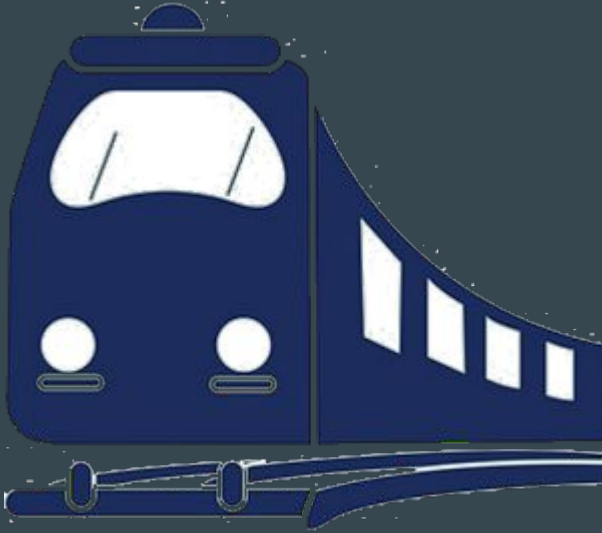# CS4242: Human Computer Interaction

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Group
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Sri Lanka Train Schedule Application

- Sri Lanka Train Schedule is developed under the initiative of delivering government e-services which are connected to Lanka Gate through smart phone mobile interface.
- A user can get Train Schedule and Ticket Price information from Sri Lanka Railways.

https://play.google.com/store/apps/details?id=lk.icta.mobile.apps.railway

Heuristic Analysis

The goal of this evaluation was to identify major usability flaws within the train schedule application interface through the application of these nine heuristics:

1. Use Aesthetic and Minimalist Design
2. Effective Menu/Command Structure
3. Use Simple and Natural Language
4. Minimize User's Memory Load
5. Be Consistent
6. Provide Feedback
7. Provide Clearly Marked Exits
8. Deal with Errors in a Positive Manner
9. Provide Help

SUMMARY OF FINDINGS

- We identified problem areas that violate traditional usability principles.

- These problems have been prioritized below, with the most severe and easiest to fix problems listed first.

- It illustrates that Sri Lanka Train Schedule has the largest number of usability problems in the area of consistency.

While Sri Lanka Train Schedule application is generally considered easy to use, a detailed heuristic evaluation based on nine general usability principles revealed a number of specific usability problems.

| Severity Rankings	
Rating	Definition
0	Violates a heuristic but doesn't seem to be a usability problem
1	Superficial usability problem: may be easily overcome by user or occurs extremely infrequently. Does not need to be fixed for next release unless extra time is available.
2	Minor usability problem: may occur more frequently or be more difficult to overcome. Fixing this should be given low priority for next release.
3	Major usability problem: occurs frequently and persistently or users may be unable or unaware of how to fix the problem. Important to fix, so should be given high priority.
4	Usability catastrophe: Seriously impairs use of product and cannot be overcome by users. Imperative to fix this before product can be released.

Ease of Fixing Rankings	
Rating	Definition
0	Problem would be extremely easy to fix. Could be completed by one team member before next release.
1	Problem would be easy to fix. Involves specific interface elements and solution is clear.
2	Problem would require some effort to fix. Involves multiple aspects of the interface or would require team of developers to implement changes before next release or solution is not clear.
3	Usability problem would be difficult to fix. Requires concentrated development effort to finish before next release, involves multiple aspects of interface. Solution may not be immediately obvious or may be disputed.

Problem #1

Inconsistencies when the internet disconnects

#	Problem	Severity Ranking	Ease of Fixing Ranking	Heuristic Number	Broad Heuristic
1	Inconsistencies when the internet disconnects	3	1	6,8	Provide Feedback, Deal with Errors in a Positive Manner

