Project Report

Created- Jul 6 2016

Last Edited- Jul 8 2016

Sharad Nolastname

1210268966

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1 Introduction

1.1 Purpose

The web application that I chose to optimize in the term of usability belongs to University of Advancing Technology, Tempe [**http://www.uat.edu**]. The website opens with cluttered animation and no mention to the name of the university. For a first time visitor of the website, it is a challenge to look for desired information among convoluted and misplaced menu items. Links not leading to the desired page leads to lose of confidence in the process of application. The large amount of information present at the course detail page may overwhelm the user who might not not be able to keep track of the information. The application forms are poorly designed which lacks proper validation and fail to give feedbacks on each stage. Numerous hidden elements in the form keeps unfolding, thus increasing the expected time to complete the form.

The project goals at improving the home page interface by reducing the amount of unnecessary animations and replacing that with detailed information. The menus are revamped with larger field area dedication and proper arrangement of misplaced and confusing items. Redundant buttons and information are removed from the course detail page and the page is divided into subparts using accordion menus. The application form is given a complete new look by increasing the form area and applying proper validation and feedback at the required points.

The link to the prototype is http://o3stoa.axshare.com/#g=1&p=home

1.2 Tasks Identified

The identified tasks that a common user of the website would perform are:

1. Find the Admission Requirements for the Graduate, Undergraduate or International Students. Like if the transcript is needed, what are the TOEFL Requirements etc.
2. Find the information about a selected course. The information may consist of,
   - Cost of Attendance
   - Deadlines to submit the Application
   - Application Link
3. Apply to a given course as an applicant by filing all the required details.

1.3 Assumptions

It is assumed that the user would not fill the unrequired information present in the form so as to complete the task in a uniform way across all users.

2 Analysis

2.1 Personas

The following types of personas has been identified for the usage of the website.

1. Young Student looking for admission in the university – These are the users aged between 18 and 28 that might be interested in getting information about the university for getting admitted.
2. Parents of the Students – These are the users aged between 35 and 60 who might be interested in considering this university for their child. They might have less hands on experience in using websites and application process.
3. People looking for employment in the university – These are the people aged between 20 and 40 years that may be in search of job opportunities offered by the university. They may also want to easily locate the employment page and look at the application form.

2.2 Task Analysis Tools

For the purpose of analyzing the application's usability, following tools has been used.

1. Heuristic Analysis: Various pre-identified usability criteria were examined to see if the criterions are followed properly. It will be used to check the usability of the website for all the tasks.
2. Cognitive Walkthrough: Designs were evaluated to tell how well they support user in learning task. It will be used for all the task to see if the task could be successfully completed.
3. System Usability Scale: It is a valid and reliable scale to measure usability and learnability of the website. It will capture the user experience and would be taken as a feedback from the participant after the use of the website.
4. Time taken and error made: The total time to complete the task along with the count of errors made while completing them proved to be a good parameter for analyzing usability.
5. T Test: It would be used to reject the null hypothesis that the new prototype is not different from the original website. It would be conducted on data related to time spend, error made and the system usability scale.

2.3 Task #1

2.3.1 Task Detail #1

The first task involves finding out the details about admission requirement for Graduate, Undergraduate or International student. Since most of the visitors to a university's site are students who seeks to be admitted in the university, it is one of the most sought information before starting an application process.

2.3.2 Task #1 Analysis

The first task required the user to find information about International student requirement. In the original website, the information was present under the Graduate page rather than International Page. 66% of the user were not able to accurately predict the information from the homepage and took some time to determine the actual link that may contain the information. The mean time taken to accomplish this task was 142 seconds which ranged from 85 to 240 seconds. A total of four wrong pathways were taken by the three participants to reach the required information.

The same task when performed on the prototype suggested improvement in ease of access. 66.67% of the user found it very easy to reach the required information while 33% reached the same with one navigation confusion. On an average, it took 68.3 seconds for the participants to complete the task and the time taken varied from 53 seconds to 87 seconds.

The T test on the time taken to complete the task shows a value of 4.75, which rejects the null hypothesis.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
VAR00001	Equal variances assumed	12.926	.023	4.752	4	.009	2.93667	.61794	1.22100	4.65233
	Equal variances not assumed			4.752	2.036	.040	2.93667	.61794	.32251	5.55082

