

1XD3 Final Exam

Question 1



Persona: a student developer

Demographics:

Male, aged 20

First-year McMaster University student

Major in Computer Science

Behaviours:

meticulous at study

passionate at designing application

What are they looking for:

to be a good application designer

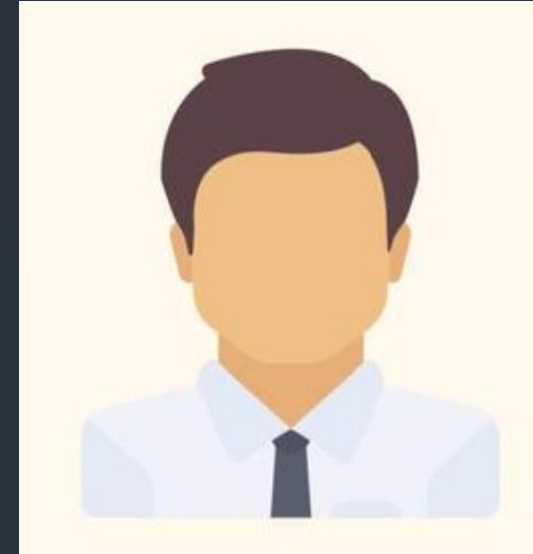
Looking for an easier way to collect and analyze the feedback of the user

Looking for a useful tool to help him create the action plan with the feedback he have

Stress Points:

Lack of the ability to communicate with others

There is no efficient way for him to collect the feedback.

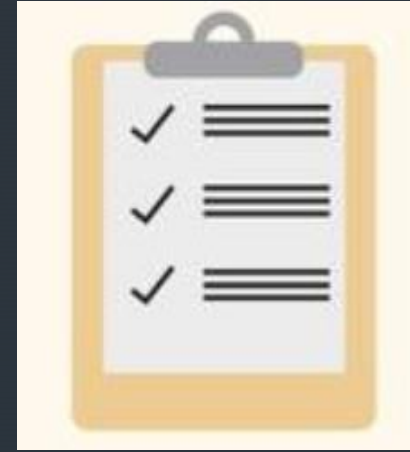


A story illustrating the problem

- John is a McMaster first-year student in the CS program. He use Elm to design applications in the 1XD3 course.
- One day his Lab TA asked everyone in the class to collect feedback on each one's project. But John was really Shy to ask the stranger for collecting feedback.
- Then he came up with a way that he can create a Google form to collect feedback which is a commonly known way for people to collect information nowadays. However, some strangers refused to scan the QR code or to click the link to get access to the Google form since they were worrying about privacy issues that some people with bad intentions would use the QR code or website with viruses to steal the user's information, which made John really distressed.
- He really needs to figure out a way that can make the other elm user provide feedback without using GoogleForm.



Paper Prototype



- Here is an example of collecting feedback on the project called CourseCatalog.

Click on “Gathering Feedback”

Feedback Gathering For Elm

FGE(Feedback Gathering For Elm) is an extension to <https://cs1xd3.online> to support the gathering of feedback and creating of action plans

Gathering Feedback

From here you can choose which elm module you want to be reviewed

CLICK ME 

Provide Feedback

Posting feedback for other students' elm projects. Remember that your review is very important to other Elm learners.

CLICK ME 

My Action Plan

Creating your action plan based on the feedback that you gathered from other students to make your project better

