copy of the document in your shared drive and work through it digitally with your team. You can also print a copy of the document and submit a scanned copy once you have completed the Project Logbook. Feel free to add pages and any other supporting material to this document.

Refer to the **AI Project Guide** for more details about what to do at each step of your project.

## 2. Team Roles

### 2.1 Who is in your team and what are their roles?

Role	Role description	Team Member Name
- Project leader - Information researcher - Tester		Radha K
- Data expert - Designer - Prototype builder/coder - Marketing / Communications leader		Annapurna Vegesna

## 2.2 Project plan

The following table is a guide for your project plan. You may use this or create your own version using a spreadsheet which you can paste into this section. You can expand the 'Notes' section to add reminders, things that you need to follow up on, problems that need to be fixed urgently, etc.

Phase	Task	Planned start date	Planned end date	Planned duration (hours, minutes)	Actual start date	Actual end date	Actual duration (hours, minutes)	Who is responsible	Notes/Remarks
Preparing for the project	Coursework, readings	23/May/2021	23/May/2021	3 hrs	23/May/2021	23/May/2021	4 hrs	Radha K Annapurna V	
	Set up a team folder on a shared drive	23/May/2021	23/May/2021	1 hr	23/May/2021	23/May/2021	1 hr	Annapurna V	
Defining the problem	Background reading	24/May/2021	24/May/2021	1 hr	24/May/2021	24/May/2021	1 hr	Radha K	
	Research issues in our community	24/May/2021	24/May/2021	4 hrs	24/May/2021	24/May/2021	4 hrs	Radha K	
	Team meeting to discuss issues and select an issue for the project	24/May/2021	24/May/2021	2 hrs	24/May/2021	24/May/2021	2 hrs	Radha K	
	Complete section 3 of the Project Logbook	24/May/2021	25/May/2021	2 hrs	24/May/2021	25/May/2021	2 hrs	Team Members	
	Rate yourselves	25/May/2021	25/May/2021	1 hr	25/May/2021	25/May/2021	1 hr	Team Members	
Understanding the users	Identify users	24/May/2021	24/May/2021	1 hr	24/May/2021	24/May/2021	1 hr	Annapurna V	
	Meeting with users to observe them	25/May/2021	25/May/2021	1 hrs	25/May/2021	25/May/2021	1 hrs	Annapurna V	
	Interview with user (1)	25/May/2021	25/May/2021	1 hr	25/May/2021	25/May/2021	1 hr	Annapurna V	
	Interview with user (2), etc...	25/May/2021	25/May/2021	1 hr	25/May/2021	25/May/2021	1 hr	Annapurna V	
	Complete section 4 of the Project Logbook	26/May/2021	26/May/2021	1 hr	26/May/2021	26/May/2021	1 hr	Team Member	
	Rate yourselves	26/May/2021	26/May/2021	1 hr	26/May/2021	26/May/2021	1 hr	Team Member	

