# HCI project 1 report

## Study Design

a. Hypothesis and NULL hypothesis

Hypothesis 1: My interface is more ascetically designed compared to TA's interface.

NULL Hypothesis 1: My interface is less ascetically designed or of the same ascetic design value when compared to TA's interface.

Hypothesis 2: My interface is faster compared to TA's interface.

NULL Hypothesis 2: My interface is slower or of the same speed compared to TA's interface.

b. Metrics

Metric 1: User's Satisfaction with ascetic Design

How is Metric 1 measured: A 7-point Likert scale is used to quantify the level of satisfaction with the ascetic nature of design of the interface.

Metric 2: Time taken to complete given set of 10 tasks.

How is Metric 2 measured: User activates a timer, and executes a common set of simple tasks. Time is calculated for successful completion of every task, and the total time is taken as a metric.

Note: For future work, time taken on every task can be weighed with the frequency of the task during common usage. This will lead to a more effective evaluation.

c. Procedure

Ten students were assigned to evaluate this interface. Every student could explore the interface, and could also go through a practice set of tasks. Then the user (student) would launch the task list for which the performance was monitored. The user would execute a set of simple tasks similar to the ones in the practice task list.

After completion of the recorded task list, the user was asked to take a survey in which the user evaluated the interface with regards to the ease of use, level of satisfaction and the ascetic design.

The control group was the TA's interface and similar measurements were taken on that as well. The data from this study is in the format of paired samples for every user. As there were 10 students who took part in this study, we have nine degrees of freedom.

## Data analysis

1. Hypothesis 1: My interface is more ascetically designed compared to TA's interface.

   Mean (my interface): 2.4; Mean (TA's interface): 5.6

   Std. deviation (my interface): 1.9078; Std. deviation (TA's interface): 0.8

   T-Value: 4; p-value: 0.0031

   By conventional criteria, this difference is considered to be very statistically significant. We can reject the NULL hypothesis and accept the alternate hypothesis, that the designed interface is more ascetically designed compared to the TA's interface.

   This means that by making good decisions like

   - Using helpful graphics, and,
   - Presenting data in a more structured layout,

   The users found the interface designed by the author to be, a more ascetic design, as compared to the TA's interface.

2. Hypothesis 2: My interface is faster compared to TA's interface.

   Mean (my interface): 55.6; Mean (TA's interface): 70.1

   Std. deviation (my interface): 19.00631; Std. deviation (TA's interface): 20.9067

   T-Value: 1.48019989; p-value: 0.1730

   By conventional criteria, this difference is considered to be not statistically significant. As we cannot reject the NULL hypothesis, the conclusion is the designed interface cannot be proved to be faster that the TA's interface with the collected data.

## Conclusions

1. Discuss design decisions that did not turn out as you had anticipated
    a. Multi-line input functionality and clicking send button to send chat text. Enter key was expected to send chat text.
    b. Display history in the same window as current chat did not work, as the action did not show any action when the history was less than the visible chat area.
2. Explain at least three design lessons learned from the evaluation of your interface
    a. On pressing enter key, send action must be performed. Many people expected this functionality, and not having this affected overall satisfaction of interaction with the interface.
    b. Confirmation of deletion of contact should be requested, as this action can be performed accidently.
    c. Chat history can be shown in a different window, as it was not apparent to the users that the complete history was being display (this is mainly because the interface was not used for more than one line of communication so on loading full history, the content of the chat area was the same)

3. List and explain bias and confounds in your study
    - Level of satisfaction depends on the previous interface evaluated by the user, as inherently the comparison will be made when evaluating this interface.
    - As the participants in the study are also students who developed similar interfaces, they would have had set their interface to be the Ideal for them, and hence, comparison will be biased.
    - Level of expectation (and hence the evaluation) will increase or decrease after the user evaluates more and more interfaces.
    - Users already knew the goal of the study, and could manipulate the results to suit their needs.
    - As the goal was known, and there is a reward for the best interface, it is possible that the users manipulated the results so as to increase their chance to get the reward.