CLICK ME

CourseCatalogeParser

[Submit](#)
[Publish](#)
[Import](#)
[Version History](#)
[Shortcuts](#)
(last saved about 7 minutes ago)

```

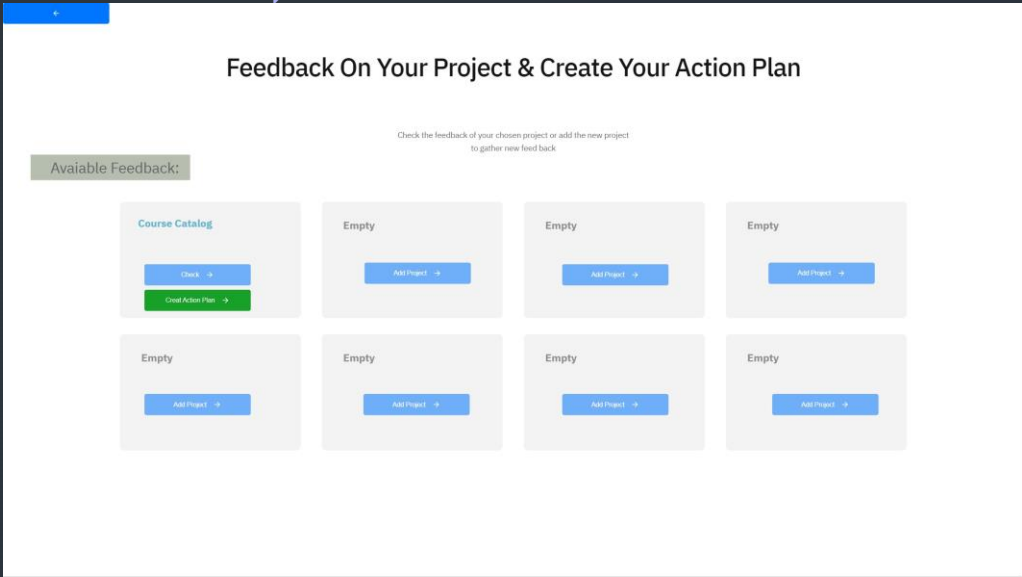
1 import Parser exposing (Parser, (|.), (|..))
2 import Set exposing (Set)
3
4
5 type alias Model =
6   { title : Float
7   , width : Int
8   , height : Int
9   , widgetModel : WidgetModel
10  , courses : List Course
11  , forTitle : List (String, List (String, List String))
12  , bubbles : List (String, Color, (Float, Float))
13  , lines : List (Shape Hug)
14  , hovering : Maybe String
15  , cliMap : Dict String Int
16  }
17
18 -- This comes from React Native Search for 3021/2022, adding 4200 as a full course
19 fallback = Set.fromList ["4200", "13C3", "1MD3", "2003", "2004", "2AC3", "2MA3", "3003", "3GC3", "3IR3", "3MI3", "3RA3", "3SH3", "3D3"]
20
21 initW = Widget.init 200 60 "gvgiug"
22
23 model0 : Model
24 model =
25   { title = 0
26   , hovering = Nothing
27   , width = 600
28   , height = 1004
29   , widgetModel = Tuple.first initW
30   , courses = Dict.values courses
31   , forTitle = Dict.values courses |> List.map chapTitle
32   , bubbles =
33     let
34       filt : String -> Bool -> List (String, Color)
35       filt year isFull =
36         allkeys |> List.filter ( \ (key,_) -> year == String.left 1 key
37                               && ( Set.member key fallback == isFull
38                               )
39     in
40     allkeys = List.indexedMap ( \ idx key -> (key, (String.right 1)map key) ) <| Dict.keys courses
41
42   }
43
44   }
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46   }
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96   }
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98   }
99
100  }
```