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 /MISSING=ANALYSIS
 /VARIABLES=VAR00001
 /CRITERIA=CI(.95)
```

2.3.3 Task #1 Discussion

With removal of unwanted cluttered animation, the cognitive load on working memory was reduced as there were less information to be processed at a given time. The animations also gave rise to split screen effect which was also reduced with a simpler interface. Visual clutter, annoying distraction and confusing navigation were removed which led the user to find the information in less time.

2.4 Task #2

2.4.1 Task Detail #2

After looking for admission requirements for various kind of students, user would look for the information regarding course that would interest them. This requires the courses to be found from the menu or the course page and visit it for more information. The course detail page would then be looked for the required information such as the course requirements, cost of attendance and application procedures.

2.4.2 Task #2 Analysis

The second task required the user to find the information such as tuition cost from courses Advancing Computer Science and Game art and Animation. The mean time taken to complete the task was 247 seconds with standard deviation of 76 points. Nine times participants made error to complete the task out of which 6 times was wrong pathway and 3 times were due to navigation confusion and wrong terminology.

While performing the task on the prototype, a significant improvement was shown in terms of time taken which was reduced from 247 seconds to 86 seconds with a standard deviation of 29. All the users said that it was easy to find out their way to the information from the home page. There were two wrong pathways taken due to a redundant button in the course interface.

The T test on the time taken to complete the task shows a value of 3.42, which rejects the null hypothesis.

Group Statistics

	VAR00002	N	Mean	Std. Deviation	Std. Error Mean
VAR00001	1.00	3	247.3333	76.00219	43.87989
	2.00	3	86.3333	29.16048	16.83581

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
VAR00001	Equal variances assumed	3.176	.149	3.426	4	.027	161.00000	46.99882	30.51036	291.48964
	Equal variances not assumed			3.426	2.576	.052	161.00000	46.99882	-3.49543	325.49543

2.4.3 Task #2 Discussion

The reducing of the size of the page led to presentation of lesser information to the user at a time; hence reducing the perplexity of the page. This also tend to reduce the cognitive load which made users more comfortable with the navigation. The physical load of scrolling could also be removed by using divided sections within the same page.

2.5 Task #3

2.5.1 Task Detail #3

The last task is applying to a specified course after having gone through all the required information. The task begins with looking for the right application form to fill as different forms are available for different courses and for international students. Only the required fields are needed to to filled.

2.5.2 Task Analysis #3

The last task required the participants to apply to any of the course as an International applicant. All of participants filled the wrong form as no one was able to reach the right form for the international applicant. 66% of the participant accepted that it was not easy to reach the form from the home page. The mean time spent on the task was 495 second, while two of the three participants were unable to complete the task due to being stuck in a wrong validation issue. The participants faced 5 confusing elements on an average and moved back and forth 7 times to make sure what mistake has been made.

While completing the same task on the prototype took a mean time of 232 seconds which is significant improvement from the original site. All the users were successfully able to complete the task in this time. All the participants accepted that it was very easy to find the location of the form and navigation was simple. With proper validation, no one got stuck too long at a point and an average of just one error was made due to terminology of form element.

The T test on the time taken to complete the task shows a value of 5.75, which rejects the null hypothesis.

Group Statistics

	VAR00002	N	Mean	Std. Deviation	Std. Error Mean
VAR00001	1.00	3	495.3333	41.40451	23.90490
	2.00	3	232.0000	67.61657	39.03844

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
VAR00001	Equal variances assumed	1.643	.269	5.753	4	.005	263.33333	45.77602	136.23871	390.42795
	Equal variances not assumed			5.753	3.315	.008	263.33333	45.77602	125.17956	401.48710

2.5.1 Task Discussion #3

The forms present small area of usage with small font sizes. This increases the pressure on user with low eyesight. The expansion of form area would simplify the process and would remove the design inconsistency. This would lead to less chance of abandonment of the system. The percentage of task completed would able to give the user an idea of completion time and encourage them to keep moving. The number of steps to accomplish the task would also help in reducing the time taken for the job.

3 Prototype and Design

3.1 Overview of Prototype and Design Features

3.2 Task #1

3.2.1 Task #1 Design

For the purpose of better information retrieval, the home page needs to be redesigned. A new style of menu along with new footer design is needed. The redundant menu items would be removed and confusing links would to be replaced with unambiguous ones. I make the task simple and visible, thus producing a smooth experience.

3.2.2 Task #1 Design Justifications

The various design decisions are mentioned as follow:

1. Redesigning the look and feel of the home page.

. **Justification**: Since according to heuristic evaluation of the original website, the homepage layout is not clear and cluttered with animations that takes time at loading and *creates annoying distraction*, it has been redesigned. The name of the university is brought to the central top part of the page because the page layout design guideline states that this is the where the users usually look to validate the website they have reached. It's also helps in establishing level of importance.

2. Revamping the menu.

. **Justification**: The menu needed larger space so as to increase the clickable area. Use proper text on plain, high-contrast backgrounds were needed according to *text appearance guidelines*. The submenus were replaced by granting them space on the main menu to *reduce the physical task* of opening each menu items to locate an item. Redundant menu provides *too much flexibility* and confuses the user and hence the redundancy was removed.

3. Footer Updated

   Justification: The footer contained the name of the available courses which is not a norm among educational websites. Looking from the perspective of *encoding effect*, user might not look at the end of the page for course links. None of the test participants tried to reach the end of the page for the same information. The social media icons were moved from middle of the page to the footer region as the formal had a *non-intuitive design*.

3.2.3 Task #1 Prototype

Link to Original Website - http://www.uat.edu/
Link to Prototype - http://o3stoa.axshare.com/#g=1&p=home

For facilitating the task of information retrieval, the home page has been redesigned. The cluttered animation is replaced by static images and name of the university at the top center of the page.

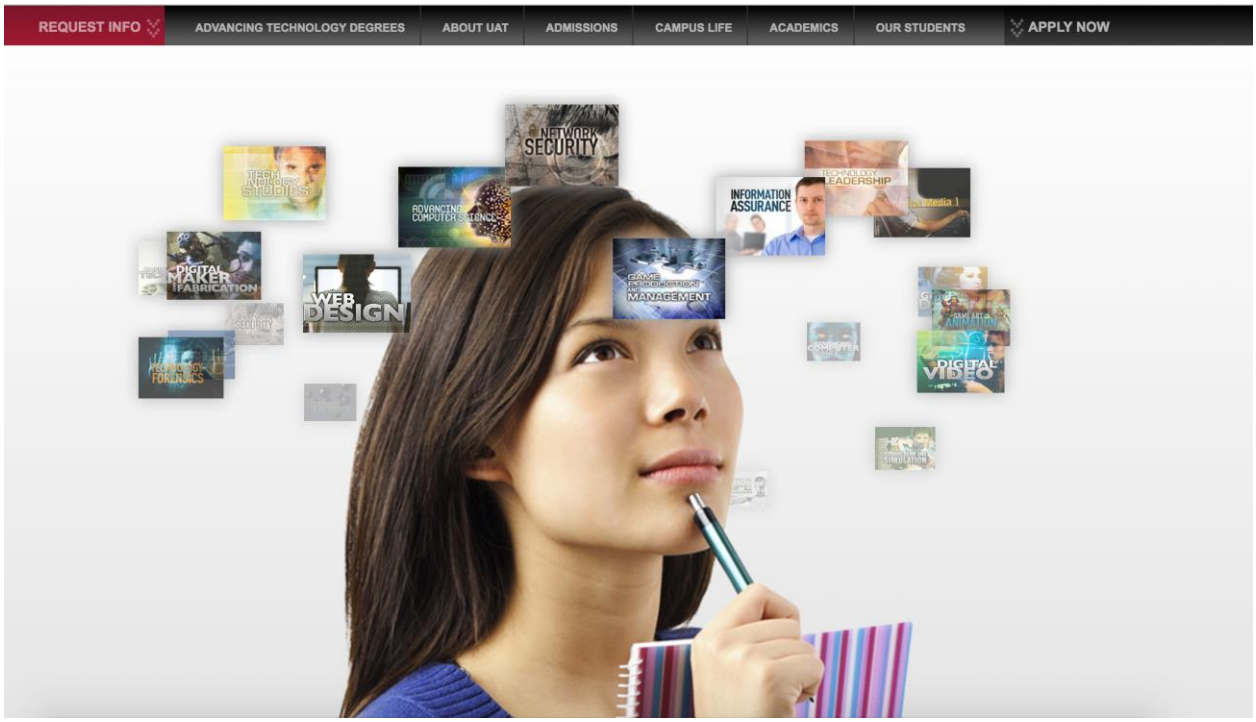


Fig. 1 Homepage on original website

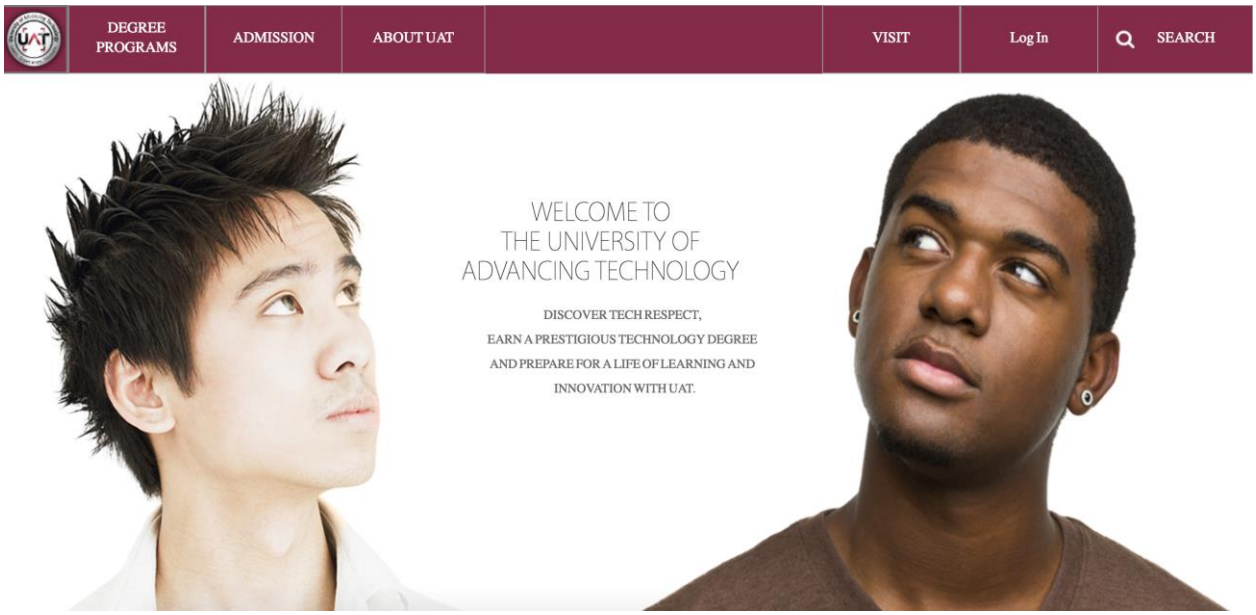


Fig. 2 Homepage on new prototype.

- The information that appears in the form of pop up animation has been detailed out at proper locations.

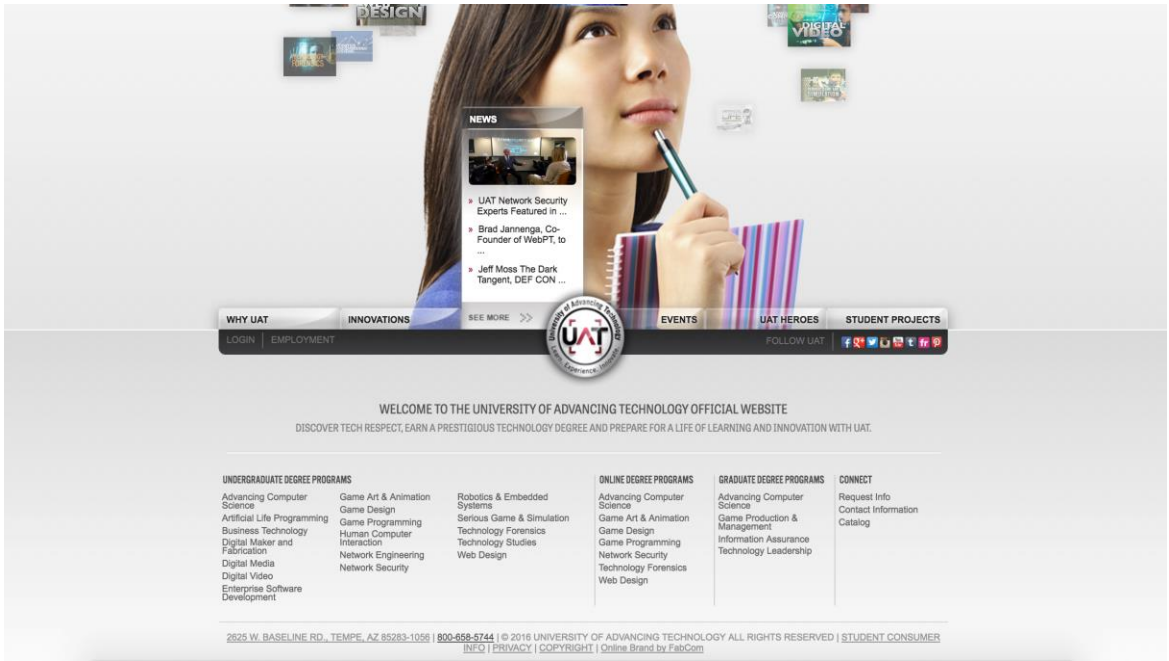


Fig. 3 Information and footer on original website.

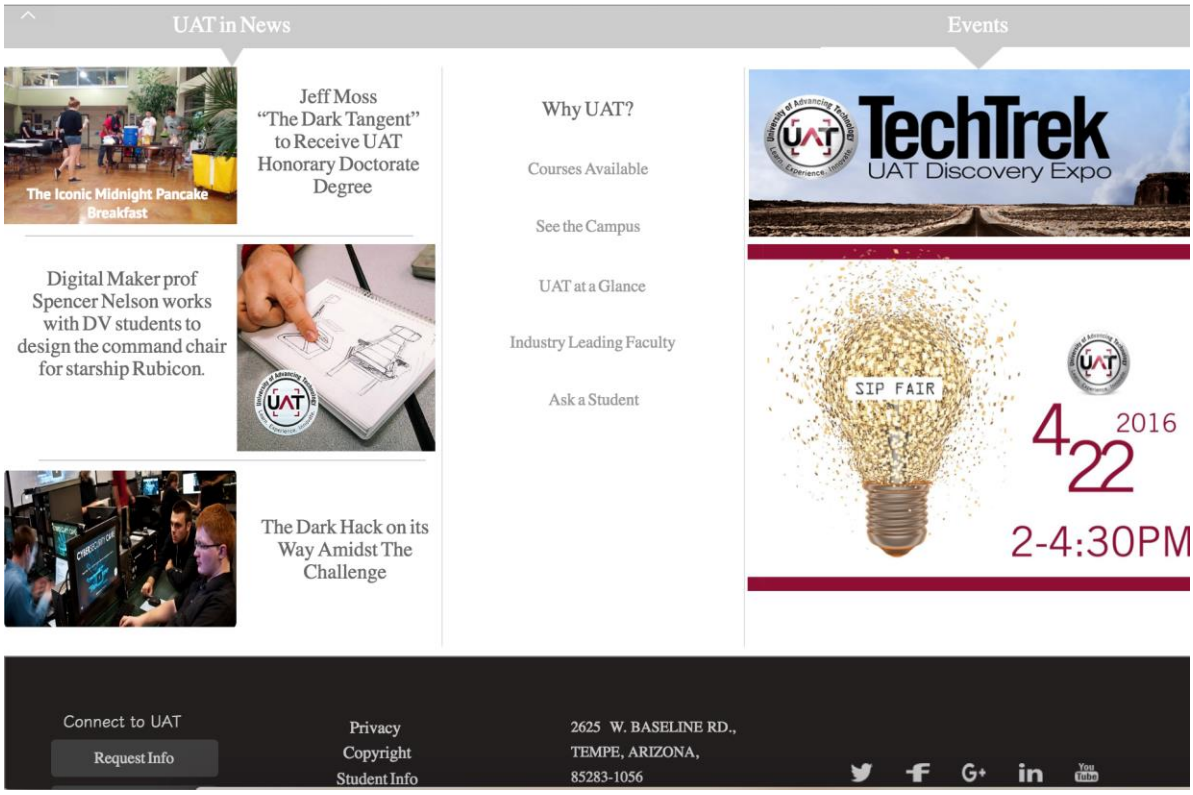


Fig. 4 Information and footer on new prototype.

- The menu has been revamped with larger space dedication and better font size, color and style. The submenus have been dedicated a specific location rather than being able to access on mouse over on primary menu items.

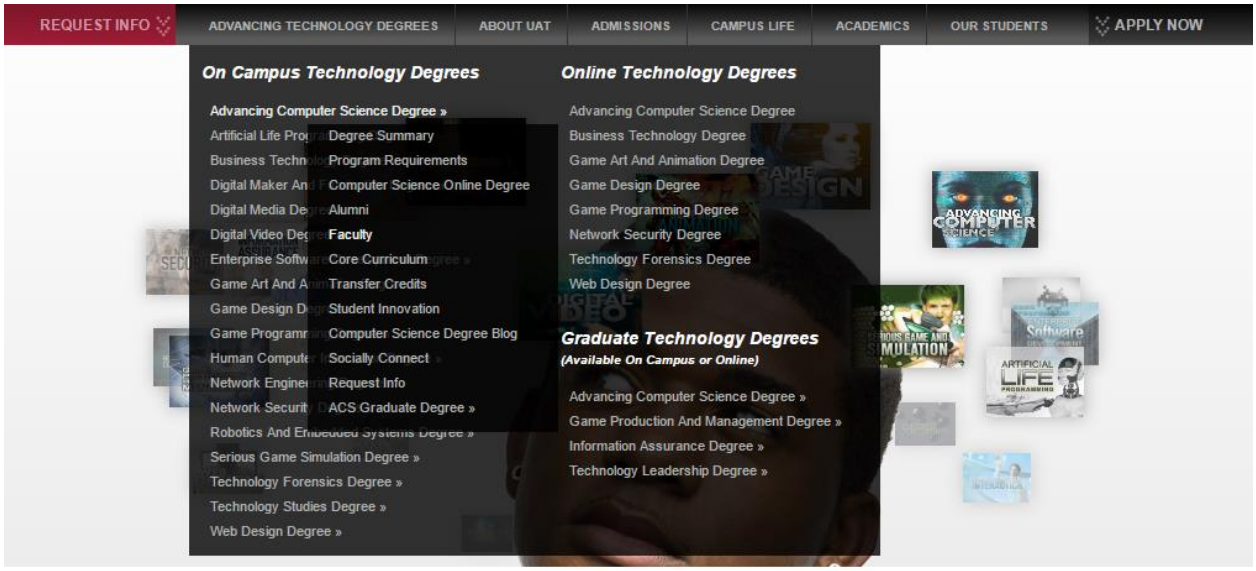


Fig. 4 Complex Small Menu on Original Website.

Fig. 5 Larger and Clear Menu on new prototype.

3.2.3 Task #1 Prototype Rational

With removal of unwanted cluttered animation, the cognitive load on working memory was reduced as there were less information to be processed at a given time. The animations also gave rise to split screen effect which was also reduced with a simpler interface. Visual clutter, annoying distraction and confusing navigation were removed which led the user to find the information in less time.

3.3 Task #2

3.3.1 Task #2 Design

The course detail page needs to be divided into smaller pages which could be accessed using dynamic panel without scrolling. All the information should stay in the same page so that the users need not keep moving back and forth among multiple pages for related information. For example, the information regarding total cost of the course was moved from *unpredictable* link to the same page.

