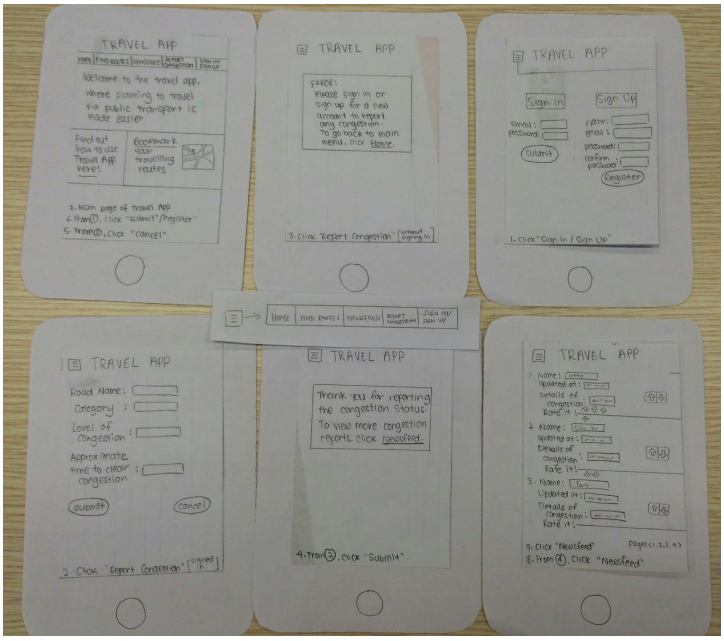
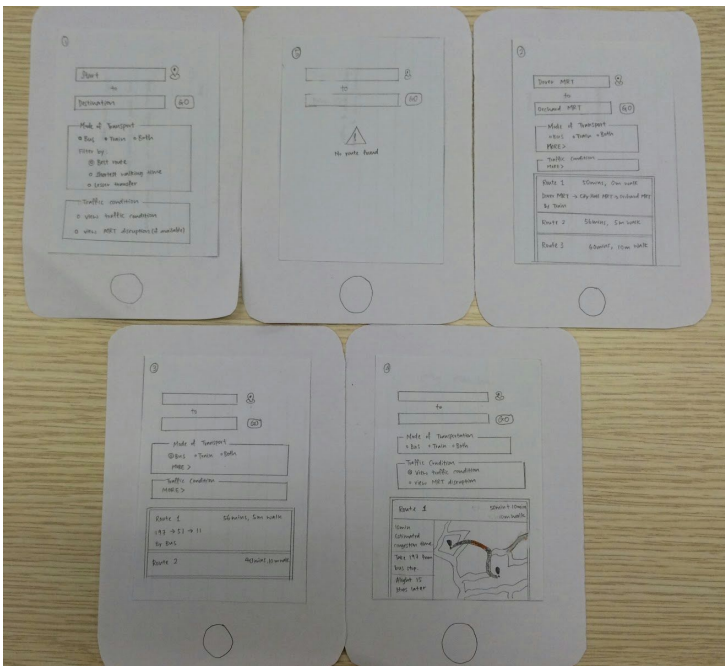
TEAM 1 ICT-2102 Assignment 4

Walkthrough video

Video link: https://www.youtube.com/watch?v=EKeNfupmqck

Paper Prototype





Heuristic evaluation by other teams

Our Goal:

- ❏ Evaluate if user are satisfied with the visualization of our app. If users are found to be dissatisfied, identify the errors of the specific interface that is hindering the user from navigating through the functions of the app.

The severe issues found by **Team 2** heuristic evaluation were mainly Familiar Metaphors And Language and Aesthetics And Minimalist Design (See Appendix A). The main problem under the Familiar Metaphors and Language heuristic is that we had used collapsible panels which are collapsed by default to hide the full route details initially when returning all the various route options to the user. However, it is not obvious to the user that those route options are collapsibles and that they are able to click and expand a specific route option to view more details for that route. To make this interface design become more apparent and effective, we can simply add a "Expand to show full details" button on each panel instead, so that the user can easily understand what they have to do to view the full route details.