Course Code	Description
13C3	Discrete Mathematics for Computer Science
1MD3	Introduction to Computational Thinking
1MD3	Introduction to
2003	Discrete Mathematics for Computer Science
2004	Discrete Mathematics for Computer Science
2AC3	Discrete Mathematics for Computer Science
2MA3	Discrete Mathematics for Computer Science
2LC3	Discrete Mathematics for Computer Science
2DB3	Discrete Mathematics for Computer Science
2ME3	Discrete Mathematics for Computer Science
2XC3	Discrete Mathematics for Computer Science
3GC3	Discrete Mathematics for Computer Science
3MI3	Discrete Mathematics for Computer Science
3RA3	Discrete Mathematics for Computer Science
3SH3	Discrete Mathematics for Computer Science
3D3	Discrete Mathematics for Computer Science
3FP3	Discrete Mathematics for Computer Science
3NB3	Discrete Mathematics for Computer Science
3TB3	Discrete Mathematics for Computer Science
4HC3	Discrete Mathematics for Computer Science
4003	Discrete Mathematics for Computer Science
4XB3	Discrete Mathematics for Computer Science
4Z03	Discrete Mathematics for Computer Science
4AR3	Discrete Mathematics for Computer Science
4F03	Discrete Mathematics for Computer Science
4TE3	Discrete Mathematics for Computer Science
4TH3	Discrete Mathematics for Computer Science
4TI3	Discrete Mathematics for Computer Science

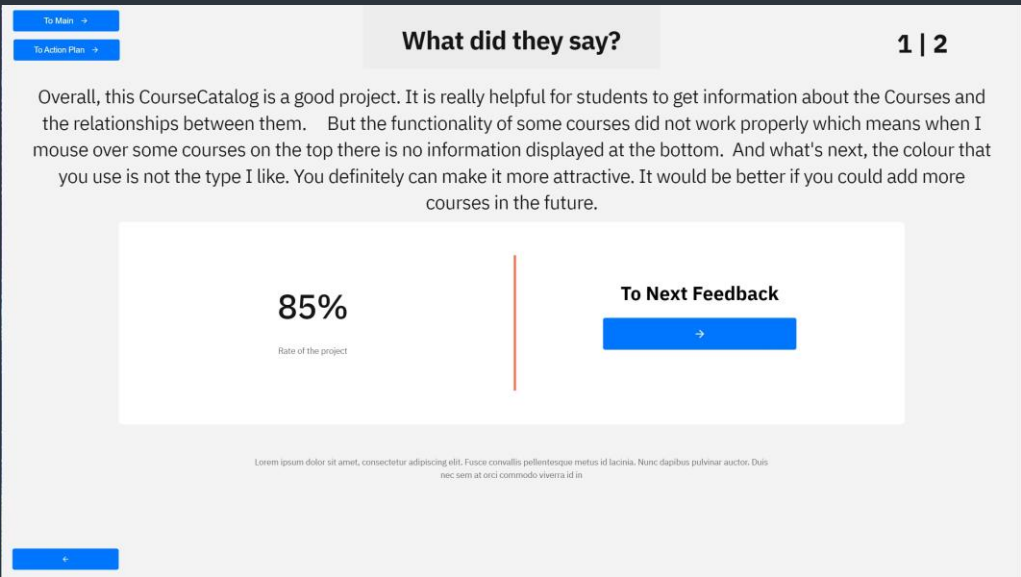
Posting This Project For Gathering Feedback