<b>Brainstorming</b>	Team meeting to generate ideas for a solution	26/May/2021	26/May/2021	4 hrs	26/May/2021	26/May/2021	4 hrs	Radha K	
	Complete section 5 of the Project Logbook	26/May/2021	26/May/2021	1 hr	26/May/2021	26/May/2021	1 hr	Team Members	
	Rate yourselves	26/May/2021	26/May/2021	1 hr	26/May/2021	26/May/2021	1 hr	Team Members	
<b>Designing your solution</b>	Team meeting to design the solution	27/May/2021	27/May/2021	2 hrs	27/May/2021	27/May/2021	2 hrs	Annapurna V	
	Complete section 6 of the logbook	27/May/2021	27/May/2021	1 hr	27/May/2021	27/May/2021	1 hr	Team Members	
	Rate yourselves	27/May/2021	27/May/2021	1 hr	27/May/2021	27/May/2021	1 hr	Team Members	
<b>Collecting and preparing data</b>	Team meeting to discuss data requirements	27/May/2021	27/May/2021	2 hrs	27/May/2021	27/May/2021	2 hrs	Annapurna V	
<b>Collecting and preparing data Prototyping</b>	Data collection	28/May/2021	28/May/2021	2 hrs	28/May/2021	28/May/2021	2 hrs	Annapurna V	
	Data preparation and labelling	28/May/2021	28/May/2021	2 hrs	28/May/2021	28/May/2021	2 hrs	Annapurna V	
	Complete Section 6 of the Project Logbook	28/May/2021	28/May/2021	1 hr	28/May/2021	28/May/2021	1 hr	Team Members	
	Team meeting to plan prototyping phase	28/May/2021	28/May/2021	1 hr	28/May/2021	28/May/2021	1 hr	Radha K	
<b>Prototyping Testing</b>	Train your model with input dataset	28/May/2021	28/May/2021	4 hrs	28/May/2021	28/May/2021	4 hrs	Annapurna V Radha K	
	Test your model and keep training with more data until you think your model is accurate	29/May/2021	29/May/2021	2 hrs	29/May/2021	29/May/2021	2 hrs	Annapurna V Radha K	
	Write a program to initiate actions based on the result of your model	29/May/2021	29/May/2021	2 hrs	29/May/2021	29/May/2021	2 hrs	Annapurna V	
	Complete section 8 of	29/May/2021	29/May/2021	1 hr	29/May/2021	29/May/2021	1 hr	Team Member	

	the Project Logbook								
	Rate yourselves	29/May/2021	29/May/2021	1 hr	29/May/2021	29/May/2021	1 hr	Team Member	
	Team meeting to discuss testing plan	29/May/2021	29/May/2021	2 hrs	29/May/2021	29/May/2021	2 hrs	Team Member	
<b>Testing Creating the video</b>	Invite users to test your prototype								
	Conduct testing with users								
	Complete section 9 of the Project Logbook								
	Rate yourselves								
	Team meeting to discuss video creation								
	Write your script								
	Film your video								
	Edit your video								
<b>Completing the logbook</b>	Reflect on the project with your team	30/May/2021	30/May/2021	2 hrs	30/May/2021	30/May/2021	2 hrs	Team Member	
	Complete sections 10 and 11 of the Project Logbook	30/May/2021	30/May/2021	1 hrs	30/May/2021	30/May/2021	1 hrs	Team Member	
	Review your Project logbook and video	30/May/2021	30/May/2021	2 hrs	30/May/2021	30/May/2021	2 hrs	Team Member	
<b>Submission</b>	Submit your entries on the IBM	30/May/2021	30/May/2021	1 hrs	30/May/2021	30/May/2021	1 hrs	Team Member	

## 2.3 Communications plan

Will you meet face-to-face, online or a mixture of each to communicate?  
Online

How often will you come together to share your progress?

1 time

Who will set up online documents and ensure that everyone is contributing?

Google document

What tools will you use for communication?

G meet

## **2.4 Team meeting minutes (create one for each meeting held)**

Date of meeting: 23-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: Action plan for project

Items discussed:

1. Course work readings
2. Setup up a team folder on Google drive
3. Project timeline scheduled

Things to do (what, by whom, by when)

1. Setup up a team folder on Google drive
2. Project logbook update
- 3.

Date of meeting: 24-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: Defining the problem

Items discussed:

1. Back ground reading
2. Research issues in our community
3. Issues discussed

Things to do (what, by whom, by when)

1. Project logbook update
2. Local Issues listed
3. Issue to focus on
4. Identify Users

Date of meeting: 25-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: User requirements

Items discussed:

1. Meeting with User
2. Points to be discuss with user
- 3.

Things to do (what, by whom, by when)

1. Project logbook update
2. discussion with user
3. Understanding the requirement

Date of meeting: 26-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: Brainstorming

Items discussed:

1. Ideas for solutions to be discussed
- 2.
- 3.

Things to do (what, by whom, by when)

1. Project logbook update
2. Generation of ideas and collect the relevant data
- 3.

Date of meeting: 27-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: Designing the solution

Items discussed:

1. Design solution
2. Data collection
- 3.

Things to do (what, by whom, by when)

1. Project logbook update
2. Designing the solutions
3. Collection of data

Date of meeting: 28-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: Data prototyping

Items discussed:

1. Collection data



2. Designing prototype

3.

