**Faculty of Technology – Coursework Brief 2021/22**

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| **Module name:** | | **Interactive Systems Design and Evaluation** | | | | | | |
| **Module code:** | | **IMAT 2610** | | | | | | |
| **Title of the Assignment:** | | **Usability Evaluation** | | | | | | |
| **This coursework item is:** (delete as appropriate) | | | | Summative | | |  | |
| **This summative coursework will be marked anonymously:** (delete as appropriate) | | | | | |  | | No |
| **The learning outcomes that are assessed by this coursework are:**   1. Have knowledge of user centred approaches to design. 2. Be able to evaluate and critique interactive systems 3. Be able to communicate their evaluation of interactive devices in a variety of formats | | | | | | | | |
| This coursework is: (delete as appropriate) | | | Individual | | | |  | |
|  | | | | | | | | |
| **This coursework constitutes** 60 % **of the overall module mark.** | | | | | | | | |
| **Date Set:** | **Monday 4 October 2021 (Week 1)** | | | | | | | |
| **Date & Time Due:** | **Monday 10 January 2022 (Week 15) at 12:00** | | | | | | | |
| **Your marked coursework and feedback will be available to you on:**  If for any reason this is not forthcoming by the due date your module leader will let you know why and when it can be expected. The Associate Professor Student Experience ([studentexperience-tech@dmu.ac.uk](mailto:studentexperience-tech@dmu.ac.uk)) should be informed of any issues relating to the return of marked coursework and feedback.  Note that you should normally receive feedback on your coursework by **no later than 20 University working days after the formal hand-in date,** provided that you have met the submission deadline. | | | | | **Monday 7 February 2022** (marks and feedback will be given to students verbally at their presentations) | | | |
| **When completed you are required to submit your coursework via:**   1. Documentation in hardcopy to CEMAC 2. Documentation in electronic form to Turnitin via Blackboard 3. Presentation delivered in person.   **If you need any support or advice on completing this coursework please visit the Student Matters tab on the Faculty of Technology Blackboard page.** | | | | | | | | |
| **Late submission of coursework** **policy:** Late submissions will be processed in accordance with current University regulations which state:  *“the time period during which a student may submit a piece of work late without authorisation and have the work capped at 40% [50% at PG level] if passed is* ***14 calendar days****. Work submitted unauthorised more than 14 calendar days after the original submission date will receive a mark of 0%. These regulations apply to a student’s first attempt at coursework. Work submitted late without authorisation which constitutes reassessment of a previously failed piece of coursework will always receive a mark of 0%.”* | | | | | | | | |
| **Academic Offences and Bad Academic Practices:**  **These include plagiarism, cheating, collusion, copying work and reuse of your own work, poor referencing or the passing off of somebody else's ideas as your own. If you are in any doubt about what constitutes an academic offence or bad academic practice you must check with your tutor. Further information and details of how DSU can support you, if needed, is available at:**  <http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/academic-offences.aspx> and  <http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/bad-academic-practice.aspx> | | | | | | | | |
| **Tasks to be undertaken:**   1. Select an interactive system to evaluate 2. Select an evaluation technique 3. Plan systematic evaluation procedure 4. Perform evaluation 5. Document results 6. Prepare presentation 7. Deliver presentation to markers | | | | | | | | |
| **Deliverables to be submitted for assessment:**   1. Documentation of the usability evaluation 2. Presentation given to markers (doesn’t need to be submitted) | | | | | | | | |
| **How the work will be marked:**  Markers will listen to the presentation, ask questions, and consult the documentation at the presentation session. | | | | | | | | |
| **Module leader/tutor name:** | | **Martin Stacey** | | | | | | |
| **Contact details:** | | **mstacey@dmu.ac.uk** | | | | | | |

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# Executive Summary

The following report contains the result from a heuristic evaluation carried out of the cloth and sport selling E-commerce website as Recreational Equipment, Inc. (REI) ([www.rei.com](http://www.rei.com)). The basic tasks were carried out based on Nielsen’s Ten Usability Heuristics. Both, negative and positive finding of the evaluation were noted out.

The typical new user profile was created as new user interacting the website for the first time. The overall result was REI website confirms to approve Nielsen’s heuristics in several areas but overall site is difficult to work on basic site tasks.

The person interacting the system is a common student or a normal user. Who wants to interact with the website to do some basic clothing of the clothes.

# Introduction

To better define our assessment process on REI website, Heuristic evaluation methodology was carried out. The potential and main problems found during evaluation are discussed and noted during the formal usability testing.

To make a profile and a personal interaction with the website a scenario and a persona was created as a simple user and following basic steps were carried out.