3.3.2 Task #2 Design Justifications

The various design decisions are mentioned as follow:

1. The too long page was divided into subpages.

   Justification: According to page design principle, moderate length page should be used to which *reduces physical load* of too much scrolling. The information scattered all through the page was brought under proper heading with internal link present in an accordion menu. This facilitated scanning and minimized the number of time user has to go to external link seeking related information.

2. The related information present in external links are moved to the course detail page.

   Justification: 75% of users were not able to find the tuition cost due to unclear and undescriptive link (User testing and Heuristic Evaluation). *Use of jargons* to specify link was also replaced by simple worded links. This *minimizes the number of steps to accomplish tasks* and also minimizes control actions and movements.

3.3.3 Task #2 Prototype

The inconsistent page looks have been given a new consistent look with rest of the website. The scattered information is aligned in one dynamic panel and the links to the headings are made part of the accordion menu placed on left side of the screen. This facilitates user to quickly look for required information.

The information present in external link (For example, Bachelor Disclosure) is moved to the same page and made part of the accordion menu to increase the accessibility.

Link to Original Website - http://majors.uat.edu/Game-Art/?_ga=1.95097756.1215048487.1468002888

Link to Prototype - http://o3stoa.axshare.com/#g=1&p=game__art___animation

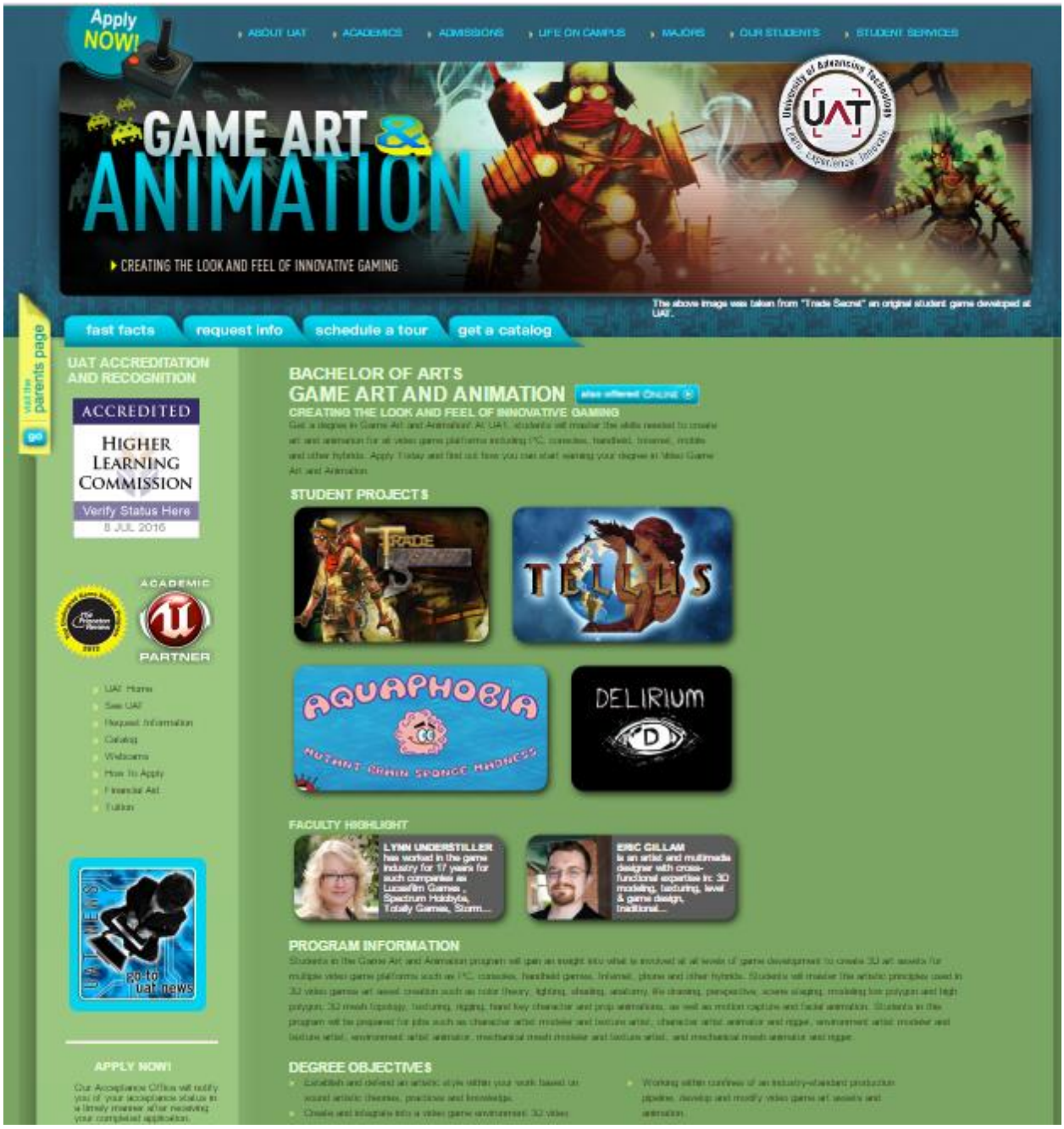


Fig. 4 Course Info on original website

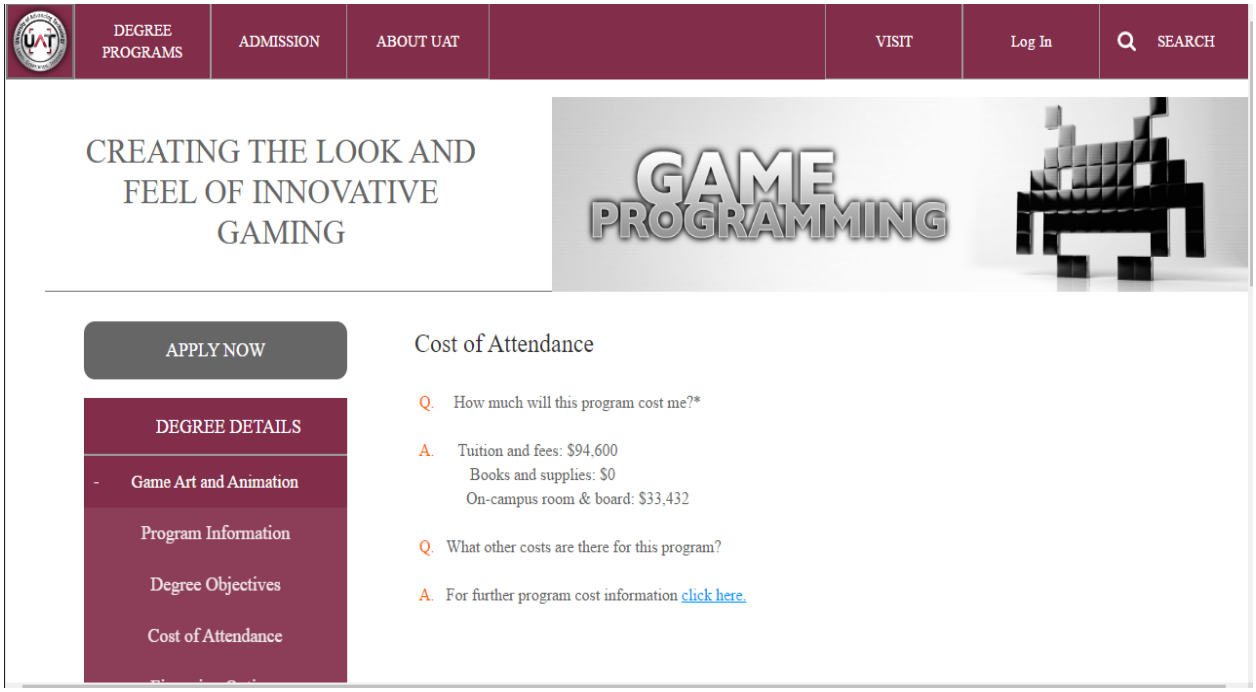


Fig. 4 Course Info on new prototype.

3.3.1 Task #2 Prototype Rational

The reducing of the size of the page led to presentation of lesser information to the user at a time; hence reducing the perplexity of the page. This also tend to reduce the cognitive load which made users more comfortable with the navigation. The physical load of scrolling could also be removed by using divided sections within the same page.

3.4 Task #3

3.4.1 Task #3 Design

The registration form is given a new structure and format. Different kind of forms for graduate, undergraduate and international student has been replaced by a single form which dynamically adjust itself as per the user's identity. Being moved from the left third of the screen, it has been dedicated the central part of the screen. Required and optional form fields are clearly indicated. The small hardly visible cross icons which showed the progress has been replaced by larger icons with name of the information type present in that part of the form. Formal validation style has been introduced and the part with error is clearly marked with proper colored icons. The user could at any instant go back to required part to make changes rather than going via all the intermediate pages by pressing the 'previous' button.

3.4.2 Task #3 Design Justifications

The various design decisions are mentioned as follow:

1. A single registration form for all kind of students is created and the form has been moved from the left to the central part of the screen and has been dedicated more screen area.

Justification: Having multiple kind of forms for the same purpose confuses the user and is an example of *design inconsistency*. Having too much information around the form *leads to annoying distraction*. As seen from the heuristic evaluation, complex form is broken up into readily understood steps and sections. Where a process is used a progress indicator is present with clear numbers or named stages.

2. The small hardly visible cross icons which showed the progress has been replaced by larger icons with name of the information type present in that part of the form

Justification: As seen from the heuristic evaluation, complex form is broken up into readily understood steps and sections. Where a process is used a progress indicator is present with clear numbers or named stages. It helps in reducing the frustration and abandonment of system when user is unclear for how long the process if going to take.

3. Required and optional form fields are clearly indicated.

Justification: All the users taking part in the test were unable to identify the difference between the required and unrequired fields and decided to fill them despite of clear instruction to not fill them. After making the changes, 2 out of 3 users successfully ignored the unrequired fields thus ameliorating the registration process.

4. Formal validation style has been introduced and the part with error is clearly marked with proper colored icons.

Justification: The lack of proper validation style and *inadequate error messages* leads to modification of expected task and *partial use of the system.* The removal of hidden forms helps in minimizing the number of steps to accomplish tasks. Errors are made clear, easily identifiable and appear in appropriate location (e.g. adjacent to data entry field, adjacent to form, etc.) as suggested in heuristic evaluation. The green tick on correct filling of data gives the users a sense of accomplishment that they are going in a correct path.

3.4.3 Task #3 Prototype

The common registration form is redesigned and brought in to cover the most part of the screen.

The complex form is broken up into readily understood steps and sections. Progress indicator is simple and clearly visible.

Link to Original Website - https://uatfastapp.com/LPR.asp?L=284

Link to Prototype - http://o3stoa.axshare.com/#g=1&p=sign_up

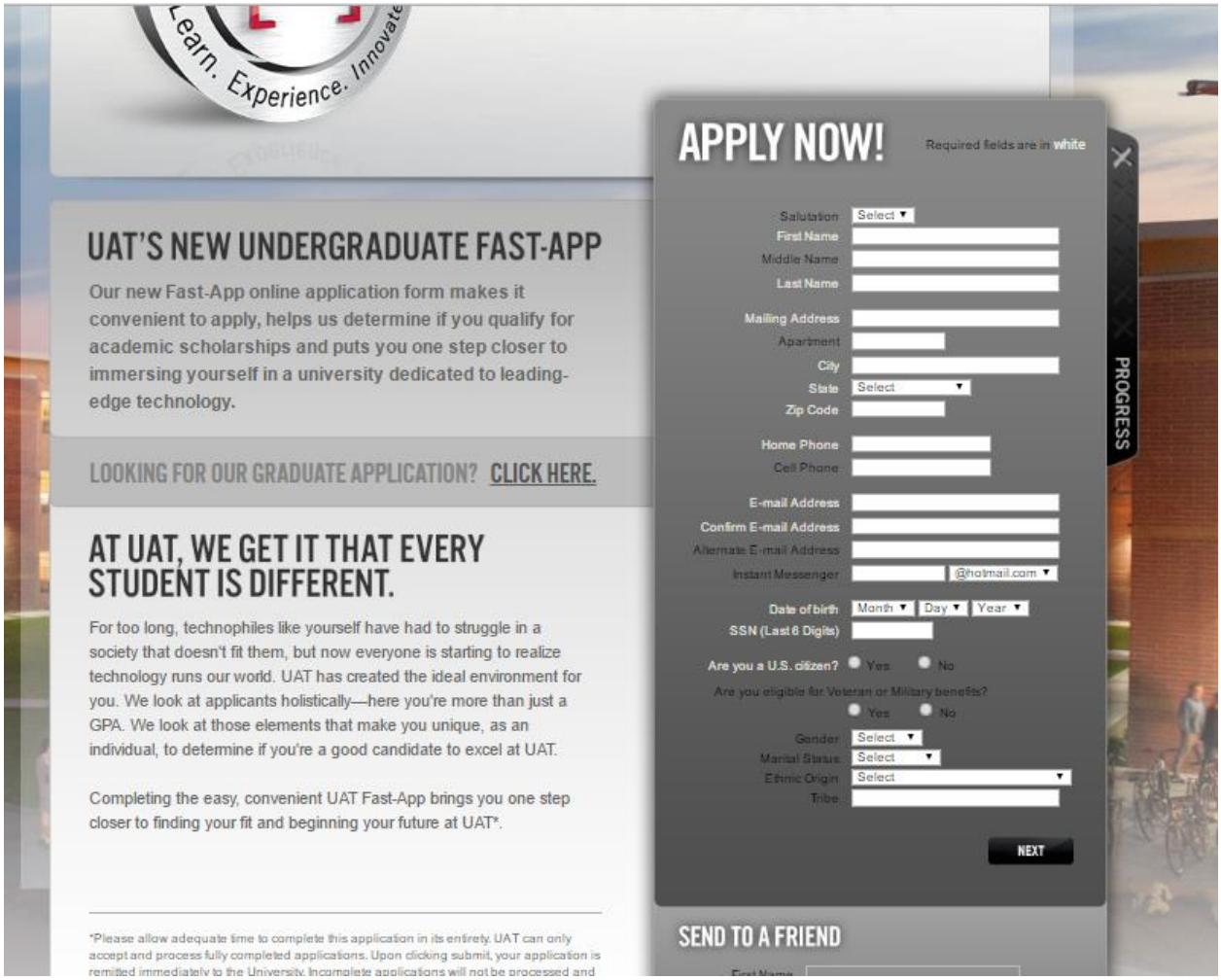


Fig. 4 Admission Form on Original website.

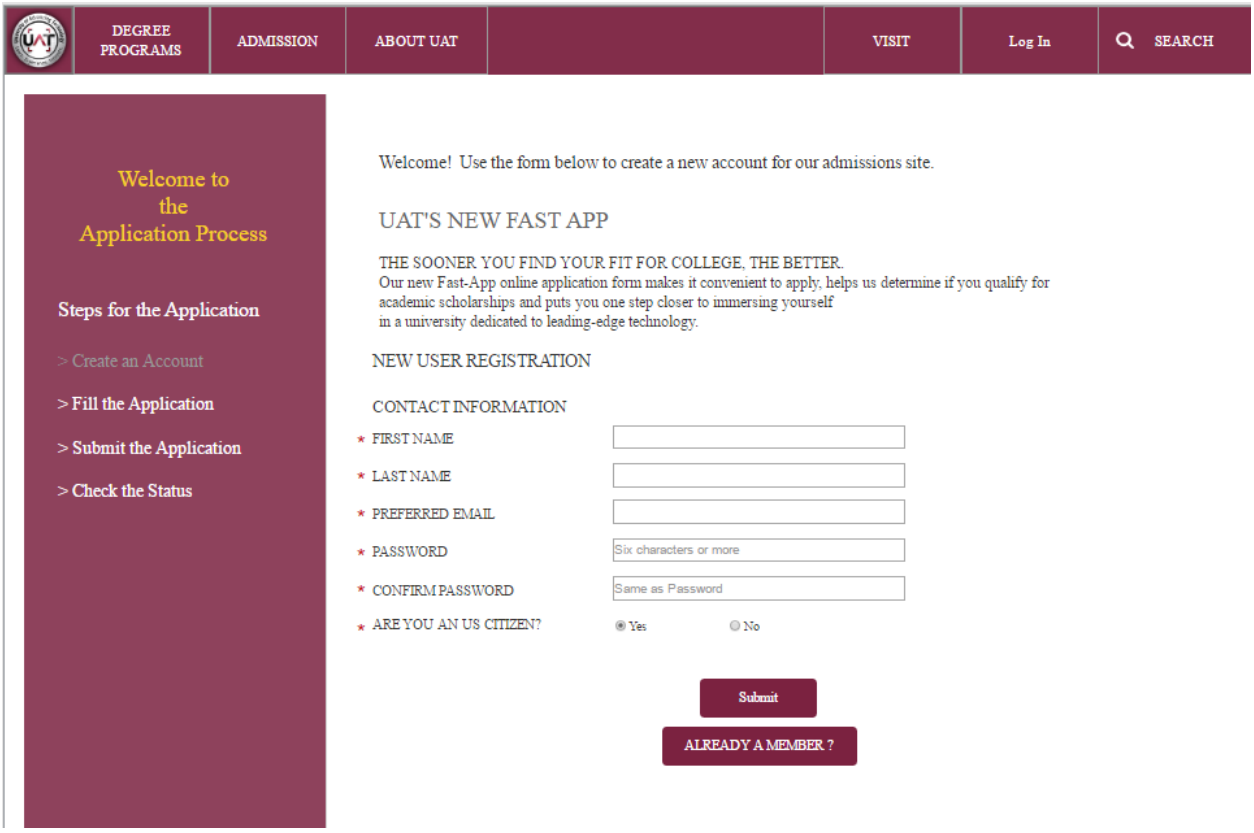


Fig. 6 Admission Form on new prototype.

Proper validation is introduced. It assigns a red cross adjacent to the form element if the required element has been left unfilled or the password requirement has not been meant. The green tick is given on correct filled data.

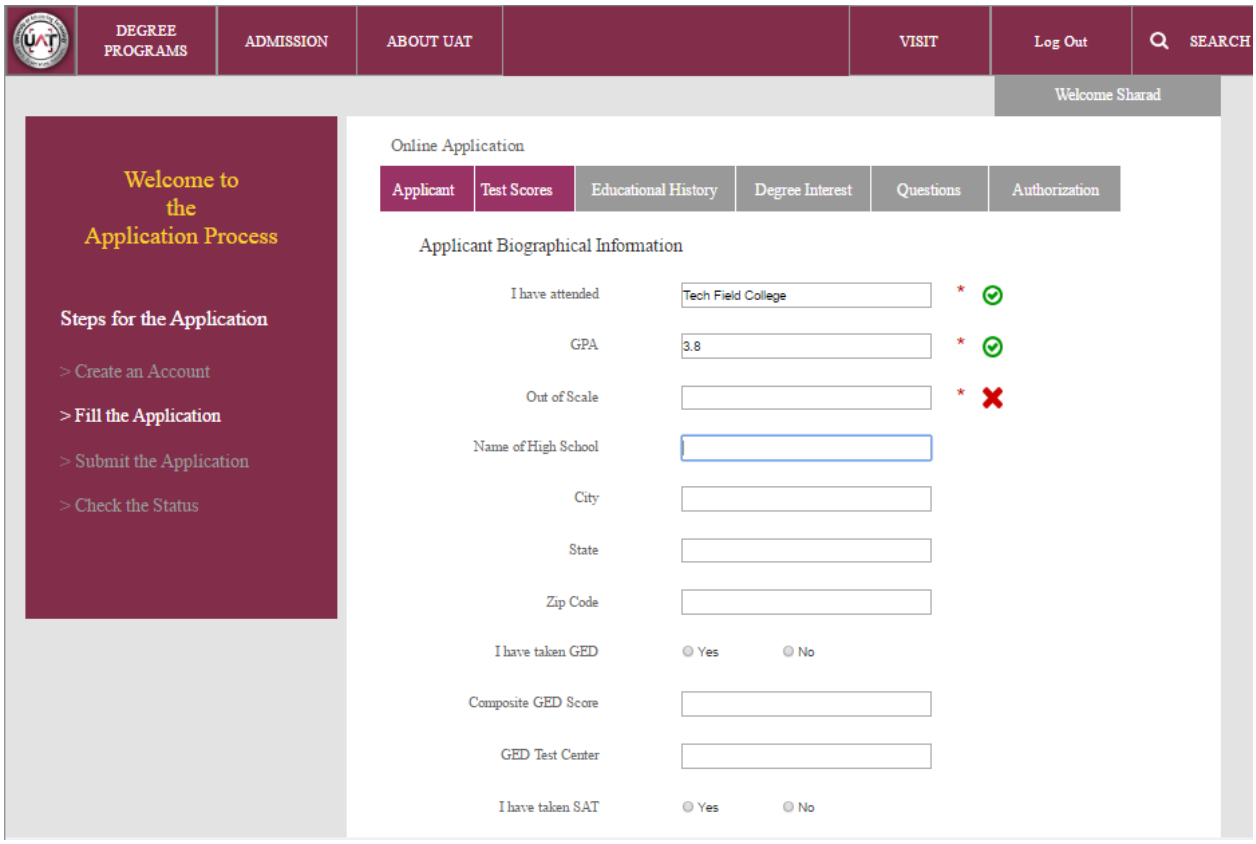


Fig. 4 Admission Form with validation and progress status on new prototype.

3.4.3 Task #3 Prototype Rational

The forms present small area of usage with small font sizes. This increases the pressure on user with low eyesight. The expansion of form area would simplify the process and would remove the design inconsistency. This would lead to less chance of abandonment of the system. The percentage of task completed would able to give the user an idea of completion time and encourage them to keep moving. The number of steps to accomplish the task would also help in reducing the time taken for the job.

4 A/B Testing

4.1 Participants

For the purpose of testing, six people took part as participants. The age of the participants varied from 22 to 39 years. Four out of six had an experience of applying to the universities online while two of them were novice in such field. Four of the participants were students, one was a corporation worker and one was parent to a school kid. The participants came from 3 nations, from Asia, South America and Europe, of which only two had their native language as English. Such diversity helped me to justify that the website offers convenience to users lying in different part of the spectrum.

4.2 Scenarios

The scenario consisted of three tasks from identification of information to registration for the university. The document consisting of the scenario can be found here.

Following are the path identified for each of the task.

Task 1. Find the Admission Requirements for the Graduate, Undergraduate or International Students.

Main Path Identified

Go to Admission tab on Menu -> How to Apply -> Graduate

Alternate Paths

1. Go to Admission tab on Menu -> How to Apply -> International -> Select Admission from tabs -> Scroll to International Requirement.
2. Search for the information in search tab.

Task 2. Find the information about a selected course. The information may consist of,

- Cost of Attendance
- Deadlines to submit the Application
- Application Link

Main Path Identified

Go to Degree tab on Menu -> Select course name -> Bachelor Disclosure (Original Website)

Go to Degree tab on Menu -> Select course name -> Click on relevant Information tab (Prototype)

Alternate Paths

1. Go to Degree tab on Menu -> Select course name -> Tuition
2. Go to Degree tab on Menu -> Select course name -> Fast Facts -> Look for course name -> Click Disclosure
3. Search for keywords through search option.

Task 3. Apply to a given course as an international applicant by filing all the required details.

Path Identified

Go to Admission tab on Menu -> Select International Applicant -> Select Apply Now (Prototype)

Go to Admission tab on Menu -> How to Apply -> International Applicant

Alternate Paths

(Following paths opened application not made specifically for international applicant, but was used by 2 out of 3 users)