The key problem of Aesthetics And Minimalist Design Heuristic is that our Home Page contain too many information on the objective of the app and can be reduced by replacing with images which could be a minimal yet more effective method to present information. Additionally, when returning the results after users perform a route search, we continued to display the search form (starting point and destination input) which should be replace with a "Back" button to reduce clutter as user would normally perform only one search each time they use the app.

The severe issues identified by **Team 3** heuristics evaluation were mainly Help And Documentation (See Appendix B). The main problem is that there wasn't any help provided regarding what the user should input for the different fields in the reporting of congestion. It is suggested that we can put up a FAQ page or include a help panel beside each field to aid user. The severity rating from Team 2 and 3 can be found in Appendix C.

Some of the problems we faced while using the paper prototype is that the layout and information were not drawn clearly. For example, after submitting a congestion report, the user's report will be updated on the news feed. Textboxes were drawn for our reference as to where and what information would be shown on the news feed page but it has misguided our experts to think that those were textboxes for users to fill up.It was also challenging for us to draw drop-down box and "thumbs up/down" icons (which we replaced with arrow up/down icons) on the paper prototype.

Heuristic evaluation for other teams

The heuristic evaluation process we had for both **Team 2** and **3** were largely similar. Each time before our team explored the prototype and interface of the other team, we were given a Heuristics Evaluation sheet to complete by the end of our evaluation (*See appendix D and E*). They would then explain their goal for this evaluation so that we can have a clear idea of what to look out for during the evaluation before we start. As we are evaluating the other team's prototype, we would note down the observations that we made on their interface (both good and bad), class it under a specific heuristic and then list it on the Heuristics Evaluation sheet we were given, and then finally rate the severity of each heuristic based on the number of issues we found for each particular heuristic.

Despite the similarities in the evaluation process, the results of our feedback based on the heuristics evaluation for each team was very much different from the other. This is as expected, as they are two different prototypes and each would have issues in the interface that might not necessarily be found on the other. When comparing the two heuristics evaluation performed for each team respectively, the differences are aplenty.

Firstly, on our feedback for **Team 2's** prototype, we found that the issues were more severe in their application of Familiar Metaphors and language, Error Prevention as well as Help and Documentation. On the given Heuristics Evaluation sheet, we would describe based on our observations about how the lack of a blank-input catch and a guide to instruct users in finding a route could impact these heuristics respectively.

Whereas for **Team 3's** prototype, their only severe issue (that we could find) in the prototype was not providing any scenarios to effectively simulate what happens when a user makes an erroneous action, and how their system would handle those scenarios. In all other aspects, they have mostly attempted to address each heuristic in their system but suggestions on how they could improve some of the heuristics were given by us in their Heuristics sheet. For example, in the matter of providing Help and Documentation, whilst they have provided some guide when users are using the functions of their app, but there was not enough information or guide on the main page which would tell users what will be displayed at each of the pages they could accessed (e.g. Would clicking on the "Nearby Station" link immediately display the list of nearby stations or will it show the nearby stations updates as well? Or is the link for users to key in their location to find nearby stations?) We also pointed out to them that whilst they have effectively used various forms of metaphors in their application, they were lacking consistency in displaying these metaphors across the application, as we observed that some page lacked the same metaphors that were displayed in another page despite how both pages are trying to show the same information.

Some things in common that we have observed about **Team 2** and **Team 3** after the Heuristic evaluations was that both team have fully addressed the Visibility of System Status and Flexibility and Efficiency heuristics. Both teams have illustrated clear system statuses in their prototypes and have

also provided adequate shortcuts to navigate the system whilst maintaining information relevance in each page as well.

Reflective Summary

The heuristic evaluation is effective to a certain extent, to evaluate the user interface of an application or website. The evaluator can easily identify issues with interfaces, such as inconsistent font style and layout, thus slowing down the users while trying to adapt to the inconsistency of the application or website. Heuristic evaluation can be applied to various interfaces in varying states of readiness, such as paper prototypes. However, while evaluating paper prototypes, the evaluator is less likely to notice the missing elements as compared to evaluating an active prototype. Hence, to provide constructive feedback, the evaluator has to look harder for missing elements in paper prototypes.