Evidence and Solution
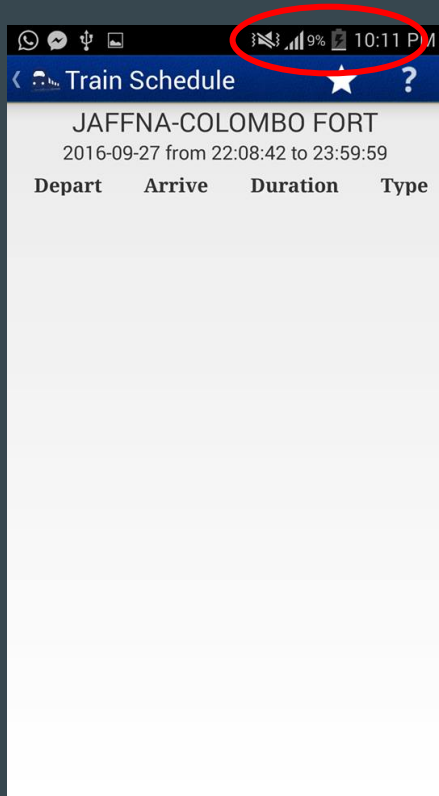
Solution to this problem is to check the internet connection and shows any warning or error messages which clearly shows about the problem like "There is no internet connection" or "Check your internet connection".

Problem #2

Time format is restricted only to 24hour clock

#	Problem	Severity Ranking	Ease of Fixing Ranking	Heuristic Number	Broad Heuristic
2	Time format is restricted only to 24hour clock	0	1	3	Use Simple and Natural Language

Evidence and Solution

Problem #3

Zone classification is not in a conventional way

#	Problem	Severity Ranking	Ease of Fixing Ranking	Heuristic Number	Broad Heuristic
3	Zone classification is not in a conventional way	1	2	2,5	Effective Menu/Command Structure, Be Consistent

Evidence and Solution

Problem #4

There are buttons but they are not clearly visible as button

#	Problem	Severity Ranking	Ease of Fixing Ranking	Heuristic Number	Broad Heuristic
4	There are buttons but they are not clearly visible as button	3	2	1,4,5	Use Aesthetic and Minimalist Design, Minimize User's Memory Load, Be Consistent

Evidence and Problem

Use a button to toggle between from field and to field.

Problem #5

Application does not promptly highlight the mistaken input fields

#	Problem	Severity Ranking	Ease of Fixing Ranking	Heuristic Number	Broad Heuristic
5	Application does not promptly highlight the mistaken input fields	3	2	8,9	Deal with Errors in a Positive Manner, Provide Help

Evidence and Solution

Problem #6

Star button in the title bar makes a ambiguous meaning

#	Problem	Severity Ranking	Ease of Fixing Ranking	Heuristic Number	Broad Heuristic
6	Star button in the title bar makes a ambiguous meaning	1	1	4,5	Minimize User's Memory Load, Be Consistent

Evidence and Solution

Problem #7

Undo commands basically unsupported.

#	Problem	Severity Ranking	Ease of Fixing Ranking	Heuristic Number	Broad Heuristic
7	Undo commands basically unsupported.	3	2	7	Provide Clearly Marked Exits

USER USABILITY EVALUATION

System Usability Scale (SUS)

The System Usability Scale (SUS) is a reliable tool for measuring the usability. It consists of a 10 item questionnaire with five response options for respondents; from Strongly agree to Strongly disagree. Originally created by John Brooke in 1986, it allows you to evaluate a wide variety of products and services, including hardware, software, mobile devices, websites and applications.

Scoring SUS

- For odd items: subtract one from the user response.
- For even-numbered items: subtract the user responses from 5
- This scales all values from 0 to 4 (with four being the most positive response).
- Add up the converted responses for each user and multiply that total by 2.5. This converts the range of possible values from 0 to 100 instead of from 0 to 40.

Sri Lanka Train Schedule Application

For each of the following statements, mark one box that best describes your reactions to the mobile application.

I think that I would like to use this App frequently. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I found this App unnecessarily complex. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I thought this App was easy to use. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I think that I would need assistance to be able to use this App. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I found the various functions in this App were well integrated. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I thought there was too much inconsistency in this App. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I would imagine that most people would learn to use this App very quickly. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I found this App very cumbersome/awkward to use. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I felt very confident using this App. *

	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

I needed to learn a lot of things before I could get going with this App. *

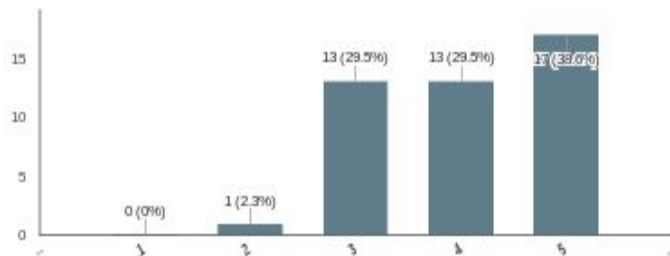|	1	2	3	4	5	
Strongly Disagree	○	○	○	○	○	Strongly Agree