Go to Degree tab on Menu -> Select Undergraduate or Graduate -> Apply Now

Go to Apply Now on Main Menu

The documents containing instructions and guidelines are present in the appendix.

4.3 Equipment

The equipment considered for the survey are listed as following:

1. Laptops with Chrome or Safari browsers (The original website fails to open properly on some version of Internet Explorer) and Skype installed.
2. Screen Capture through QuickTime. The user's task was observed by making them share their screen through Skype. This prevented any intervention from my side and made them feel more comfortable and convenient doing their task with no one observing them from back.
3. Stop Watch was used to record the time taken for each task by all the users.
4. Camera: Facial Expression such as sense of accomplishment or frustration was observed using the web camera and broadcasted via Skype.
5. Microphone was used by some users who accepted to think aloud their process. Those voices were observed to determine what paths are they taking and what makes them think that it's a right path.

4.4 Subjective Metrics

Following subjective metrics were used to determine the usability of both websites.

1. System Usability Scale: The usability of the website was measured by asking the participants about following subjective measures. The participants were required to reply in a 5-Point Likert scale which varied from Strongly Disagree to Strongly Agree.

- Ease of Use
- Difficulty with the system
- Requirement of technical help to complete the task
- Complexity and consistency of the website
- Prior knowledge required for using the website

2. Questions related to navigational ease were also part of feedback form. Participants were required to reply in terms of Liker Scale how conveniently they were able to locate the required information.

3. Comfort and Frustration Level – These levels were judged by observing their screen and their face with the help of Skype. Going back and forth in the same page showed the frustration which led to dropping of task in 1/3rd of total cases. Easily accessible information led them to move to other task with confidence.

4. Back ground and Post Session Questionnaire - These questions could be found in the appendix.

4.5 Quantitative Metrics

The various metrics used to test the usability of the system are follow:

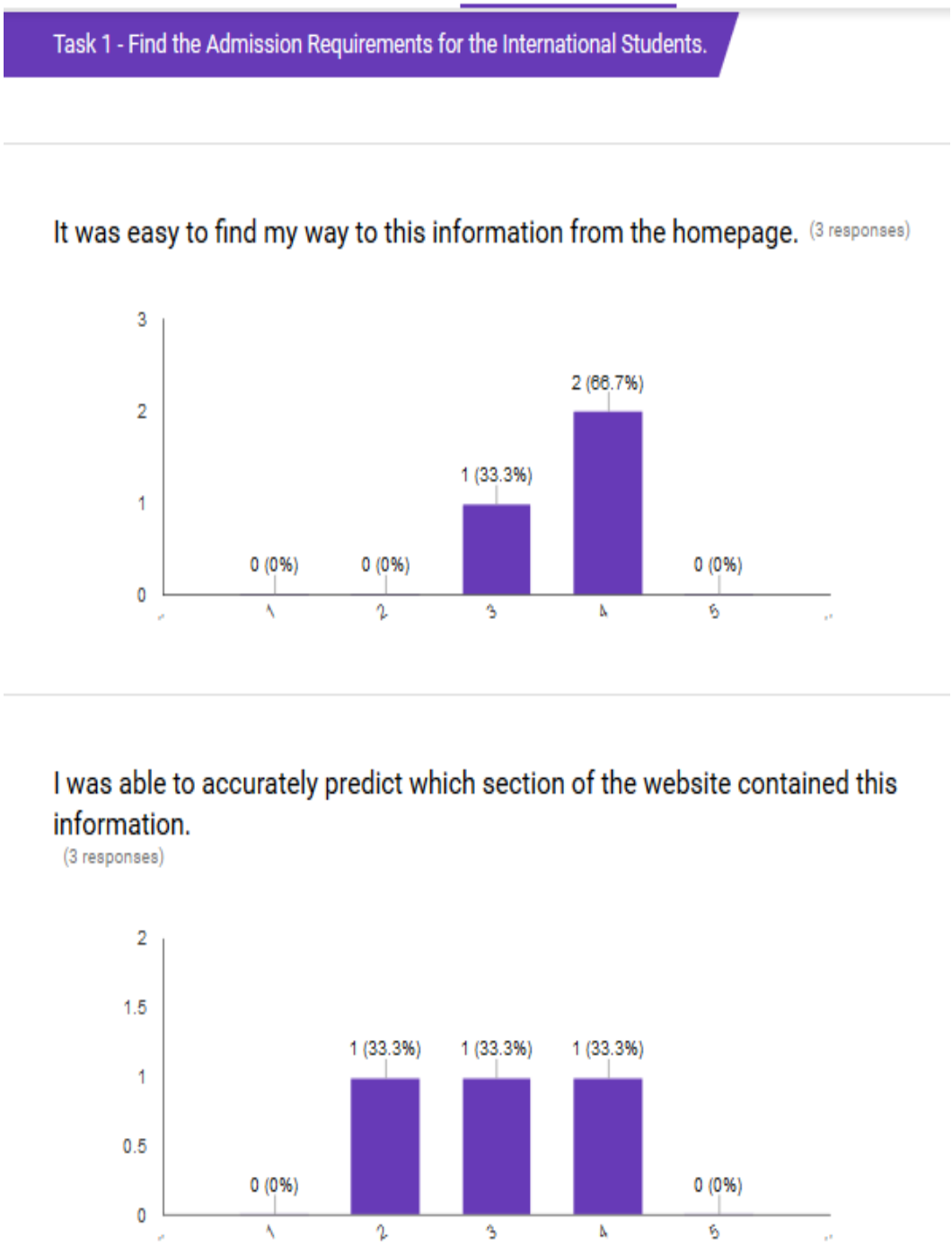
1. Time spent on completing each task: For all the three tasks, the overall time taken for the successful completion was recorded using a stop watch. It shows how quickly the user could find a given information and what time does it take to complete the registration form. If the time taken was more than general expectations, a redesign was needed which could minimize the amount of time spent.
2. Path Deviation: If every user used a different path to retrieve an information, it shows inconsistency on design of the website. The expected path was the simplest path through which the user could

find a given information. The number of time the user deviated from the expected path showed that the navigation is confusing and menus are not clearly laid.

3. Time spent not moving toward goal: The participant sometimes found themselves stuck with a task. Unnecessary menu and links are being tried as an unsuccessful attempt to get the job done.
4. Ratio of success and failure: The participants could have failed to complete few tasks. This number of success to failure gave an idea of how often the user might abandon the system due to failure in performing a task.
5. Number of errors encountered: For the 3rd task of registration to the university, the number of errors made while filling the form showed the inadequacy of right information required to flawlessly fill the form. Lack of proper help and guideline, unnecessary hidden fields and lack of validation leads to error. This suggested the change required in the registration process.

4.6 Test results

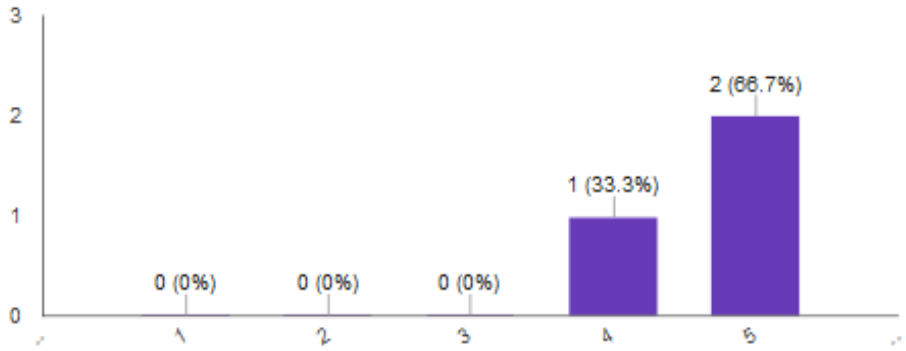
- The usability test for convenience in performing a given task was done through two questions about location of the information. Below graphs presents the result of that feedback.



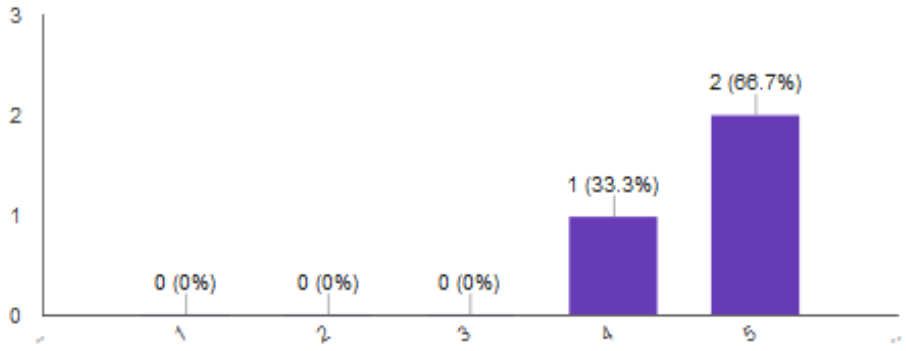
—Fig 4.1 For the Original Website

Task 1 - Find the Admission Requirements for the International Students.

It was easy to find my way to this information from the homepage. (3 responses)



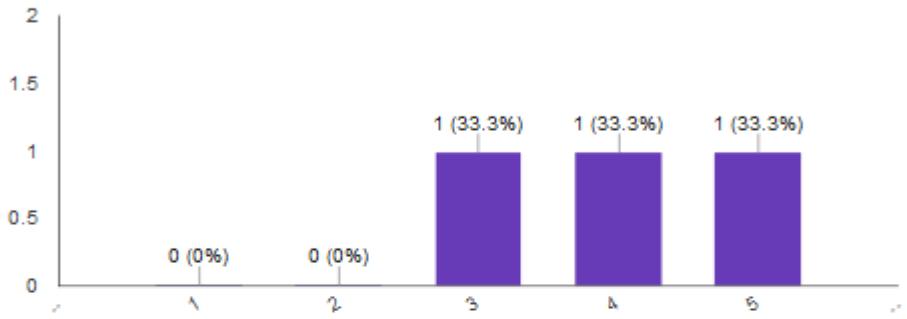
I was able to accurately predict which section of the website contained this information.
(3 responses)



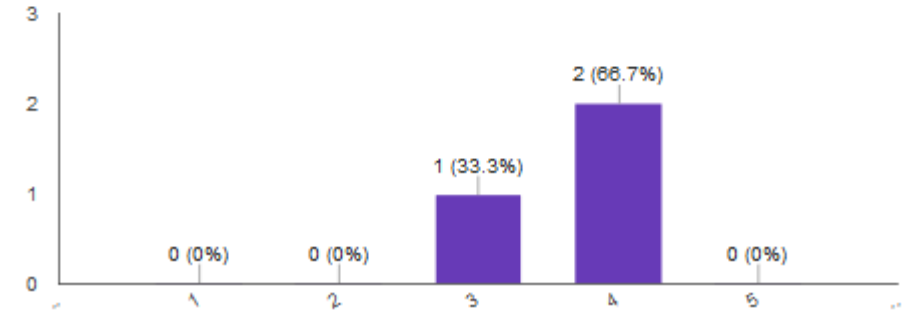
—Fig 4.1 For the Prototype Website

Task 2 - Find the information about 'Game, Art and Animation' course.

It was easy to find my way to this information from the homepage. (3 responses)



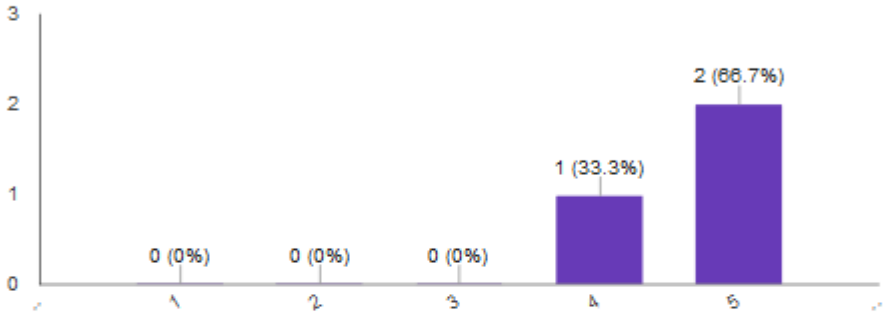
I was able to accurately predict which section of the website contained this information.
(3 responses)



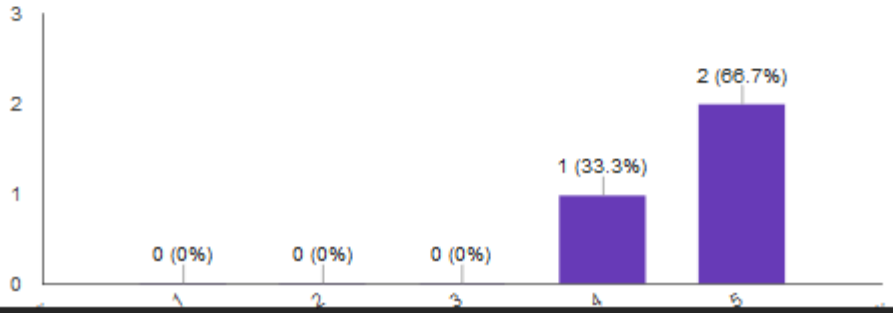
—Fig 4.3 For the Original Website

Task 2 - Find the information about 'Game, Art and Animation' course.

It was easy to find my way to this information from the homepage. (3 responses)



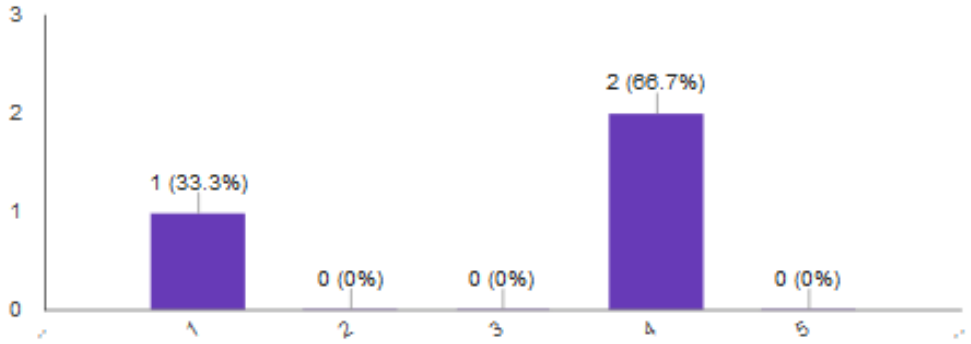
I was able to accurately predict which section of the website contained this information.
(3 responses)



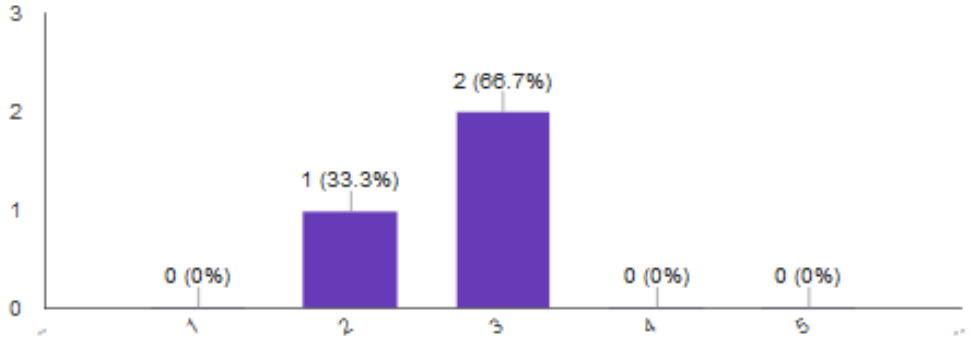
—Fig 4.4 For the Prototype Website

Task 3 - Apply to Game Art and Animation course as an applicant.

It was easy to find my way to this information from the homepage. (3 responses)



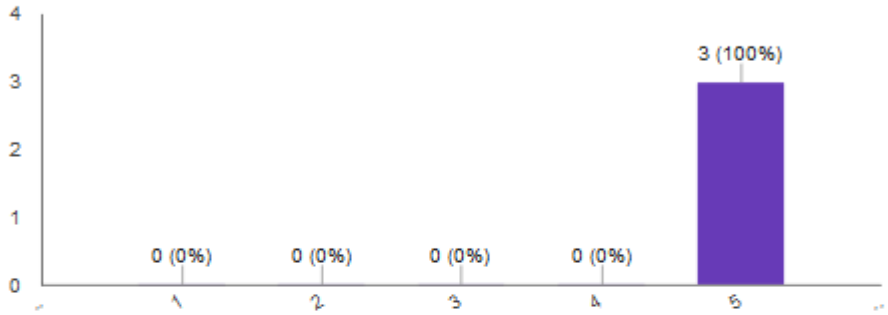
I was able to accurately predict which section of the website contained this information.
(3 responses)



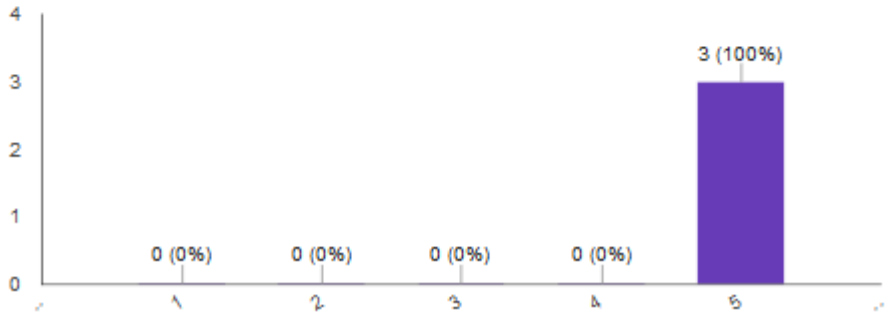
—Fig 4.5 For the Original Website

Task 3 - Apply to Game Art and Animation course as an applicant.

It was easy to find my way to this information from the homepage. (3 responses)



I was able to accurately predict which section of the website contained this information.
(3 responses)



—Fig 4.6 For the Prototype Website

- The time taken for each task to be performed in both the original website and the developed prototype is shown in the following spreadsheet.

	Time taken on Original Website	All the data are represented in seconds			Time taken on Developed Prototype	All the data are represented in seconds	
	Participant 1	Participant 2	Participant 3		Participant 1	Participant 2	Participant 3
Task 1	240	85	104		53	65	87
Task 2	185	225	332		69	70	118
Task 3	502	533	451		190	195	310

- The following table represents number of errors made while performing the tasks. The types of errors made are:
  1. Navigational Issues
  2. Wrong Pathways
  3. Terminology
  4. Confusing Layout

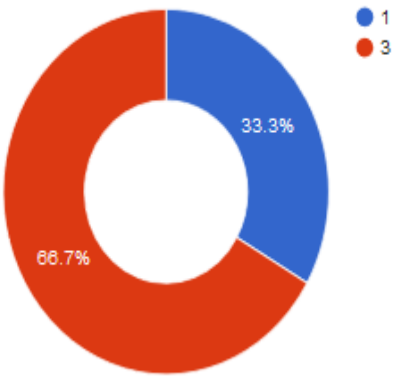
Errors Made

	Original Website	All the data are represented in number of errors made			Developed Prototype	All the data are represented in number of errors made		
	Participant 1	Participant 2	Participant 3		Participant 1	Participant 2	Participant 3	
Task 1	2	1	1		0	1	1	
Task 2	3	2	4		0	0	2	
Task 3	6	4	4		1	1	0	

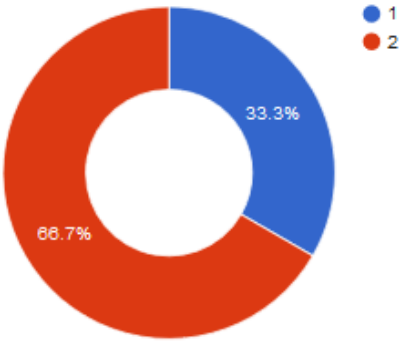
- System Usability Scale: The following pie charts represents the user response for each quiestion in Likert Scale varying from 1 to 5 which represnts Strongly Disagree to Strongly Agree respectively.

For the original Website

I think that I would like to use this website frequently.

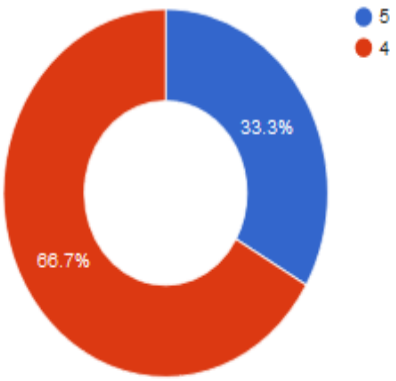


I found the website unnecessarily complex.



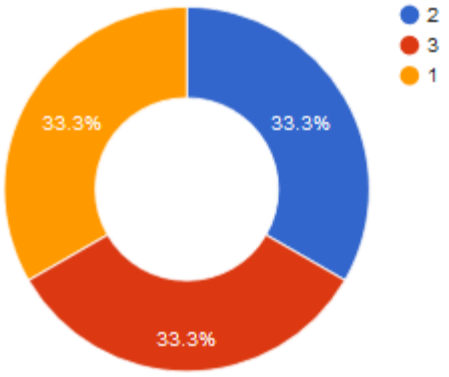
For the Prototype Developed

I think that I would like to use this website frequently.



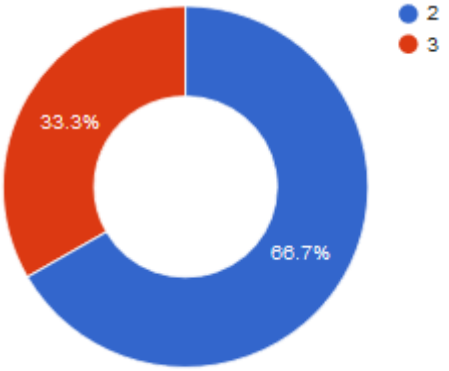
I found the website unnecessarily complex.

I think that I would need the support of a technical person to be able to use this website.



I think that I would need the support of a technical person to be able to use this website.

I found the various functions in this website were well integrated.



I found the various functions in this website were well integrated.

I thought there was too much inconsistency in this website.

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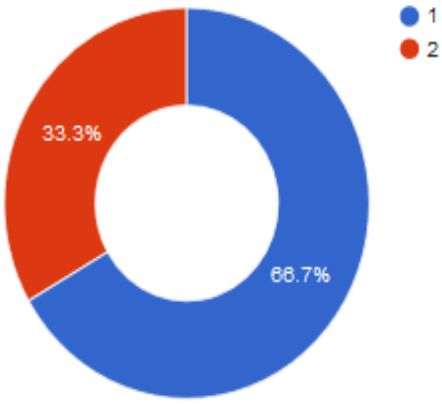
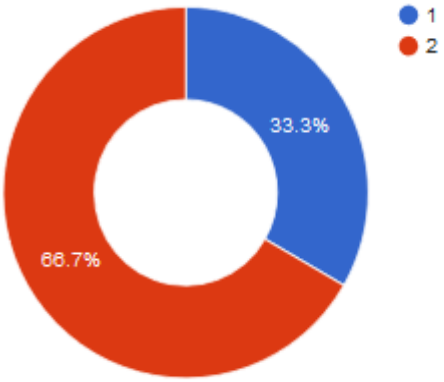


I would imagine that most people would learn to use this website very quickly.



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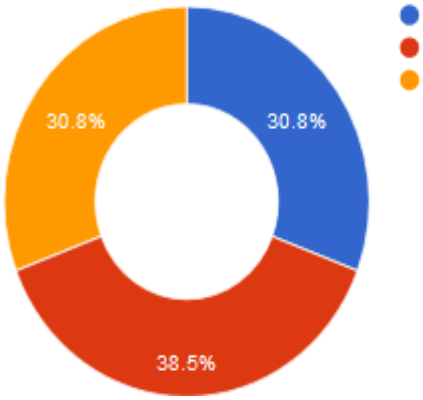
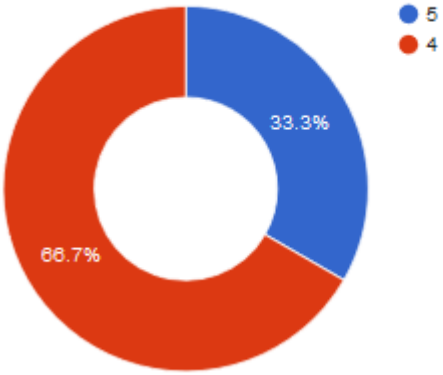
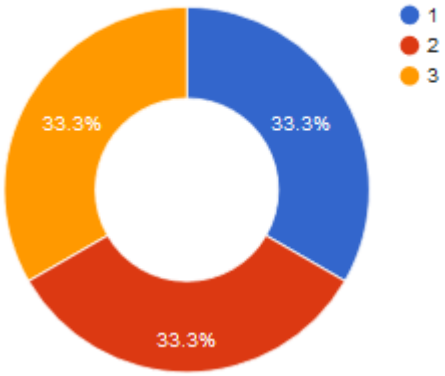


I found the website very cumbersome to use.

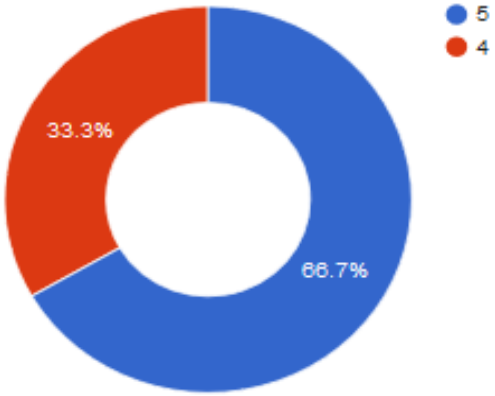


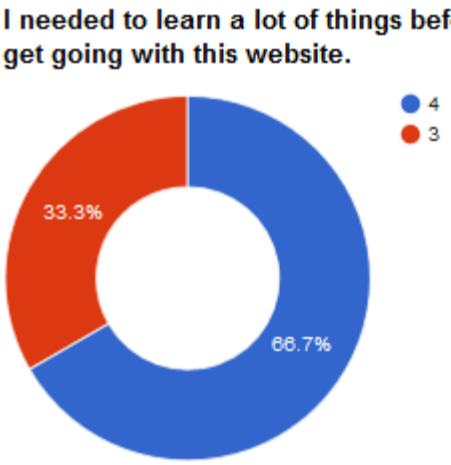
I found the website very cumbersome to use.

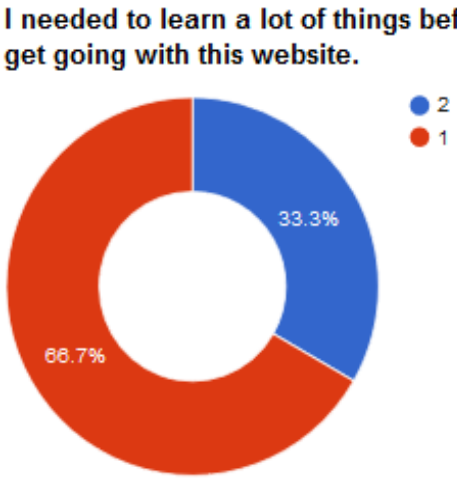
I felt very confident using the website.



I felt very confident using the website.







The following are the T-test result of various parameters.

5 Conclusions

5.1 Discussion of Results