Things to do (what, by whom, by when)

1. Project logbook update
2. Collection of data from reliable sources
3. Data preparation and labelling

Date of meeting: 29-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: Prototype testing

Items discussed:

1. Testing prototype
2. Training the model
- 3.

Things to do (what, by whom, by when)

1. Project logbook update
2. Refining prototype as per user requirements
3. Training and testing the model with various dataset

Date of meeting: 30-05-2021

Who attended: Radha K, Annapurna V

Who wasn't able to attend: -

Purpose of meeting: Reflection of project and completion

Items discussed:

1. Final prototype testing
2. Completion of project
- 3.

Things to do (what, by whom, by when)

1. Project logbook update.
2. Final prototype testing.
3. Reflect on the project with the team.

## 3. Problem Definition

### 3.1 List important local issues faced by your school or community

HR Manager is facing a problem in Identifying the right people for promotion.

### 3.2 Which issues matter to you and why?

-Identify a set of employees based on recommendations/ past performance.  
-Selected employees go through a separate training and evaluation program and based on various factors the employee gets promotion.

### 3.3 Which issue will you focus on?

Identifying the eligible candidates at a particular checkpoint so that they can expedite the entire promotion cycle

### 3.4 Write your team's problem statement in the format below.

How can we help HR Manager find a way to identify an eligible candidate at a particular checkpoint recommended by an AI model so that they can expedite the entire promotion cycle.

**Rate yourself** 3

#### **Problem Definition**

1 point - A local problem is described

2 points - A local problem which has not been fully solved before is described.

3 points - A local problem which has not been fully solved before is explained in detail with supporting research.

## 4. The Users

### 4.1 Who are the users and how are they affected by the problem?

Company and the HR Manager are affected due to the delay of a large manual process.

### 4.2 What have you actually observed about the users and how the problem affects them?

The collection, processing and analysis of data has been largely manual, and given the nature of human resources dynamics and HR KPIs, the approach has been constraining HR Manager.

#### 4.3 Record your interview questions here as well as responses from users.

Q. How are you identifying a set of employees for promotion in your organisation?

A. Based on recommendations/ past performance

Q. What is the further process for selected employees to go?

A. Separate training and evaluation program

Q. How are these programs based?

A. Based on the required skill of each of 9 broad verticals across the organisation.

Q. On what basis will the respective manager give recommendations?

A. Awards won, previous year rating, KIP>60 and experience of the employee will be taken into consideration while recommending.

Q. What are the problems are you facing when manually analyzing the data?

A. The final promotions are only announced after the evaluation and this leads to delay in transition to their new roles.

Q. What are the expectations from the model?

A. Helps in deciding the potential employees who are eligible for the promotion in a timely manner so that transition to a new role will be quicker.

Q. What is the authenticity of the manual process of deciding promotions?

A. Based on previous year rating, recommendations and the evaluations, utmost care is taken for no human errors and biased decisions.

#### 4.4 Empathy Map

Map what the users say, think, do and feel about the problem in this table

<b>What our users are saying</b>  <b>Training and evaluation</b> <b>Selection based on recommendations / performance</b> <b>Unbiased</b>	<b>What our users thinking</b>  <b>A solid model which helps them to quickly decide the promotions for a smooth transition into new roles.</b>  <b>Manual operations are reduced.</b>
<b>What our users are doing</b>  <b>Manually collecting recommendations for promotions.</b>  <b>Manually analysing for promotions.</b>	<b>How our users feel</b>  <b>A model helpful for the whole process to be quick and unbiased.</b>