Posting This Project For Gathering Feedback

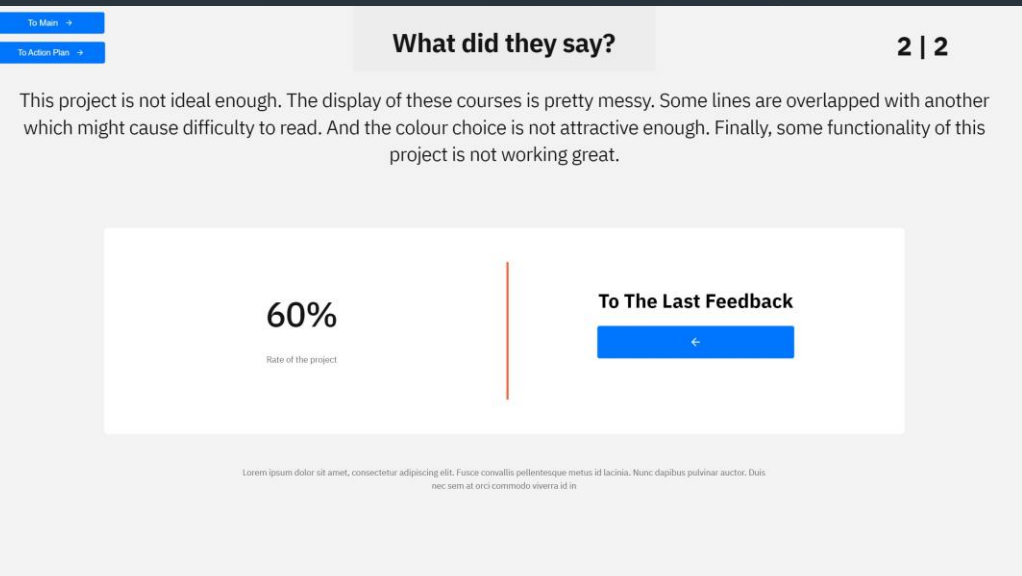
Check the current available feedback



Feedback 1/2



Feedback 2/2




Providing feedback (example of CourseCatalog)


Click on "Providing Feedback"


Choose one project you want to look into

Feedback Gathering For Elm

FGE(Feedback Gathering For Elm) is an extension to <https://cs1.xd3.online> to support the gathering of feedback and creating of action plans.

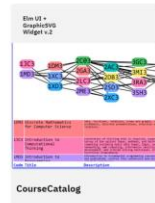

Gathering Feedback
From here you can choose which elm module you want to be reviewed.
[CLICK ME >](#)



Provide Feedback
Posting feedback for other students' elm projects. Remember that your review is very important to other Elm learners.
[CLICK ME >](#)



My Action Plan
Creating your action plan based on the feedback that you gathered from other students to make your project better.
[CLICK ME >](#)


Provide Feedback For These Projects

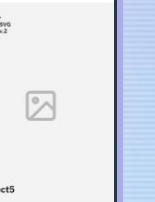
Here you can see all the elm project that is available to be reviewed.


Project1
[See More](#)


Project2
[See More](#)


Project3
[See More](#)


Project4
[See More](#)


Project5
[See More](#)

Write your feedback to this project

Rate this project

Writing Feedback

Project Name:

Link To The Project:

Please write your feedback here.....

[Learn More](#)

[Submit the feedback](#)