The original website possessed a great number of shortcomings which ranged from design inconsistency, visual clutters, split screen affects, poor form design, lack of validations, poor menu styles to confusing navigation. Each of the specific issues were handled in the prototype using various concepts of Human Computer Interaction. The testing was conducted among 6 participants, with half on each original and prototype respectively. Statistical analysis as well as post session interview showed how the usability of the website considerably improved in the redesigned prototype. Yet a lot need to be changed about the website which was beyond scope of this project. A complete new design for the employability page and links needs to be done so as to accommodate the users reaching the website regarding job information. Though most of the pages were visually appealing but lacked consistency among them. This needs to be considered and all website should be given a consistent look and feel.

5.2 Lessons Learned

The project helped me to get a hands on how to use the HCI concepts in the real world. From heuristic analysis to cognitive walkthrough, I saw different methods to check the usability of the system. The development process helped me identify more issues and how a better solutions could be developed. Testing the users for the first time gave a good experience with the statistics.

5.3 Conclusion

The project dealt with the improvement of interface for a local university website. The improvements were aimed at facilitating the user with the application process, increasing the usability of the system and enhancing the user experience. The project proved to be a great learning experience and I would like to thank the faculty, staff members and my colleague students who helped me during this wonderful process.

6 Appendixes

6.1 Heuristic Evaluation

The UAT website lacks usability and good user experience in multiple fields ranging from presentation to navigation. The website opens with cluttered animation and no mention to the name of the university. Misplaced menus, inconsistent navigation scheme, and tough to find search function, poor form design with no feedback on mistakes and small font size are one of the many other functionalities that the website lacks. I propose various design features to optimize the website.

Problem Areas and Issues Related to Concepts Discussed

The Homepage

First time users generally reach websites through search engines, so the first intuition is to see the University's name and details to make sure that they have reached the right place. A professional look helps the user to be sure that they made no mistake.

These are in contrast with the primacy concept that Heading should always occupy the top position.

The Navigation

The convoluted animation at the upfront does not guide the first time user to the right courses they are looking for.

Although being at top, the menu style is poor and it makes it hard for the user to reach items and click them. It is one of the common usability problem, Ambiguous menus and icons.

The Forms

The forms are ill-designed and lack the use of *encoding effect* by not following the proper protocols.

Although broken into steps, the steps have no names and it's hard to guess the percentage completion of the form.

It is against the concept of clear step sequence and Design Consistency.

The Errors & Help

Most of the errors which occurs while filling the registration form is not reported at all. Thus it inhibits the user to move to further steps.

This is one of usability problem mentioned in class, inadequate error messages, help, tutorials, and documentation.

Improvements Suggested

The Homepage

The first goal of 'identification and verification of the website' could be satisfied by replacing the name of the university from the bottom part to the header region. The removal of cluttered animation from the top main region of the homepage would ensure a professional look and feel of a university's website and would reduce the perplexity of the user when they reach there.

The Navigation

The convoluted animation at the upfront does not guide the first time user to the right courses they are looking for. The animations would be replaced by a proper menu with sub-menu that would guide the users to proper courses. The course pages would have minimal information regarding the course with identifiable links for application process and deadlines. The huge amount of information available on a single course page would be divided into a few more pages so that the pages do not contain redundant items.

The Forms

The apply now buttons would be placed at relevant environment (such as on the course page, with least amount of redundancy). The application page would dedicate maximum space to the form rather than other information. The form should carry the general design for 'required fields'. The form would be divided in multiple parts and the user would know the stage of the task he is in and how many more stages are left to be covered.

The Errors & Help

Proper feedback would be provided on making mistakes while filling the form. The errors would be marked and proper correction would be suggested. A help feature would also be included to guide the user with sequence to follow whileregistration.

Metrics to Verify the Effectiveness of Suggestions

Efficiency

The increase in efficiency could be calculated by knowing how much fast and with ease the users are able to complete the task from opening the home page to successfully applying to a course. With

proper designed pages, users are expected to finish the task without showing frustration and in a defined time scale.

Percentages of errors

A count of how many times user commits an error while filling the forms would tell us how enhanced the website has become in terms of error management and content. Both the prototype and actual website would be compared in this regard

Number of times the interface misleads the user

By calculating how many times the user has to move back and forth in the website due to misled information and menus, the effect of misleading could be calculated. Both the prototype and actual website would be compared in this regard.

Heutistic Review Template (Source: http://www.uxforthemasses.com/)

[Enter product name]	Score	Comments
Hover over a guideline for more information, examples of good practice and importance to the overall user experience.	N/A = not applicable or can't be assessed	Optional - Provide a short rational for the score, such as a description of the issues found; examples of good practice and the likely impact for users.
Features & functionality		
1 Features and functionality meet common user goals and objectives.	**Poor**	*Users may not at all be able to reach the required page like application process.*
2 Features and functionality support users desired workflows.	**Very poor**	*With no proper direction to reach the desired pages, its hard to determine the next set of actions required to perform any task.*
3 Frequently-used tasks are readily available (e.g. easily accessible from the homepage) and well supported (e.g. short cuts are available).	**Moderate**	*Though it implements search and apply now feature at the home page, the buttons are ambiguous and many other features like signing up button and employability page is not available.*
4 Users are adequately supported according to their level of expertise (e.g. short cuts for expert users, help and instructions for novice users).	**N/A**	

5	Call to actions (e.g. register, add to basket, submit) are clear, well labelled and appearclickable.	**Very poor**	*The Login button is hardly visible and the registration form does not show any progress and has no validation.*

6.1.1 Homepage / starting page

6	The Homepage / starting page provides a clear snapshot and overview of the content, features and functionality available.	**Poor**	*The items are misplaced. The most important action button are placed at the wrong positions. There's no use of promacy and recency effect.*

7	The home page / starting page is effective in orienting and directing users to their desired information and tasks.	**Very poor**	*The misplaced items makes it nearly impossible to decide the actions and move along the site.*
8	The homepage / starting page layout is clear and uncluttered with sufficient 'white space'.	**Very poor**	*The page is full of unnecessary information with small font sizes and menus with low accessibilty.*

6.1.2 Navigation

9	Users can easily access the site or application (e.g. the URL is predictable and is returned by search engines).	**Good**	*Yes, it's the first result on the search.*
10	The navigational scheme (e.g. menu) is easy to find, intuitive and consistent.	**Poor**	*Although being at top, the menu style is poor and it makes it hard for the user to reach items and click them*
11	The navigation has sufficient flexibility to allow users to navigate by their desired means (e.g. searching, browse by type, browse by name, most recent etc…).	**Moderate**	*The search feature returns desired results but without any consistency.*