The heuristic evaluation has both advantages and disadvantages. The heuristic evaluation is valuable for fast feedbacks as it obtains feedback while the experts are using the prototype. The feedbacks are also essential for the designers and it is obtained in an early stage. The heuristic evaluation is also valuable for its inexpensiveness, as it does not incorporate any cost for evaluating.

However, there are some things that is not very useful in heuristic evaluation. Heuristic evaluation is recommended to be paired with usability testing, as it might result in missing out certain issues which are not found during the evaluation. During the heuristic evaluation, if multiple evaluators are present, it would be difficult for evaluators to identify the same usability issues. Heuristic evaluation also tend to uncover new or more issues, leaving with a question to which should be prioritised and fixed first.

We have learnt that heuristic evaluation is one of the most popular inspection-based methods for evaluating the usability in Human Computer Interaction. Heuristic evaluation is most favoured due to its cost efficiency and ease of implementation. Even though the evaluation took a lot of time to complete, it allowed us to evaluate other teams' prototype thoroughly and vice versa. Thus, it allowed us to give constructive feedback to them. The feedbacks received were also equally constructive to help us refine the interfaces to best suit the users.

Appendix A - Heuristic Evaluation(Team 2)

Heuristics	Team Comments	**Severity	**Impact
1. State Of The System	**Since it a mobile app, it should display some loading indicator for certain page that requires form submission to the server. In reality, the page transition would not be so instants and smooth, especially when mobile signal is weak.** **After reporting a congestion, there is a message shown to the users and a link to go back to menu, telling the user where to go next.**	Addressed to some extend	Fair Usability
2. Familiar Metaphors And Language	**Panels are used instead of buttons to show details of each of the different routes (not obvious enough).** **'Up' button for rating is not a familiar metaphor to interpret.** **'Travel App' is not a clear header to let users know the main functionalities of the app** **There should be metaphors for the navigation menu to aid in visual information, because looking at image is faster than reading text.** **Fields in form to report congestion is unclear as to what to fill in.**	Not Addressed	Low Usability
3. User Control And Freedom	**User can have a choice to edit/delete the congestion entry that they reported in any case that**	Completely Addressed	No

	the wrong information is keyed in or it was a false alarm etc. **There is a navigation drawer menu throughout the entire app which is good.**		
4. Consistency And Standards	**The navigation menu is horizontal, it should be vertical because in portrait orientation user might not be able to view all menu link in reality.**	Addressed to some extend	No
5. Error Prevention	**A home metaphor or back button could be implemented to eliminate inaccurate assumptions and easier navigation for users.**	Addressed to some extend	Fair Usability
6. Recognition Rather Than Recall	**The up and down button for rating look like a sort button which was confusing.** **No page title/header for every page.** **For searching routes, the choices that the user has selected are still displayed which prevent users from having to recall what they have done, but as a result there are too many elements on a single screen on these pages and it seems cluttered. (similar to second point in H8)**	Addressed to some extend	Low Usability
7. Flexibility And Efficiency	**Autocomplete function can be implemented.** **Once a certain task is completed, there is additional link in the instruction to lead user to the next course of action which is good.**	Addressed to some extend	Fair Usability

8. Aesthetics And Minimalist Design	**Design for the screens are minimalistic except for home page – maybe the amount of text could be reduced and replaced by an images instead.** **The search route result still retains the search form elements, which is unnecessary although it is understandable that this is convenient for user to perform search again. A "Back" button would be helpful to reduce the amount of information displayed on the screen. This course of action for user is not as "expensive" as compared to making the screen more cluttered. This is not a search engine where user will perform more than 1 search.**	Not Addressed	Low Usability
9. Recognise, Diagnose, Recover From Errors/ Problems	**Error is shown when route that cannot be travelled by public transport is keyed in, but it does not allow the user to select the mode of transport and traffic condition after the error** **The recommended course of action is shown when user tried to search using the form without logging in.**	Completely Addressed	Fair Usability
10. Help And Documentation	**No help or FAQ section** **For the 'Report Congestion' page, it is better to have a little help icon beside each text field to guide user on what is expected to be filled in (if there is no drop down)**	Not Addressed	Fair Usability