SUMMARY | INDIVIDUAL

Accepting responses

I think that I would like to use this App frequently. (44 responses)

- 0 (0%)
- 1 (2.3%)
- 13 (29.5%)
- 13 (29.5%)
- 17 (38.6%)

I found this App unnecessarily complex. (44 responses)

- 9 (20.5%)
- 21 (47.7%)
- 14 (31.8%)
- 0 (0%)
- 0 (0%)
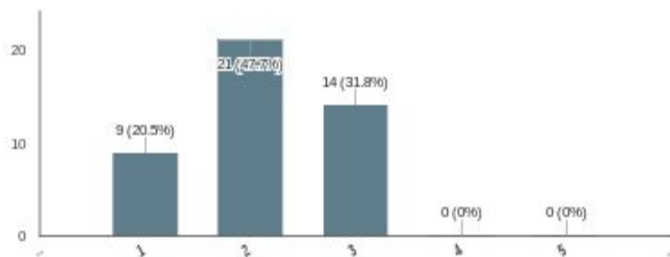
I thought this App was easy to use. (44 responses)

- 0 (0%)
- 3 (6.8%)
- 10 (22.7%)
- 24 (54.5%)
- 7 (15.9%)
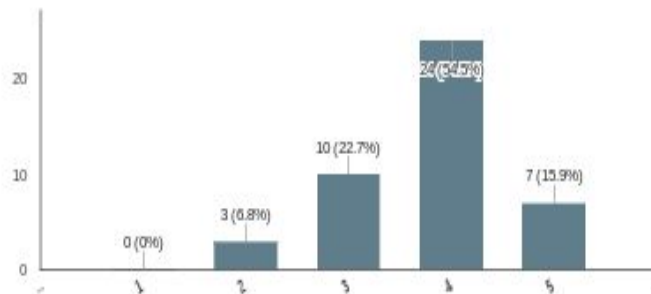
I think that I would need assistance to be able to use this App. (44 responses)

- 16 (36.4%)
- 18 (40.9%)
- 7 (15.9%)
- 3 (6.8%)
- 0 (0%)
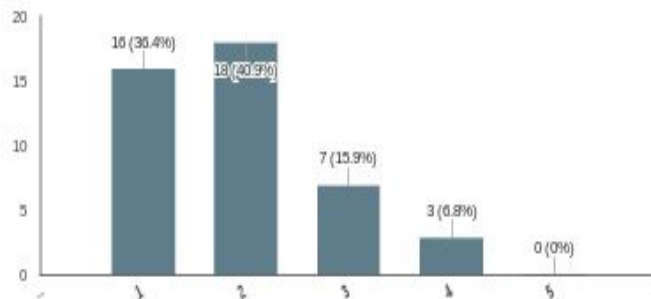
I found the various functions in this App were well integrated. (44 responses)

1 (2.3%) — 1
3 (6.8%) — 2
15 (34.1%) — 3
22 (50%) — 4
3 (6.8%) — 5
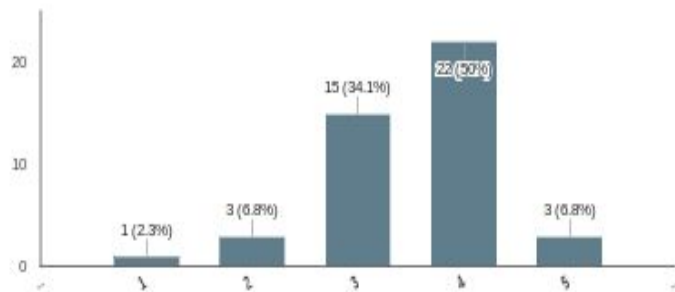
I would imagine that most people would learn to use this App very quickly. (44 responses)

0 (0%) — 1
0 (0%) — 2
8 (18.2%) — 3
26 (59.1%) — 4
10 (22.7%) — 5
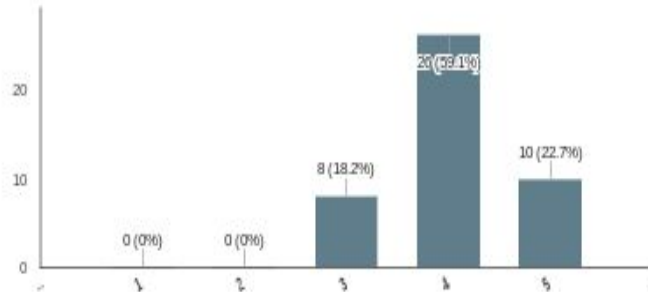
I thought there was too much inconsistency in this App. (44 responses)