12	The site or application structure is clear, easily understood and addresses common usergoals.	**Very poor**	*The information regarding courses is hard to find and not properly arranged. A lot of buttons are ambiguous and user won't observe them.*
13	Links are clear, descriptive and and well labelled.	**Good**	*The links are clickable and changes color when clicked upon.*

14	Browser standard functions (e.g. 'back', 'forward', 'bookmark') are supported.	**Good**	*Yes, these are supported.*
15	The current location is clearly indicated (e.g. breadcrumb, highlighted menu item).	**Very poor**	*There is no mention of the location. The button to home page is missing in most of the pages.*

16	Users can easily get back to the homepage or a relevant start point.	**Very poor**	*The button to home page is missing in most of the pages. Pages need to be opened in new tab to make sure that user doesn't miss the location*
17	A clear and well structure site map or index is provided (where necessary).	**Very poor**	*No site map is available at all.*

6.1.3 Search

18	A consitent, easy to find and easy to use search function is available throughout (where desirable).	**Poor**	*The search feature is available only at home page while the course pages misses this feature.*
19	The search interface is appropriate to meet user goals (e.g. multi-parameter, prioritised results, filtering search results).	**Moderate**	*Only sort by date option is available. Rest it's a simple search based on keyword.*
20	The search facility deals well with common searchs (e.g. showing most popular results), misspellings and abbreviations.	**Poor**	*No such facilities has been provided. But it gives related results in case of misspells.*
21	Search results are relevant, comprehensive, precise, and well displayed.	**Moderate**	*The results are arranged well but lack proper visibility.*

6.1.4 Control & feedback

22	Prompt and appropriate feedback is given (e.g. following a successful or unsuccessful action).	**Very poor**	*The forms has no validation feedback. One can't move forward as no errors is displayed.*
23	Users can easily undo, go back and change or cancel actions; or are at least given the chance to confirm an action before commiting (e.g. before placing an order).	**Poor**	*It is difficult to know when the last step of the application process has reached. This makes it tough to review the application.*

24	Users can easily give feedback (e.g. via email or an online feedback / contact us form).	**Poor**	*There's no option of feedback available.*

6.1.5 Forms

25	Complex forms and processes are broken up into readily understood steps and sections. Where a process is used a progress indicator is present with clear numbers or named stages.	**Poor**	*Although broken into steps, the steps has no names and its hard to guess the percentage completion of the form.*
26	A minimal amount of information is requested and where required justification is given for asking for information (e.g. date of birth, telephone number).	**Very poor**	*A lot of extra information is desired and no reasons are given for the same.*
27	Required and optional form fields are clearly indicated.	**Poor**	*The required fields and unrequired fields has different colors which is not the proper design protocol followed.*
28	Appropriate input fields (e.g. calendar for date selection, drop down for selection) are used and required formats are indicated.	**Good**	*The dropdowns are used in expected manners.*
29	Help and instructions (e.g. examples, information required) are provided where necessary.	**Very poor**	*No help or required information is provided at any stage.*

6.1.6 Errors

30	Errors are clear, easily identifiable and appear in appropriate location (e.g. adjacent to data entry field, adjacent to form, etc.).	**Very poor**	*Only a yellow triangle is displayed at the top of the page which makes it impossible to deduce what the error is.*

31	Error messages are concise, written in easy to understand language and describe what's occurred and what action is necessary.	**Very poor**	*No mention of any detail regarding the error.*

32	Common user errors (e.g. missing fields, invalid formats, invalid selections) have been taken into consideration and where possible prevented.	**Poor**	*Though some field has such validation, others let the user enter absurd information and get away with it.*
33	Users are able to easily recover (i.e. not have to start again) from errors.	**Moderate**	*Since it does not take the user to a different page on error occurrence, the data can be recovered.*

6.1.7 Content & text

34	Content available (e.g. text, images, video) is appropriate and sufficiently relevant, and detailed to meet user goals.	**Moderate**	*Most informations are availaible but some improtant ones like course deadlines or the detailed fee structure is missing.*
35	Links to other useful and relevant content (e.g. related pages or external websites) are available and shown in context.	**Moderate**	*Some links lead to related website while others lead to places out of context.*
36	Language, terminology and tone used is appropriate and readily understood by the target audience.	**Good**	*The information is detailed and easy to understand.*
37	Terms, language and tone used are consitent (e.g. the same term is used throughout).	**Poor**	*Every course page has different style of content and its hard to keep up with the changing content.*
38	Text and content is legible and scanable, with good typography and visual contrast.	**Poor**	*A lot of texts has too light fonts and the font sizes are fairly inconsistent.*

6.1.8 Help

39	Online help is provided and is suitable for the user base (e.g. is written in easy to understand langugage and only uses recognised terms). Where appropriate contextual help is provided.	**Very poor**	*No help is provided at most of the places and its hard to determine where to look for the required information.*

40	Online help is concise, easy to read and written in easy to understand language.	**N/A**	
41	Accessing online help does not impede users (i.e. they can can resume work where they left off after accessing help).	**N/A**	
42	Users can easily get further help (e.g. telephone or email address).	**Moderate**	*Although its hard to locate the contact informations, once located, further information can be gathered.*

6.1.9 Performance

43	Site or application performance doesn't inhibit the user experience (e.g. slow page downloads, long delays).	**Very poor**	*Due to cluttered animations, the home page takes time to open and its often that few graphics comes in way of the useful texts.*
44	Errors and reliabilty issues don't inhibit the user experience.	**Very poor**	*Any error in sign up form doesn't allow user to proceed without informing the user where the error lies.*
45	Possible user configurations (e.g. browsers, resolutions, computer specs) are supported.	**Good**	*The website do fine in most of the browsers and shows consistency.*

Overall usability score (out of 100) *	42	-	Poor

* Very poor (less than 29) - Users are likely to experience very significant difficulties using this site or system and might not be able to complete a significant number of important tasks.
* Poor (between 29 and 49) - Users are likely to experience some difficulties using this site or system and might not be able to complete some important tasks.
* Moderate (between 49 and 69) - Users should be able to use this site or system and complete most important tasks, however the user experience could be significantly improved.
* Good (between 69 and 89) - Users should be able to use this site or system with relative ease and should be able to complete the vast majority of important tasks.
* Excellent (more than 89) - This site or system provides an excellent user experience for users. Users should be able to complete all important tasks on the site or system.

Usability guidelines

6.1.10 Importance

Features & functionality

1	**Features and functionality meet common user goals and objectives** Key and common user goals and objectives (e.g. carry out some transaction, find some information, carry out some research etc…) should have been identified and addressed. Ideally the site or application should allow users to meet all of their key goals and objectives.	**Very Low**
2	**Features and functionality support users desired workflows** The site or application should support or at least be compatible with the way that users wish to work. For example, users might want to be able to carry out bulk transactions or be able to save and return to their work.	**Very High**
3	**Frequently-used tasks are readily available (e.g. easily accessible from the homepage) and well supported** For example short cuts and a login to retrieve details might be provided to speed up the completion of frequently carried out tasks.	**Low**
4	**Users are adequately supported according to their level of expertise** For example, novice users are given help and instructions and features are progressively disclosed (e.g. advanced features not being shown by default).	**Medium**