Thank you for leaving your valuable feedback

Please rate the project

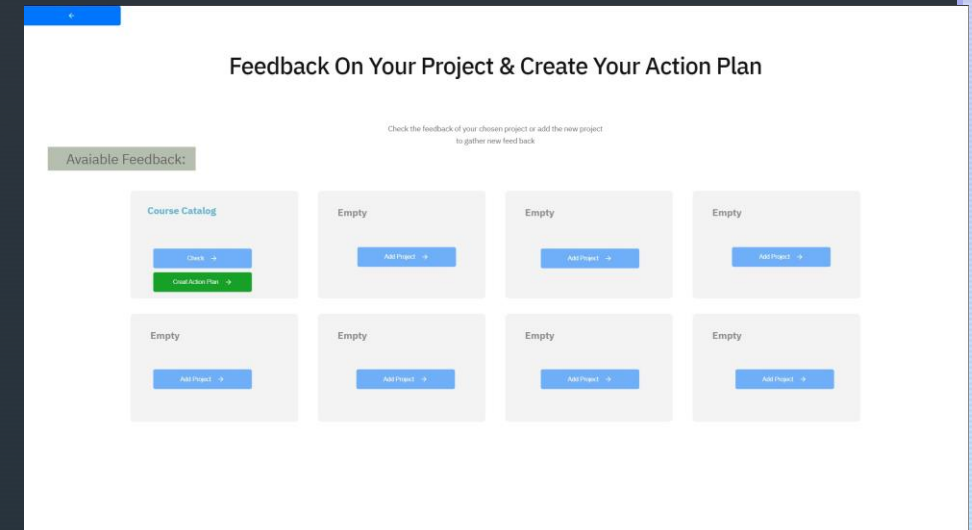
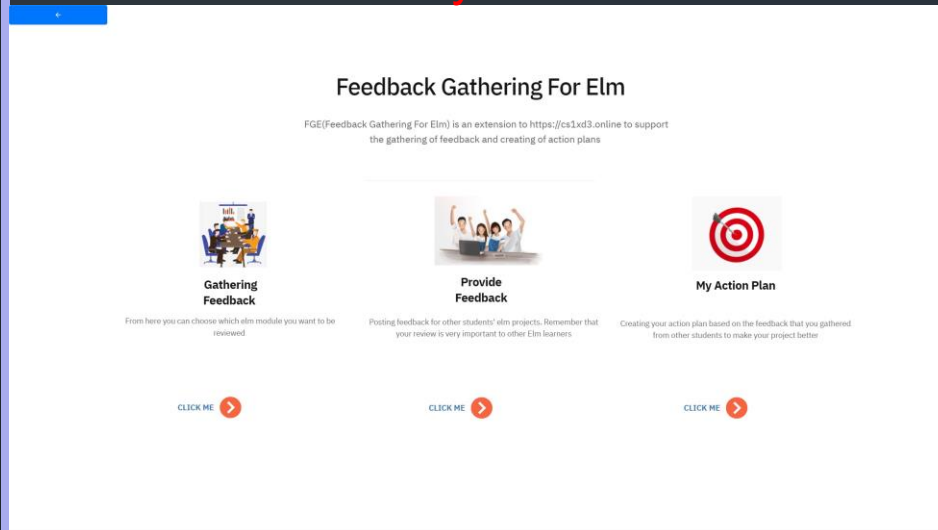
[provide feed back for another project](#)

[I am done, return to main page](#)

Creating action plan for course catalog

Click on “My Action Plan”