#### 4.5 What are the usual steps that users currently take related to the problem and where are the difficulties?

1. Identifying the right people for promotion and prepare them in time.
2. They first identify a set of employees based on recommendations/ past performance.
3. Selected employees go through the separate training and evaluation program for each vertical. These programs are based on the required skill of each vertical
4. At the end of the program, based on various factors such as training performance, KPI completion (only employees with KPIs completed greater than 60% are considered) etc., employee gets promotion
5. The final promotions are only announced after the evaluation and this leads to delay in transition to their new roles
6. Company maintains multiple attributes around the Employee's past and current performance along with demographics.
7. Company is facing difficulties at identifying the eligible candidates at a particular checkpoint so that they can expedite the entire promotion cycle
- 8.
- 9.
- 10.

#### 4.6 Write your team's problem statement in the format below.

Company and the HR Managers are experiencing issues with identifying the right people for promotion today because of collection, processing and analysis of data is largely manual.

Rate yourself **3**

##### The Users

- 1 point - The user group is described but it is unclear how they are affected by the problem.
- 2 points - Understanding of the user group is evidenced by completion of most of the steps in this section.
- 3 points - Understanding of the user group is evidenced by completion of most of the steps in this section and thorough investigation

## 5. Brainstorming

### 5.1 Ideas

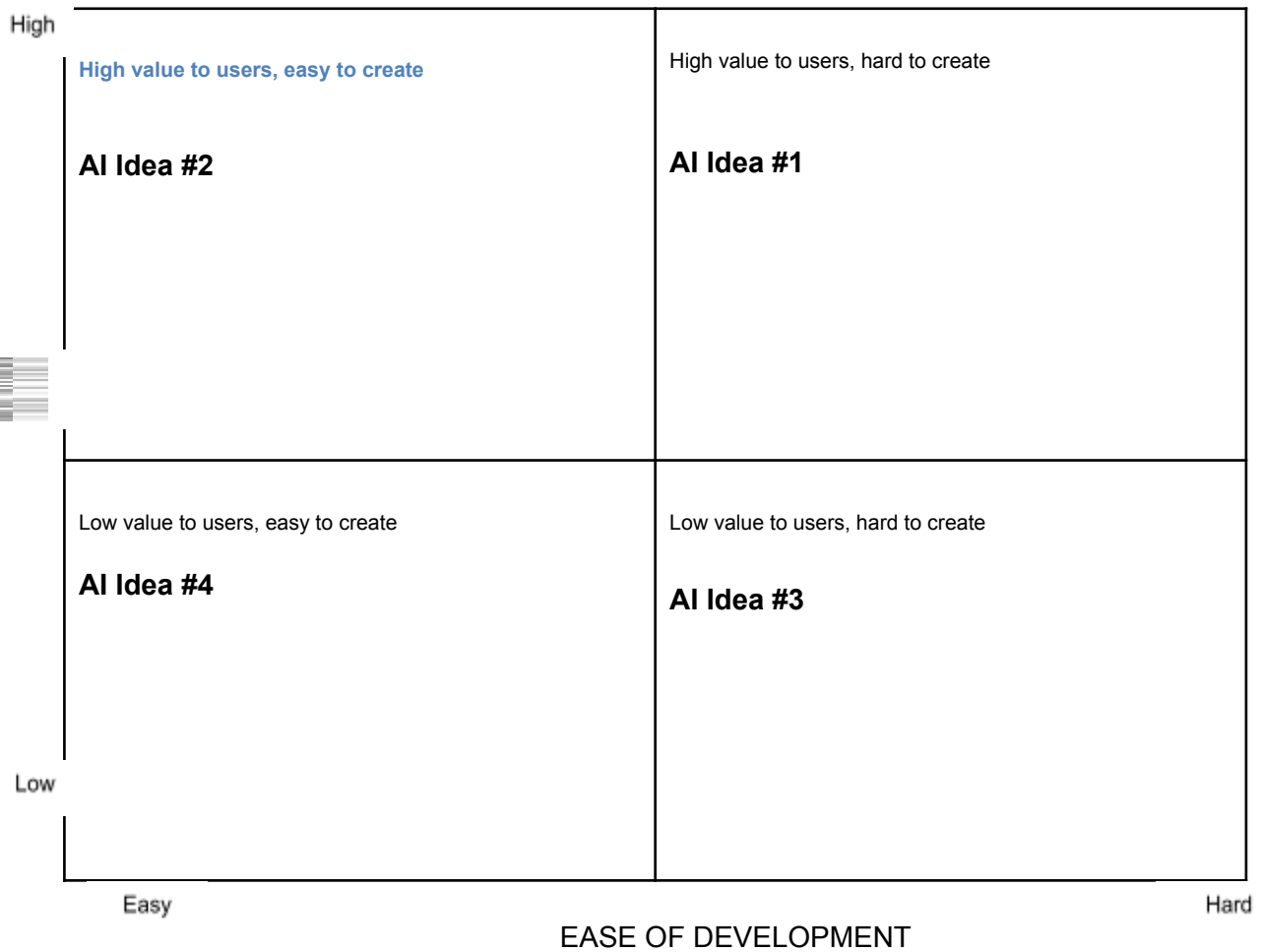
How might you use the power of AI/machine learning to solve the users' problem by increasing their knowledge or improving their skills?