5	**Calls to action (e.g. register, add to basket, submit) are clear, well labelled and appear clickable** Possible actions should always be clear and the primary call to action (i.e. the most common or desirable user action) should stand out on the page or screen.	**Medium**

Homepage / starting page

6	**The Homepage / starting page provides a clear snapshot and overview of the content, features and functionality available** For example, an introduction and overview of the site is provided together with section snapshots and example content.	**Medium**
7	**The homepage / starting page is effective in orienting and directing users to their desired information and tasks** Users should be able to work out where they need to go to complete a given task (e.g. carry out some research, complete a transaction).	**High**
8	**The homepage / starting page layout is clear and uncluttered with sufficient 'white space'** Users should be able to quickly scan the homepage and make sense of both the content available and of how the site is structured.	**Medium**

Navigation

9	**Users can easily access the site or application** For example, the URL is predictable and is returned by search engines. If a user attempts to find the site via a search engine, it should ideally be returned on the first page of search results for likely queries.	**Low**
10	**The navigational scheme is easy to find, intuitive and consistent** Users should be able to very easily locate and use the navigational scheme (e.g. left hand menu, top menu, tabbed menu), and it should not be significantly different across the site or application (unless a decision has been made to specifically differentiate a given section or area).	**Low**
11	**The navigation has sufficient flexibility to allow users to navigate by their desired means** For example a user might want to be able to search for an item or browse by size, name or type. Although not all user preferences can or indeed should be addressed, the most useful and common navigational means should be supported.	**Medium**
12	**The site or application structure is clear, easily understood and addresses common user goals** For example, gathering information, submitting data, carrying out research. Users should be able to work out where they need to go to carry out common user goals and be able to quickly gain an understanding of how the site or application is structured.	**Very high**
13	**Links are clear, descriptive and well labelled** Links should be clearly 'clickable' (e.g. underlined or colourised) and it should be clear to users where any given link goes to. Non-descriptive links such as 'click here' should be avoided and any links going to an external website or opening a new window should be identified as such.	**Medium**
14	**Browser standard functions (e.g. 'back', 'forward', 'bookmark') are supported** Users should be able to bookmark a page (or be presented with a URL to use) and go back and forth without breaking the site or losing any information they have entered.	**High**
15	**The current location is clearly indicated (e.g. breadcrumb, highlighted menu item)** Users should always know where they are in the site or application.	**Low**
16	**Users can easily get back to the homepage or a relevant start point** For example, a homepage link might be part of the breadcrumb or a home link might be available as part of the header.	**Low**
17	**A clear and well structure site map or index is provided (where necessary)** The sitemap might be part of the header or footer and should ideally be available from every page on the site.	**Very low**

Search

18	**A consistent, easy to find and easy to use search function is available throughout** The search function (where required) should be directly available from most pages on the site or application and should be consistently positioned (e.g. top left, top right or top centre).	**High**

19	**The search interface is appropriate to meet user goals** For example users are able to filter search results, an advanced search is available (if necessary) and common search conventions such as quotation marks (") and natural language searches are handled.	**High**
20	**The search facility deals well with common searches, misspellings and abbreviations** Ideally synonyms (e.g. 'coat' should also match 'jacket') should mean that logical and appropriate search results are returned for common user queries. Popular search results (e.g. top matches) should also be identified for common queries.	**Low**
21	**Search results are relevant, comprehensive, precise, and well displayed** It should be easy for users to see what has been returned, to work out why something has been returned and to determine how many results there are.	**High**

Control & feedback

22	**Prompt and appropriate feedback is given** For example, a confirmation message is shown following a successful transaction, input errors are promptly highlighted and it's made clear to users when a page has been updated.	**High**
23	**Users can easily undo, go back and change, or cancel actions** If an action can not be undo then users should at least be given the chance to confirm an action before committing (e.g. before placing an order). For example, users can return to a step and change their options or dynamically change a value without having to start again. Where an action can't be undone (e.g. a deletion), this should be made clear to users.	**Medium**
24	**Users can easily give feedback** For example, via email or an online feedback / contact us form. There should be an indication of how long users can expect to wait for a response if a query has been made.	**Very low**

Forms

25	**Complex forms and processes are broken up into readily understood steps and sections** For example, a checkout process might be broken up in to 'address', 'delivery options', 'payment' and 'confirmation'. Where a process is used a progress indicator is present with clear numbers or named stages.	**Medium**
26	**A minimal amount of information is requested and where necessary justification is given for asking for information** For example a site might outline that a telephone number is required in case there is an issue with a transaction. Users shouldn't be asked for extraneous information and where possible information should be auto populated (e.g. postcode lookup, code lookup) to keep input to a minimum.	**Low**

27	**Required and optional form fields are clearly indicated (e.g. using text or '*')** Where most fields are required the optional fields should be identified and when most fields are optional the required fields should beidentified.	**Low**
28	**Appropriate input fields are used and required formats are indicated** Appropriate input fields might include calendar for date selection, drop downs for selection and radio button for small selections. Text might be used to indicate the required format or an example might be provided. Field lengths should correspond to the expected input so for example an email input field should be long, where as an initials input field should be very short.	**Medium**
29	**Help and instructions (e.g. examples, information required) are provided where necessary** Where input is non trivial or is likely to require some explanation this should be provided. Where a-lot of explanation is necessary a link to a page outlining what is required should be provided.	**Medium**

Errors

30	**Errors are clear, easily identified and appear in appropriate locations** Errors should be immediately apparent to users and ideally be located close to the offending input or function (e.g. adjacent to an input entry field). Inputs causing an error should be highlighted, together with an explanation for the error.	**High**
31	**Error messages are concise, written in easy to understand language and describe what's occurred and what action is necessary** Errors should avoid using very technical terms or jargon and should be written from the user's perspective.	**Medium**
32	**Common user errors have been taken into consideration and where possible prevented** Common user errors might be missing fields, invalid formats and invalid selections. For example, fields might limit input to particular a format (e.g. numbers only) or only become available once certain criteria have been met. JavaScript might also be utilised to provide immediate feedback for common formatting errors or errors caused by missing fields.	**Medium**
33	**Users are able to easily recover (i.e. not have to start again) from errors** For example, users might be able to re-edit and resubmit a form or enter a different value.	**Medium**

Content & text

34	**Content available (e.g. text, images, video, audio) is appropriate and sufficiently relevant, and detailed to meet user goals** Content should also be appropriately formatted, so for example videos and audio should be directly playable (i.e. shouldn't need to be downloaded to be played) and images should be of a sufficient quality.	**Very high**