Choose or add the project to write an action plan



Writing the action plan based on the feedback you have

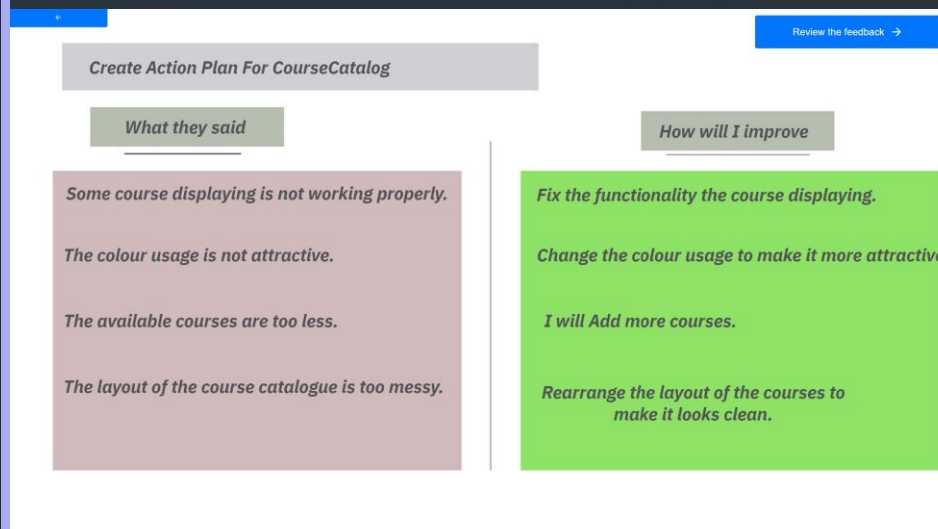
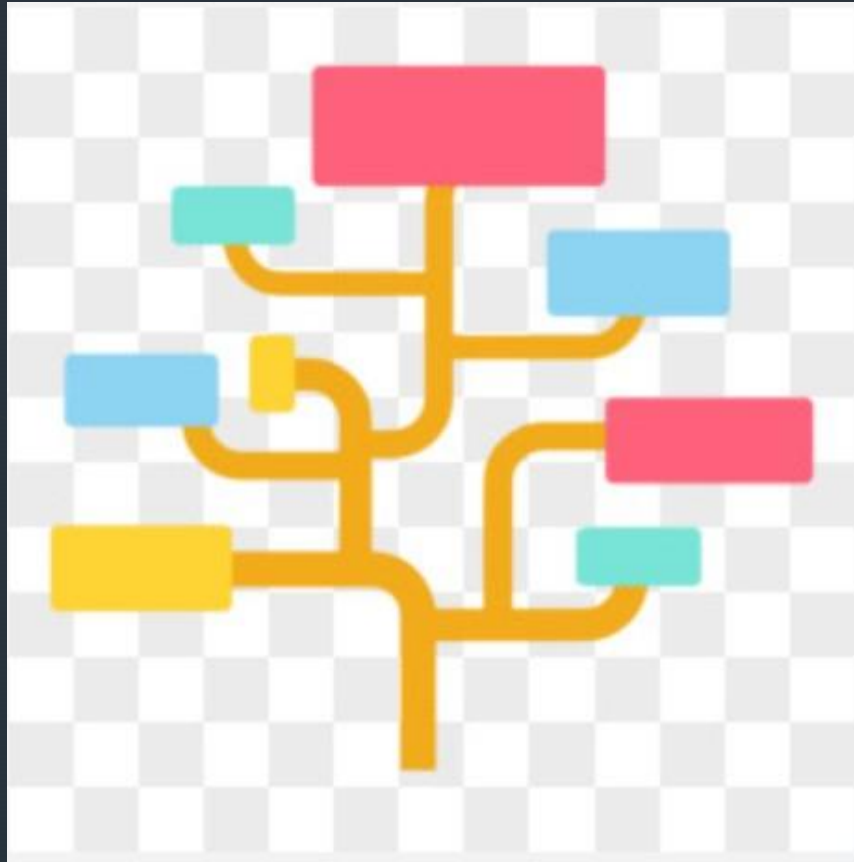
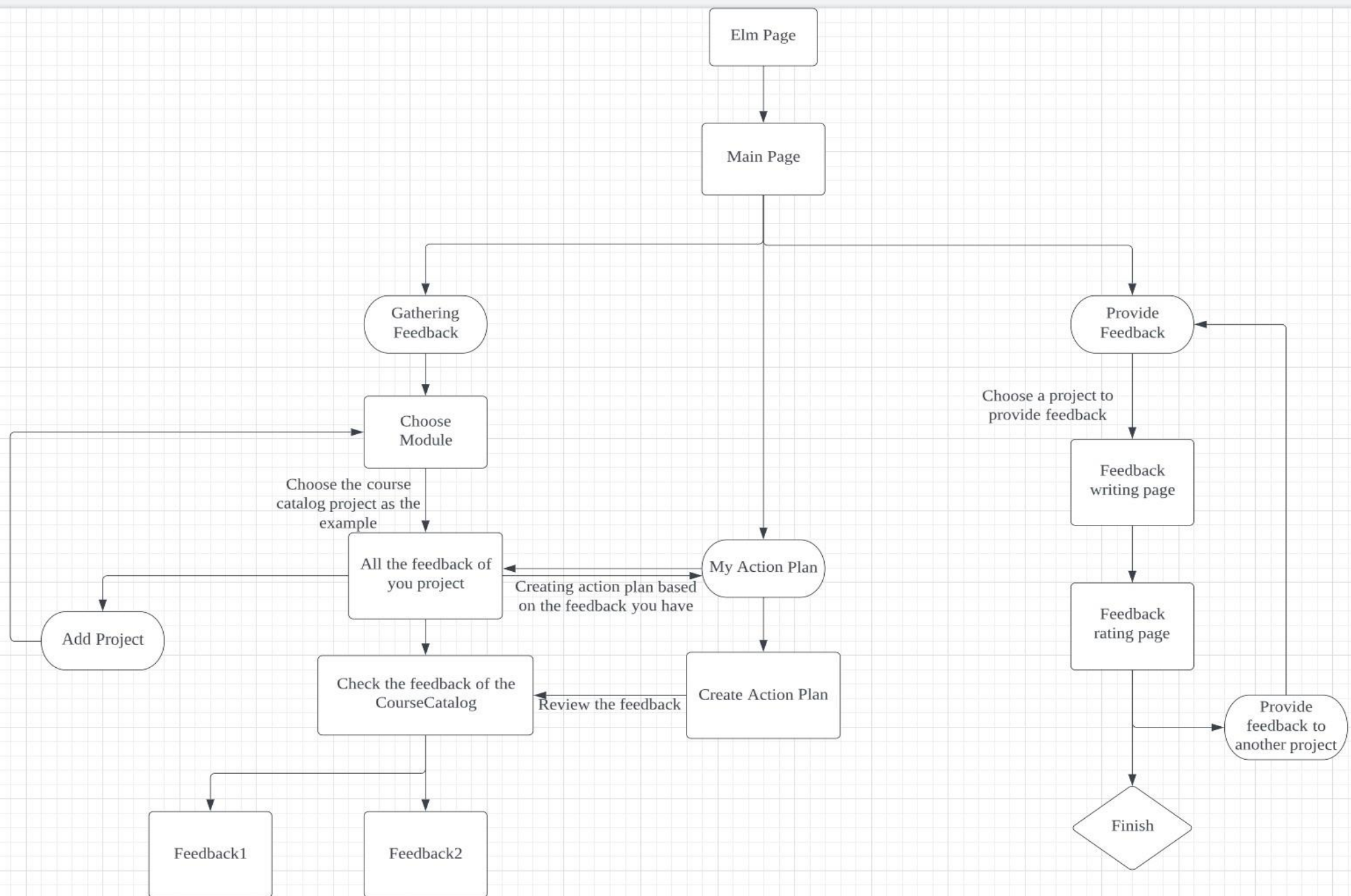