AI Idea #1	ML helps quick analysis of large amounts of data.
AI Idea #2	AI can predict suitable employee for promotion based on various attributes of data
AI Idea #3	AI can help in unbiased selection of suitable employees for promotion.
AI Idea #4	Using ML, there will not be scope for human errors in the promotion cycle.
AI Idea #5	Using AI leads to higher efficiency and better results overall.



## 5.2 Priority Grid

Evaluate your five AI ideas based on value to users and ease of creation and implementation.



### 5.3 Based on the priority grid, which AI solution is the best fit for your users and for your team to create and implement?

Briefly summarize the idea for your solution in a few sentences and be sure to identify the tool that you will use.

AI can predict suitable employees for promotion based on various attributes of data.

Employees go through a separate training and evaluation program for each of the 9 broad verticals across the organisation. These programs are based on the required skill of each vertical. At the end of the program, based on various factors such as training performance, KPI completion (only employees with KPIs completed greater than 60% are considered) etc., employee gets a promotion. The final promotions are only announced after the evaluation and this leads to delay in transition to their new roles. Hence, the company needs our help in identifying the eligible candidates at a particular checkpoint so that they can expedite the entire promotion cycle.

#### Rate yourself **3**

##### Brainstorming

1 point – A brainstorming session was conducted. A solution was selected.

2 points - A brainstorming session was conducted using creative and critical thinking. A solution was selected with supporting arguments in this section

3 points - A brainstorming session was conducted using creative and critical thinking. A compelling solution was selected with supporting arguments in this section.

## 6. Design

### 6.1 What are the steps that users will now do using your AI solution to address the problem?

1. Performances of individual employees are recorded by the HR Manager during the training and evaluation process.
2. Criterias and conditions are feeded to the AI Model such as training performance, KPI completion(only employees with KPIs completed greater than 60% are considered), length of service, awards won etc.
3. During the evaluation process, the potential promoters are predicted by the AI Model at a checkpoint based on the criterias and the demographics.
4. Based on predictions by the AI Model, HR Manager expedited the entire promotion cycle.
5. HR Manager prepares for employee transition to their new roles based on the predictions.
6. The HR Manager will be able to announce the timely promotions after the evaluation process.
- 7.
- 8.
- 9.
- 10.

Rate yourself

3

#### Design

- 1 point – The use of AI is a good fit for the solution.
- 2 points - The use of AI is a good fit for the solution and there is some documentation about how it meets the needs of users
- 3 points - The use of AI is a good fit for the solution. The new user experience is clearly documented showing how users will be better served than they are today.