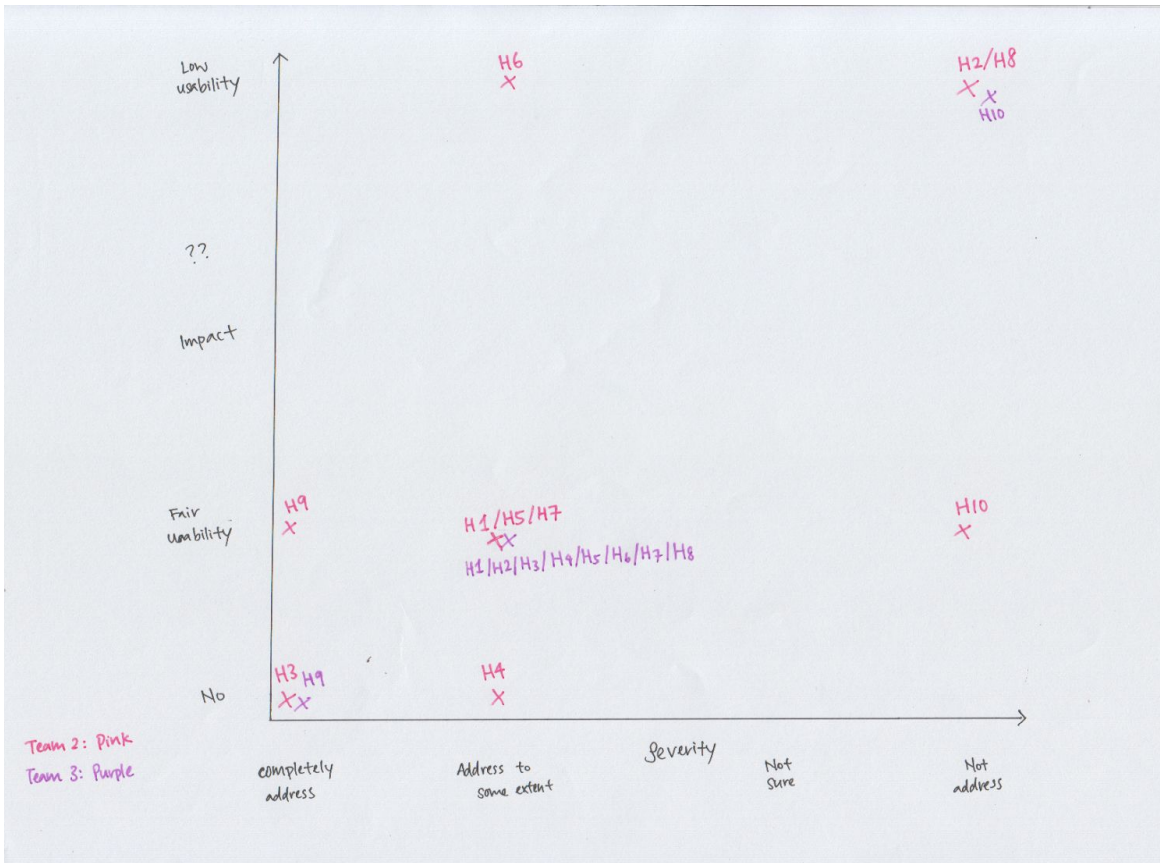
Appendix B - Heuristic Evaluation(Team 3)

Heuristics	Team Comments	**Severity	**Impact
1. State Of The System	When the user sign up for a new account, there is no display of register successfully message	Addressed to some extent	Fair Usability
2. Familiar Metaphors And Language	~~[1] [2]~~ [↑] [↓] This conveys another message such as shifting instead of Like or Dislike	Addressed to some extent	Fair Usability
3. User Control And Freedom	Traffic news feeds should allow users to change based on their preferences	Addressed to some extent	Fair Usability
4. Consistency And Standards	There is no sign out button. Title of the page is not available for all the pages. Instead of Go! button, use find / find route	Addressed to some extent	Fair Usability
5. Error Prevention	There should be * fields for registering account (validation), sign in validation. Some of the pages have no back button	Addressed to some extent	Fair Usability
6. Recognition Rather Than Recall	Terminology of sign in should not be submit, instead ~~it~~ it should be login or sign in.	Addressed to some extent	Fair Usability
7. Flexibility And Efficiency	Shows a list of possible road names to the users similarly to autocomplete	Addressed to some extent	Fair Usability
8. Aesthetics And Minimalist Design	Home Page (Too cluttered Suggest to put inside the menu bar. Newsfeeds should not have text boxes.	Addressed to Some extent	Fair Usability
9. Recognise, Diagnose, Recover From Errors/ Problems		Completely Addressed	No
10. Help And Documentation	Suggest to put a faq page or a (?) mark beside certain fields to help users understand what ~~fields~~ the purpose of the fields is.	Not Addressed	Low Usability