Diagram explaining the prototype

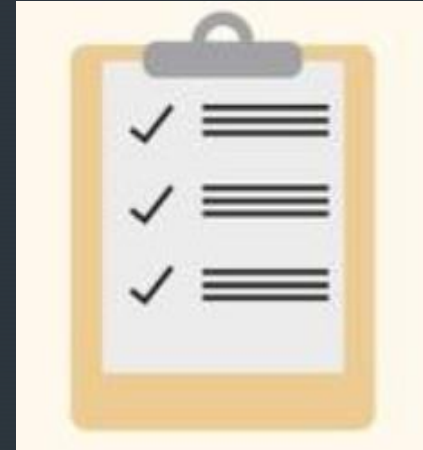




Justification using Norman's Principle

1. visibility:

- 1) The options displayed on the main page are clear. The user would know immediately how to get access to them.
- 2) On the feedback page, the empty place would be notified with grey letters indicating to the user that there is no available project to check the feedback.
- 3) on the feedback writing page the submitting button is greyed out until the user writes something.



2. Feedback:

- 1) clicking on buttons will lead you to different pages.
- 2) After you submitted the feedback there is a line indicating that you have successfully submitted the project.

3. Affordance:

- 1) Each clickable button is notified with an arrow which makes the user easily know whether it is clickable or not.
- 2) Different images on different pages can help the user know what this page is used for.

4. Mapping:

- 1) There is a scroll bar indicating where you are when you choose the project to collect feedback.
- 2) In the feedback checking page, there is a number in scale (e.g. 1/2) indicating what pages you are currently at.