## 7. Data

### 7.1 What data will you need to train your AI solution?

Dataset Description	
Variable	Definition
employee_id	Unique ID for employee
department	Department of employee
region	Region of employment (unordered)
education	Education Level
gender	Gender of Employee
recruitment_channel	Channel of recruitment for employee
no_of_trainings	number of other training completed in previous year on soft skills, technical skills etc.
age	Age of Employee
previous_year_rating	Employee Rating for the previous year
length_of_service	Length of service in years
KPIs_met >60%	If Percent of KPIs(Key performance Indicators)>60% then 1 else 0
awards_won?	If awards won during previous year then 1 else 0
avg_training_score	Average score in current training evaluations

### 7.2 Where or how will you source your data?

Data needed	Where will the data come from?	Who owns the data?	Do you have permission to use the data?	Ethical considerations
Have	Online Data sets	Kaggle site	Yes	Open Source dataset
Want/Need	Data from the client	Client	Yes	Shared by the client
Nice to have	Balanced Dataset	Kaggle site	Yes	Open Source dataset

#### Rate yourself **3**

##### Data

1 point – Relevant data to train the AI model have been identified as well as how the data will be sourced or collected.

2 points - Relevant data to train the AI model have been identified as well as how the data will be sourced or collected. There is evidence that the dataset is balanced.

3 points - Relevant data to train the AI model have been identified as well as how the data will be sourced or collected. There is evidence that the dataset is balanced, and that safety and privacy have been considered.

## 8. Prototype

### 8.1 Which AI tool(s) will you use to build your prototype?

Orange Data Mining ( <https://orangedatamining.com/> )

### 8.2 Which AI tool(s) will you use to build your solution?

Orange Data Mining ( <https://orangedatamining.com/> )

### 8.3 What decisions or outputs will your tool generate and what further action needs to be taken after a decision is made?

A potential promotee at checkpoint will be predicted for promotion or not after the evaluation process and based on the prediction the HR Manager expedite the entire promotion cycle.

Rate yourself **3**

#### Prototype

1 point – A concept for a prototype shows how the AI model will work.

2 points - A prototype for the solution has been created and trained.

3 points - A prototype for the solution has been created and successfully trained to meet users' requirements.

## 9. Testing

### 9.1 Who are the users who tested the prototype?

HR Managers,  
Other Managers at the client  
Model Tester

### 9.2 List your observations of your users as they tested your solution.

- Able to predict promotions of employees who are under training.
- Organisation of the data is easy when compared to manual processes.
- Need to include more visualization reports.
- Auto generation of promotional documentation.
- Employee wise performance report during training process.

### 9.3 Complete the user feedback grid

<p>What works</p> <p>Able to predict promotions of employees who are under training.</p>	<p>What needs to change</p> <p>Need to include more visualization reports.</p>
<p>Questions?</p> <p>Is it possible to auto generate documentation for promotional employees?</p>	<p>Ideas</p> <p>Employee wise performance report during training process.</p>

#### 9.4 Refining the prototype: Based on user testing, what needs to be acted on now so that the prototype can be used?

- Included Visualization graphs as per user requirements along with a performance report of employees..

#### 9.5 What improvements can be made later?

Auto generation of promotional documentation.

Rate yourself

3

#### Testing

1 point – A concept for a prototype shows how it will be tested.

2 points - A prototype has been tested with users and improvements have been identified to meet user requirements.

3 points - A prototype has been tested with a fair representation of users and all tasks in this section have been completed.



## 10. Team collaboration

### 10.1 How did you actively work with others in your team and with stakeholders?

- We could actively work with other team members by collaborating online, collecting user requirements of the client, conducted brainstorming sessions, defining problem statement, defining prototype, data acquisition, data exploration, getting user's feedback, reviewing the state holder requirements, designing the model, training and test model, evaluated model and refined prototype considering user requirements.

Rate yourself

#### Team collaboration

- 1 point – There is some evidence of team interactions among peers and stakeholders.  
2 points - Team collaboration among peers and stakeholders is clearly documented in this section.  
3 points - Effective team collaboration and communication among peers and stakeholders is clearly documented in this section.