** Input Options

Severity	Impact
Completely Addressed	No
Addressed To Some Extend	Fair Usability
Not Sure	??
Not Addressed	Low Usability

Appendix C - Severity Ratings



Appendix D - Heuristic Evaluation on Team 2

Team 2 Heuristic Evaluation (PoolToCampus mobile web application)

Team: 1

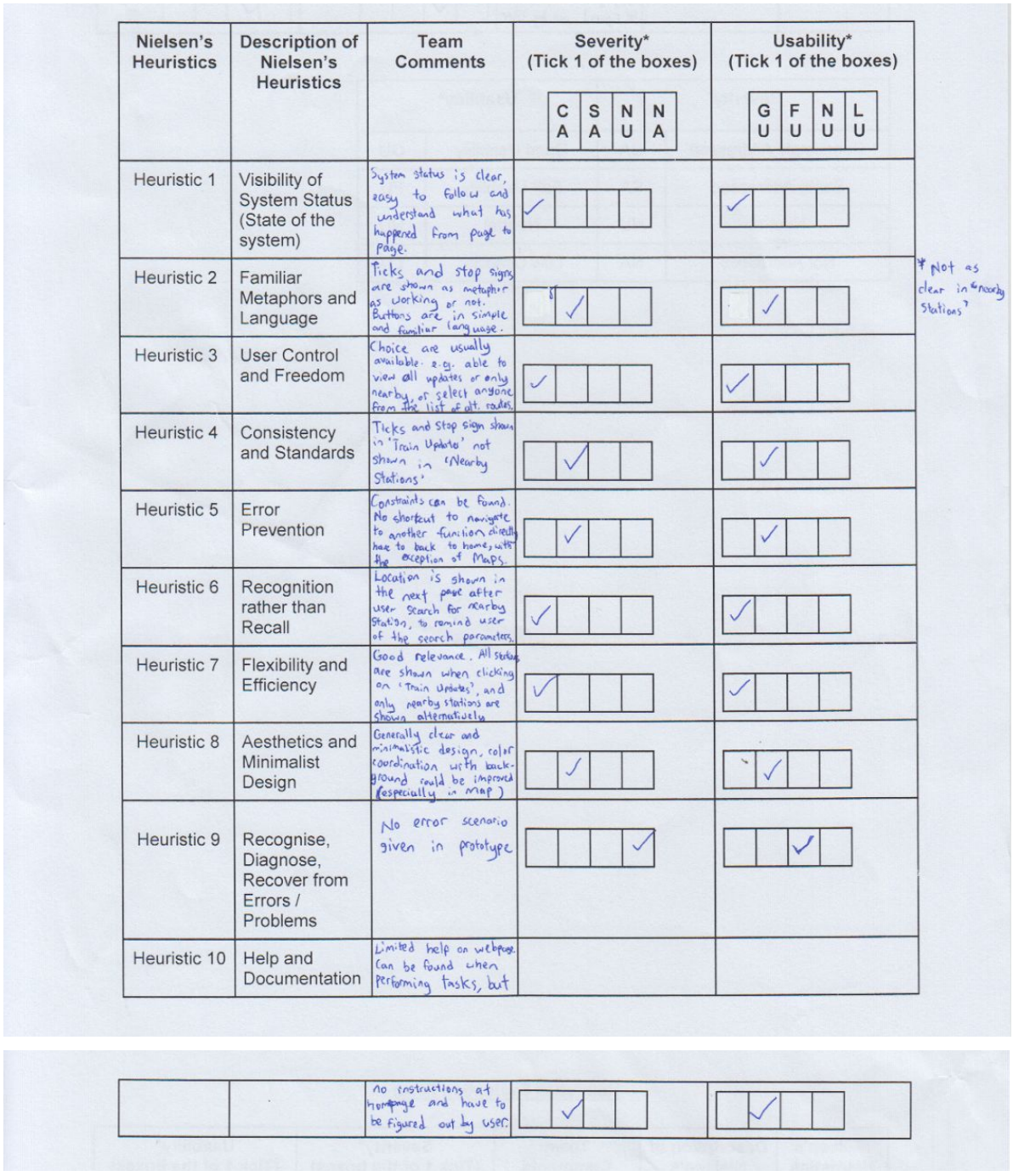
No.	Heuristics	Comments	Severity Rate 1 to 5 1 = Not addressed 5 = Completely addressed	Impact Rate 1 to 5 1 = Low usability 5 = High usability
H1	Visibility of system status	clear state of system eg. when a route is being submitted, it is shown	5	4
H2	Familiar metaphors and language	The recommended route isn't highlighted (raise awareness) to the user - the details of the recommended route was being covered by the blue background which made it less significant to be seen.	2	1