5. Constraints:

- 1) When you are typing grades in the rating page only the 1-100 number would be allowed.
- 2) When you are on the main page only the three choices will be permitted (Gathering feedback, Providing feedback, My action plan)

6. Consistency:

- 1) The style of the button and the functionality of the app is consistent.
- 2) All the clickable buttons are formed with an arrow.



Question 2



Introduction to Apple's AirTag

- The AirTag is created by Apple which is a small device that can be attached to personal items such as cellphones, keys or wallets etc. AirTag can allow the user to track the attached item when it is being lost which is a really useful tool for finding the lost item.
- However some criminals may illegally use the AirTag to track and stalk another person without being permitted, Which may cause safety and privacy concerns.
- In this section we will be evaluating IBM's design principles for preventing coercive control of Apple's AirTag.



Journey map for the normal user

Specific User + Scenario + Goal

Phase 1

1. This user always lost the car keys.
2. Attaching the AirTag with the car keys
3. Track the belongings and prevent them from being lost

Phase 2

1. This user is an fan of Apple product.
2. Purchasing Apple products as many as possible including AirTag
3. For collecting different colours of AirTag.

Phase 3

1. This user always forgot where he parked his car
2. He left the Airtag in his car whenever he left the car.
3. For locating his car

Persona of a negative user

Demographics:

Male, aged 35
college drop-out

Behaviours:

he has been searching online for how to track another person for a long time.
he likes technology products.

What are they looking for:

stalking others and committing the crime

Stress Points:

Lack of empathy
Lack of Knowledge



Story of how the negative actor squeezed through the cracks in two separate scenarios

Bought an AirTag online and attached it to a person's belongings without consent

Stalking that person by locating the AirTag

Committing the crime, When the person attached with the AirTag goes into a remote region

Attach the AirTag to a car

Using the mobile phone to track the location of the car

When the location of the car is not moving for a long time then steal the car

How does each IBM Principle apply to Apple's AirTag?

1. Promoting Diversity:

- 1) Promoting the diversity of the product-developing group by accepting people with different backgrounds.
- 2) Understanding the needs of different communities.
- 3) Make the product applicable to people with different backgrounds.

2. Guaranteeing privacy:

- 1) Privacy issues are being considered while developing the product. (e.g. the user needs to agree to the terms of privacy while using the product)
- 2) They should make the data transparent and let the user know what information or data of the user could be shared.
- 3) AirTag allows the user to have the choice not to share a certain type of data or to delete some data.

3. Combating Gaslighting:

- 1) The working environment of the developing team should be emotional abuse or manipulation free.
- 2) The product should send a notification to the user whenever the user's data are being collected. (e.g. When the AirTag needs to get access to the user's location, it would ask the user first if this action could be permitted or not)
- 3) They should make the notification function as obvious as other regular functions for the user. (e.g. Sometimes it might be hard for the AirTag user to find the privacy settings)

4. Strengthening Security and Data:

- 1) The product could use more safe encrypted protocols for some sensitive data to prevent data from being used maliciously.
- 2) Strengthen the security of data storage.

5. Making Technology More Intuitive:

- 1) Make the product easy to use and understand by providing clear instructions. (e.g. The AirTag is really easy to use by only providing a few functions)
- 2) Simplify the user's interface by reducing the complexity of setting up the product or providing clear guidelines. (e.g. You only need to connect the AirTag on the phone by simply clicking on "connect my AirTag")

Conclusion

Would better following the IBM principles prevent coercive control?

- Yes, Apple's AirTag could prevent coercive control by following the IBM principle. Because data security has been strengthened. The privacy issue is also being considered. The transparent data make the user clearly know what information could be collected. All the features above could effectively help to prevent coercive control.
- However there are still some other features that may not be included by the IBM Principles which would also work to prevent coercive control. For instance, AirTag could develop a new feature that the AirTag will alert the user by sending notifications when detecting the user may be potentially under coercive control.