# 11. Individual learning reflection

## 11.1. Team Reflections

A good way to identify what you have learned is to ask yourself what surprised you during the project. List the things that surprised you and any other thoughts you might have on issues in your local community.

**Team member name:**

Annapurna V

**Team member name:**

Radha K

**Team member name:**

**Team member name:**

**Team member name:**

**Team member name:**

**Note:** Add more boxes if there are more members in your team

**Rate yourself** 3

#### **Individual Learning Reflection**

- 1 point – Some team members present an account of their learning during the project.
- 2 points - Each team presents an account of their learning during the project.
- 3 points - Each team member presents a reflective and insightful account of their learning during the project.

## 12. Video link

**Enter the URL of your team video: -**

**Enter the password (if any):**

# Appendix

## Recommended Assessment Rubric (for Teachers)

### LOGBOOK AND VIDEO CONTENT

Steps	3 points	2 points	1 point	Points Given
<a href="#">Problem definition</a>	A local problem which has not been fully solved before is explained in detail with supporting research.	A local problem which has not been fully solved before is described.	A local problem is described	
<a href="#">The Users</a>	Understanding of the user group is evidenced by completion of all of the steps in <i>Section 4 The Users</i> and thorough investigation.	Understanding of the user group is evidenced by completion of most of the steps in <i>Section 4 The Users</i> .	The user group is described but it is unclear how they are affected by the problem.	
<a href="#">Brainstorming</a>	A brainstorming session was conducted using creative and critical thinking. A compelling solution was selected with supporting arguments from <i>Section 5 Brainstorming</i> .	A brainstorming session was conducted using creative and critical thinking. A solution was selected with supporting arguments in <i>Section 5 Brainstorming</i> .	A brainstorming session was conducted. A solution was selected.	
<a href="#">Design</a>	The use of AI is a good fit for the solution. The new user experience is clearly documented showing how users will be better served than they are today.	The use of AI is a good fit for the solution and there is some documentation about how it meets the needs of users.	The use of AI is a good fit for the solution.	
<a href="#">Data</a>	Relevant data to train the AI model have been identified as well as how the data will be sourced or collected. There is evidence that the dataset is balanced, and that safety and privacy have been considered.	Relevant data to train the AI model have been identified as well as how the data will be sourced or collected. There is evidence that the dataset is balanced.	Relevant data to train the AI model have been identified as well as how the data will be sourced or collected.	
<a href="#">Prototype</a>	A prototype for the solution has been created and successfully trained to meet users' requirements.	A prototype for the solution has been created and trained.	A concept for a prototype shows how the AI model will work	
<a href="#">Testing</a>	A prototype has been tested with a fair representation of users and all tasks in <i>Section 9 Testing</i> have been completed.	A prototype has been tested with users and improvements have been identified to meet user requirements.	A concept for a prototype shows how it will be tested.	
<a href="#">Team collaboration</a>	Effective team collaboration and communication among peers and stakeholders is clearly documented in <i>Section 10 Team collaboration</i> .	Team collaboration among peers and stakeholders is clearly documented in <i>Section 10 Team collaboration</i> .	There is some evidence of team interactions among peers and stakeholders.	
<a href="#">Individual learning</a>	Each team member presents a reflective and insightful account of their learning during the project.	Each team presents an account of their learning during the project.	Some team members present an account of their learning during the project.	
Total points				

## VIDEO PRESENTATION

Criteria		Points Given
		3 – excellent 2 – very good 1 – satisfactory
Communication	The video is well-paced and communicated, following a clear and logical sequence.	
Illustrative	Demonstrations and/or visuals are used to illustrate examples, where appropriate.	
Accurate language	The video presents accurate science and technology and uses appropriate language.	
Passion	The video demonstrates passion from team members about their chosen topic/idea.	
Sound and image quality	The video demonstrates good sound and image quality.	
Length	The content is presented in the video within a 3-minute timeframe.	
Total points		