H3	User control and freedom	between Can choose alternate routes, and recomended route.	5	3
H4	Consistency and standards	The layout is consistent eg. the button remain at the same positon. No confusion	5	4
H5	Error prevention	There isn't a correct prevention done when the user left compulsary fields blank for both "Find a Route" and "Submit a Route". user is directly diverted to the next screen even when the fields were left blank.	2	2

H6	Recognition rather than recall	The notification to inform the user for the route of where the user wants to head to exists is taking up bigger space than the display of the most recommended route, user may perceives that something could be clickable or draggable within the space	3	3
H7	Flexibility and efficiency	Sufficient shortcuts to navigate around the functions	5	5
H8	Aesthetics and minimalist design	Simple and straight forward design. The layout doesn't include redundant information	5	4

H9	Recognise, diagnose, recover from errors/problems	When the user fills in blank input or a route that doesn't exists in the system for the "Starting Point" and "Destination" of the "Find a Route" feature, the system informs and suggests the user to submit a new route	5	4
H10	Help and documentation	There isn't guide in showing the guide to find and submit a route. eg. The new route can only be submitted if there is no existing route available	2	3

Appendix E - Heuristic Evaluation on Team 3



Nielsen's Heuristics	Description of Nielsen's Heuristics	Team Comments	Severity* (Tick 1 of the boxes) CA SA NU NA	Usability* (Tick 1 of the boxes) GU FU NU LU
Heuristic 1	Visibility of System Status (State of the system)	System status is clear, easy to follow and understand what has happened from page to page.	✓	✓
Heuristic 2	Familiar Metaphors and Language	Ticks and stop signs are shown as metaphor as working or not. Buttons are in simple and familiar language.	✓	✓
Heuristic 3	User Control and Freedom	Choice are usually available. e.g. able to view all updates or only nearby, or select anyone from the list of all routes.	✓	✓
Heuristic 4	Consistency and Standards	Ticks and stop sign shown in 'Train Update' not shown in 'Nearby Stations'	✓	✓
Heuristic 5	Error Prevention	Constraints can be found. No shortcut to navigate to another function directly have to back to home, with the exception of Maps.	✓	✓
Heuristic 6	Recognition rather than Recall	Location is shown in the next page after user search for nearby Station, to remind user of the search parameters.	✓	✓
Heuristic 7	Flexibility and Efficiency	Good relevance. All station are shown when clicking on 'Train Updates', and only nearby stations are shown alternatively	✓	✓
Heuristic 8	Aesthetics and Minimalist Design	Generally clear and minimalistic design, color coordination with background could be improved (especially in map)	✓	✓
Heuristic 9	Recognise, Diagnose, Recover from Errors / Problems	No error scenario given in prototype	✓	✓
Heuristic 10	Help and Documentation	Limited help on webpage. Can be found when performing tasks, but		
		no instructions at homepage and have to be figured out by user.	✓	✓

* Not as clear in 'Nearby Stations'?