35	**Links to other useful and relevant content (e.g. related pages, external websites or documents) are available and shown in context** For example there might be links from an article to related articles, related content or related external websites.	**Low**

36	**Language, terminology and tone used is appropriate and readily understood by the target audience** Jargon should be kept to a minimum and plain language should be used where ever possible.	**High**
37	**Terms, language and tone used are consistent (e.g. the same term is used throughout)** Capitalisation (e.g. 'Main title'; 'Main Title'; 'MAIN TITLE') and grammar should be consistent, together with the use of formal or informal terms (e.g. could not vs couldn't; what's vs what is etc...).	**Medium**
38	**Text and content is legible and scanable, with good typography and visual contrast** Users should be able to quickly scan headers and body text, in order to get an overview of what's available.	**Medium**

Help

39	**Online help is provided and is suitable for the user base** Help should be written in easy to understand language and only uses recognised terms. Users should be able to easily find and access help and where appropriate contextual help should be available, such as help for a specific page, feature or process.	**High**
40	**Online help is concise, easy to read and written in easy to understand language** Help should cover the essentials without providing excessive detail and shouldn't use jargon or technical terminology that isn't likely to be understood by users.	**Medium**
41	**Accessing online help does not impede users** Users should be able to resume work where they left off after accessing help. Ideally help should be available directly on a page or using a new window. If help is provided in the form of a document, it should be formatted for the web (e.g. PDF, rather than a Word document).	**Medium**
42	**Users can easily get further help (e.g. telephone or email address)** If a telephone help number is provided the hours of operation should be shown. If an email address or online form is provided, an indication should be given of how long a response is likely to take (e.g. within the next 24 hrs).	**Low**

Performance

43	**Site or application performance doesn't inhibit the user experience (e.g. slow page downloads, long delays)** Web page downloads shouldn't take longer than 5 seconds and on page interactions (e.g. using an application or AJAX functionality) shouldn't take any longer than 1 second to respond. Interactions taking longer than 1 second to respond should provide suitable feedback to show that something is taking place (e.g. an hour glass or swirling graphic).	**High**
44	**Errors and reliability issues don't inhibit the user experience** Sites and applications should be free of bugs and shouldn't have any broken links.	**Medium**

45	**Possible user configurations (e.g. browsers, resolutions, computer specs) are supported** Websites should be usable at a 800x600 screen resolution and should work with the most common browsers (IE, Firefox, Opera, Chrome etc…). Applications should be usable with common computer specifications (operation system, memory, available disk space) and screen resolutions (e.g. 800x600, 1025x768).	**Medium**

Rating below	Rating	Rating ranges
0		
1	Very Poor	less than 29
29	Poor	between 29 and 49
49	Moderate	between 49 and 69
69	Good	between 69 and 89
89	Excellent	more than 89

6.2 Cognitive Walk-through

Tasks

1. Find the Admission Requirements for the Graduate, Undergraduate or International Students.
2. Find the information about a selected course.
3. Apply to a given course as an applicant by filing all the required details.

Concise Table

	1	2	3
Know the action?	Yes	Yes	Yes
See the control?	No	Yes	Yes
Understand the control?	No	No	Yes
See the feedback?	Yes	Yes	No

Comments / Recommendations

Task 1 - Find the Admission Requirements for the Graduate, Undergraduate or International Students.

See the control?

No.

No item on menu clearly specify where the international requirements could be found.

A clear menu item would be added to ease the process.

Understand the control?

No.

Few menu item has ambiguous control actions.

The ambiguous items would be replaced by simple and meaningful menu item.

Task 2 - Find the information about a selected course.

Understand the control?

No.

The link says disclosure and leads to cost page.

Such ambiguity would be removed by using meaningful links on the same page.

Task 3 - Apply to a given course as an applicant by filing all the required details.

No.

Sometimes no feedback is provided about where the error has been made.

Proper feedback on validation would be provided right next to the form.

6.3 New GUI snapshots

The snapshots are provided In the Prototype Design section.

6.4 Instructions for participants

Instructions

Open http://www.uat.edu in your browser.

Please try to complete the following following tasks.

Task 1

Find the Admission Requirements for the International Students. Like if the transcript is needed and what are the TOEFL Requirements.

Task 2

Find the information about 'Game, Art and Animation' course. The information consists of,

- Cost of Attendance
- Deadlines to submit the Application (You can ignore this)
- Application Link

Task 3

Apply to Game Art and Animation course as an applicant. You can use the below data to fill the form.

You can leave the unrequired information as blank.

6.5 Researcher guidelines

Hello,

I am Sharad, a student of Computer Science at Arizona State University. This study is about usability of a University Website as a part of my Human Computer Interaction Project. You are required to complete a set of tasks on the provided website and share your feedback about your experience.

As a part of the process, you would share your screen with me and your actions on the website shall be observed remotely for the purpose of study. The data collected would range from your comfort level with the website to the time spent performing the task. There is no time bound on completion on any task and you are free to skip the task at any moment.

Before beginning the study, please fill the background survey form along with the consent form. You could find both the forms in your email.

You can now proceed with the tasks.

Post Task Completion Instructions

Please fill the System Usability Survey which has been mailed to you.

Thank you for participating in the study. You could reach me at ssharad@asu.edu for any clarification in future.

6.6 Background questionnaire

Background Questionaire (Responses)

Timestamp	Your Name	Your Age	What is the highest level	How much time do yous	Have you ever filled an University Application Online?	How are you taking part in the study?
05/07/2016 19:40:23	Arya	Between 23-28	Bachelor's degree	5-8 Hours	Yes	
06/07/2016 08:38:15	Ana Luiza Cordeiro	Between 23-28	Bachelor's degree	2-4 Hours	No	Online
06/07/2016 10:20:09	Divyanshu Sachdeva	Between 23-28	Bachelor's degree	5-8 Hours	Yes	Physically present at the Center
06/07/2016 19:41:58	Parinitha Hirehal	Between 23-28	Master's degree	5-8 Hours	Yes	Physically present at the Center
06/07/2016 23:39:38	Vishnu Mohanan	Between 23-28	Bachelor's degree	2-4 Hours	Yes	Physically present at the Center
07/07/2016 09:44:32	Monika Bharti	Between 23-28	Master's degree	More than 8 Hours	No	Online

6.7 Post-session questionnaire

1. I think that I would like to use this website frequently.
2. I found the website unnecessarily complex.
3. I thought the website was easy to use.
4. I think that I would need the support of a technical person to be able to use this Website.
5. I found the various functions in this Website were well integrated.
6. I thought there was too much inconsistency in this Website.
7. I would imagine that most people would learn to use this Website very quickly.
8. I found the Website very cumbersome to use.
9. I felt very confident using the Website.
10. I needed to learn a lot of things before I could get going with this Website.

It is a google spreadsheet representing the responses of the users.

Website Usability Survey for website (Responses)

Timestamp	Your Name	I think that I would like to use this website frequently.	I found the website unnecessarily complex.	I thought the website was easy to use.	I think that I would need the support of a technical person to be able to use this website.	I found the various functions in this website were well integrated.	I thought there was too much inconsistency in this website.	I would imagine that most people would learn to use this website very quickly.	I found the website very cumbersome to use.	I felt very confident using the website.	I needed to learn a lot of things before I could get going with this website.
06/07/2016 09:26:44	Ana Luiza Cordeiro	1	4	2	2	2	4	1	5	1	4
07/07/2016 00:05:01	Vishnu Mohanan	3	4	3	3	2	4	2	4	2	4
08/07/2016 00:36:52	Monika Bharti	3	4	2	1	3	4	2	4	3	3