## Graphs

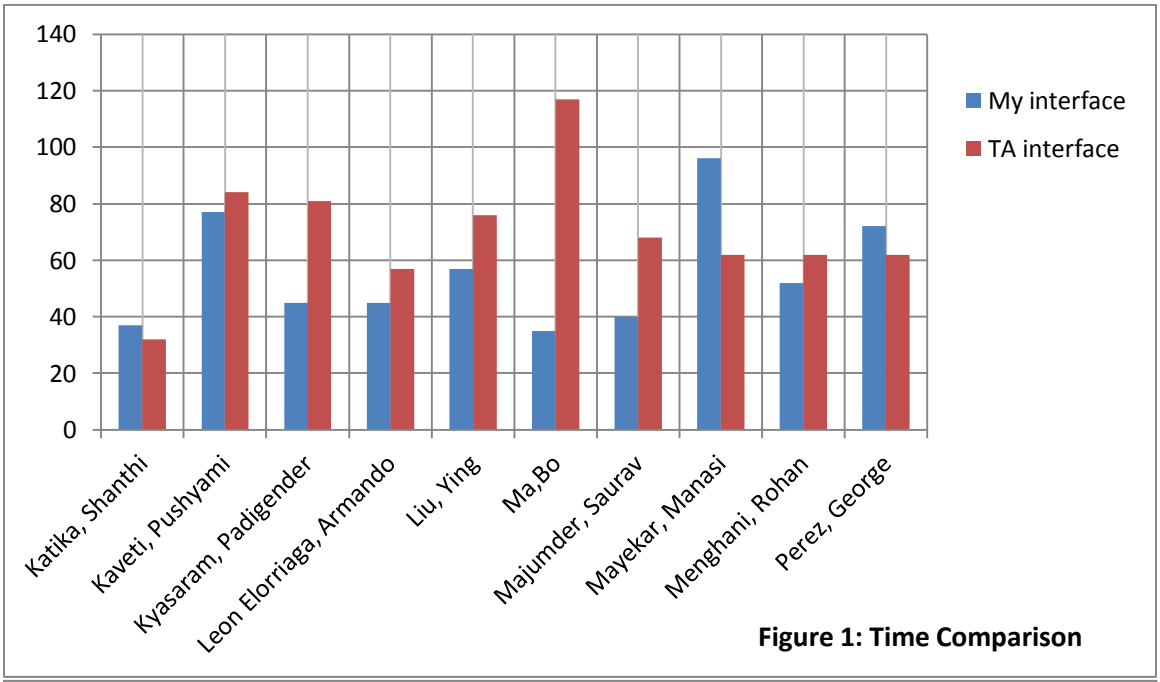



**Figure 1: Time Comparison**

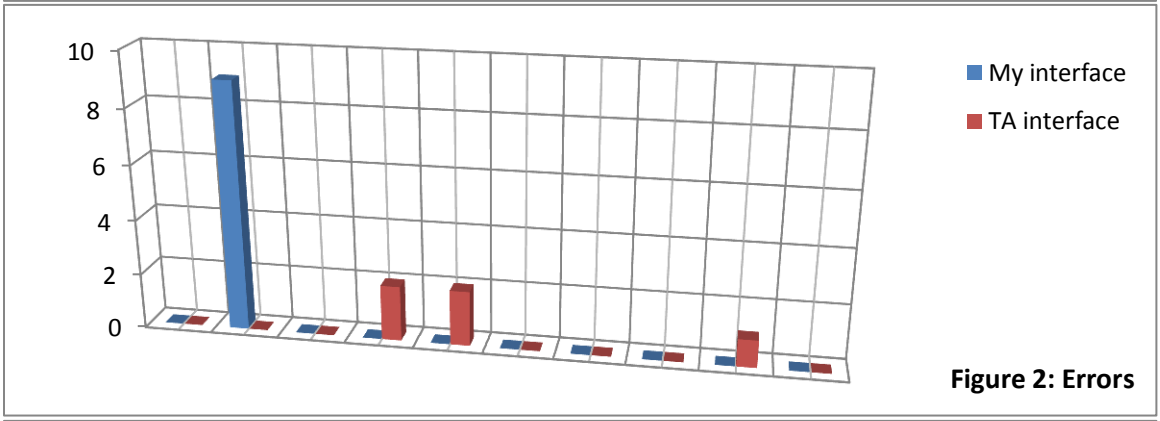
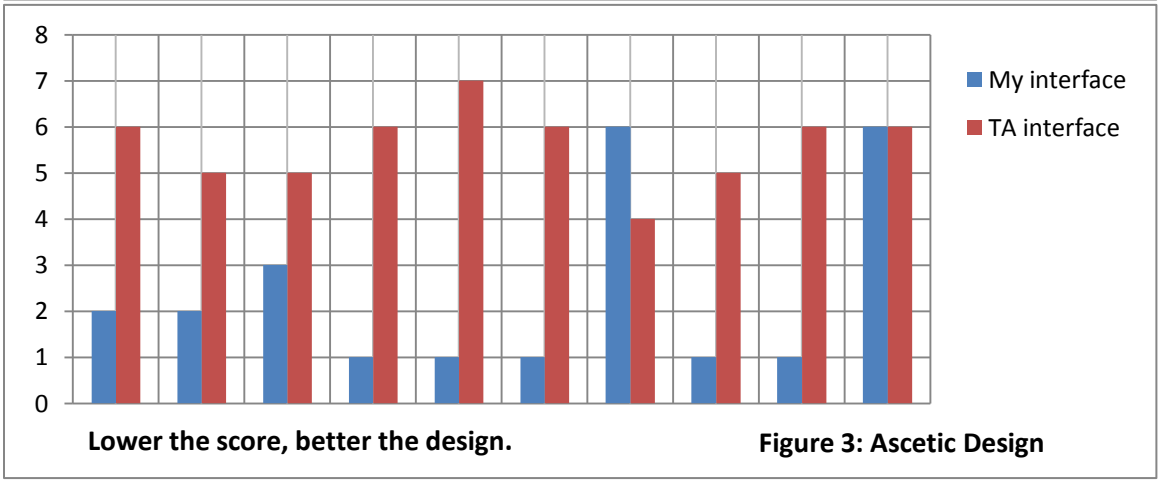



**Figure 2: Errors**




**Lower the score, better the design.**

**Figure 3: Ascetic Design**

## List of your task time on other students' interface

| | Participant | Time |
|---|---|---|
| **1.** | Ramasubramanian, Balaji | 61.59 |
| **2.** | Sharma, Pranjul | 275.63 |
| **3.** | Shickel, Benjamin | 107.51 |
| **4.** | Somanagoudar, Pratik | 115.22 |
| **5.** | Wang, Shuying | 84.20 |
| **6.** | Ying, Ping | 30 |
| **7.** | Zhang, Sicong | 98 |
| **8.** | Zhao, Wenting | 56.01 |
| **9.** | Asmat, Rolando | 148.92 |
| **10.** | Bhirud, Dhananjay | 305.07 |

## List of other students' time on your interface

| | Participant | Time |
|---|---|---|
| **1.** | Katika, Shanthi | 37 |
| **2.** | Kaveti, Pushyami | 77 |
| **3.** | Kyasaram, Padigender | 45 |
| **4.** | Leon Elorriaga, Armando | 45 |
| **5.** | Liu, Ying | 57 |
| **6.** | Ma,Bo | 35 |
| **7.** | Majumder, Saurav | 40 |
| **8.** | Mayekar, Manasi | 96 |
| **9.** | Menghani, Rohan | 52 |
| **10.** | Perez, George | 72 |