1 (2.3%) — 1
10 (22.7%) — 2
22 (50%) — 3
8 (18.2%) — 4
3 (6.8%) — 5
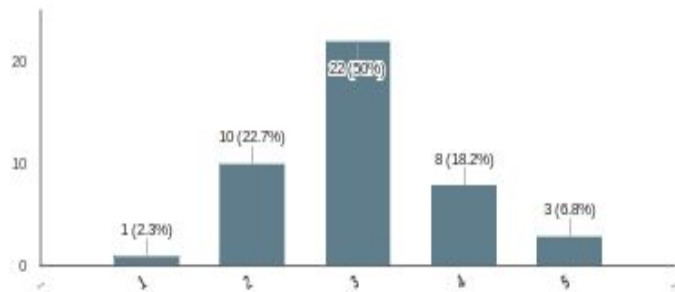
I found this App very cumbersome/awkward to use. (44 responses)

7 (15.9%) — 1
23 (52.3%) — 2
11 (25%) — 3
2 (4.5%) — 4
1 (2.3%) — 5
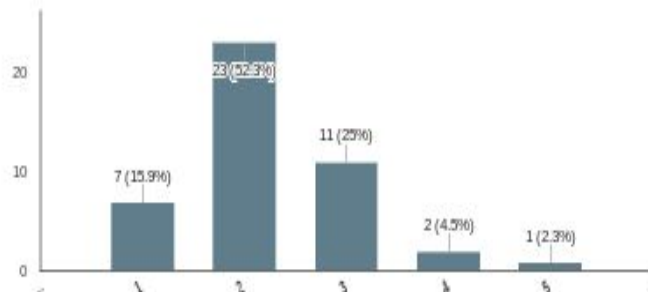
I felt very confident using this App. (44 responses)

Bar chart showing responses on a scale of 1 to 5:
- 1: 0 (0%)
- 2: 1 (2.3%)
- 3: 9 (20.5%)
- 4: 22 (50%)
- 5: 12 (27.3%)
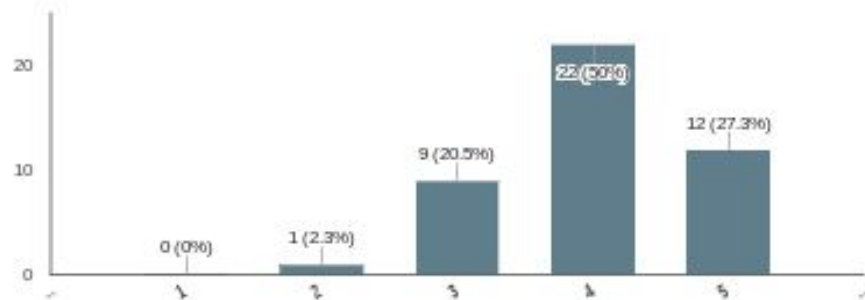
I needed to learn a lot of things before I could get going with this App. (44 responses)

Bar chart showing responses on a scale of 1 to 5:
- 1: 23 (52.3%)
- 2: 14 (31.8%)
- 3: 7 (15.9%)
- 4: 0 (0%)
- 5: 0 (0%)
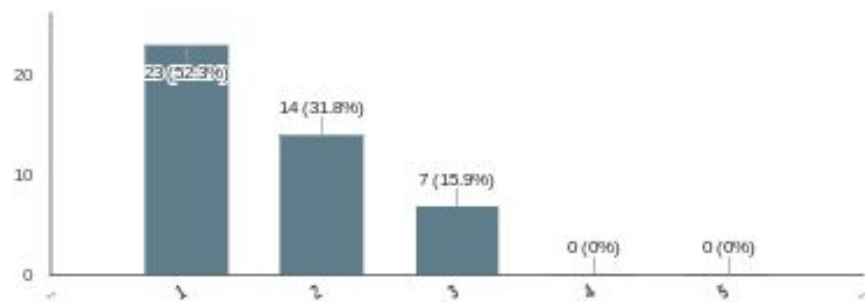
SUS AVERAGE SCORE

71.113

Thank you

Q&A