* Visited the website.
* Joined or created a personal profile.
* Find a technical problem.
* Post and notes down results.
* Analysing of the result.

In the report the process used to conduct the heuristic evaluation is described in the Methods section. The Evaluation Findings section details the site rankings according to each of Nielsen's ten heuristics, and concludes with a Summary of Recommendations. The user using the system is a university student interacting website for personal use.

The primary aim of the heuristic evaluation is to identify problems user interact while performing basic tasks on the webpages. The data collected will help to build the solution and help to improve websites for further uses.

# Methodology

## Evaluation Process

To conduct heuristic evaluation process REI website was assessed using Nielsen's Ten Usability Heuristics Basic task which most common users use like shopping, checking prices, stock availability and furthermore.

Prior to evaluation a persona was created for making an easy study. The persona profile was created for a new user, which can be any random individual interacting the website for personal use and for the first time. To make a proper study on the process roughly scenarios are made.

From various evaluation method available Nielsen's Ten Usability Heuristics for two reasons:

* Offer various and specific objective criteria to deliver evaluation.
* Easy and can create difference between old and new system.

The ranking system to report the severity of positive and negative issues encountered were noted and analysed.

## Tasks

Main tasks involved in the evaluation process are as follows:

* **Visited the website:** This is the first interaction of the user with the user which drives them to complexities.
* **Joined or created a personal profile:**  The main task of the system is creating a profile because it resolves most of the activities going on the sites.
* **Find a technical problem:**  The REI website makes user to create a compulsory profile while visiting it for the first time. Finding the clear way of interaction is the hardest part of the system.
* **Post and notes down results:** Errors were noted and analysed later on.
* **Analysing of the result:**

## Personas

The following person fits the scenario and it is as follows:

* **Name-** Alexander
* **Gender-** Male
* **Occupation-** Student
* **Income-** 10,000 USDT
* **Age-** 21
* **Technical Profile-** Studying at DMU and part time worker.
* **Internet Use-** 5-7 Hours per day for study and personal use.
* **Hobbies-** Football, Hiking, Travelling, Gaming.
* **Motivation-** Interested in study work and want to make a successful career in his field.

## Scenarios

A normal student wants to buy some clothes for his daily wear and gym wear. He visits REI Shop online to do some online shopping and check available clothes according to his preference. Search clothes according to categories. Checking on size guides. Revise of the customer. Checking customer profile and personal preference. Checking out for the fees. Putting delivery status and also checking on price details.

## Heuristics

Jakob Nielsen's Ten Usability Heuristics are listed as follows with explanations of each (Nielsen, 1994):

•**Visibility of system status**— The system should be readable and simple where users can understand what is going on, on their screens.

* **Match between system and the real world—** The system should be simple with easy words and sign posting to make it readable to users and also it should be cooperating with the real world.

**• User control and freedom—** User work should be easily done without jumping to unwanted pages and tasks. Appropriate BACK and SUBMIT buttons should be available.

**•Consistency and standards**— Platform conversation should be understandable and with high standard of steps helpful to user.

**• Error prevention**— Providing error messages such as wrong ID, Password or selection of wrong items in readable format.

**• Recognition rather than recall—** Keeping maximum information within the system so that user should not keep recording details. Minimum track of details must be with user.

**• Flexibility and efficiency of use**— Frequently used task should be kept in mind while making a website. Accelerators and shortcuts should be implemented to speed up work of both experienced and inexperienced users.

• **Aesthetic and minimalist design**— Irrelevant information should be minimised or rarely implemented. Visibility should be easily adapted.

**• Help users recognize, diagnose, and recover from errors**— Suggesting solution should be made in case or errors with plain and simple languages with no interaction with codes.

**• Help and documentation—** User task manual helps user to understand more about the sites. But it is not mandatory to use and it is acceptable if missing.

## Ranking System

Throughout the evaluation process, ranking follows according to stage progression and it is as follows:

**• Positive (0)—** User is able to perform basic tasks which help to complete simple requirements.

**• Cosmetic Issue (1)–**Appearance of the website looks inappropriate but can be solved only in free time.

• **Minor Issue (2)—**Appropriate filters not available while using website in phone compared to computer.

**• Major Issue (3)—** Requires to make a mandatory profile while visiting it for the first time which is frustrating.

**• Catastrophic Issue (4)—** Prohibiting user to search for local stores and location services.

# Evaluation Findings

## Positive Findings

The REI.Com Web site confirms to Nielsen’s heuristics in several areas as follows:

## 1. Visibility of system status

• The error message on registration form is easy and readable form with appropriate signs allowing user to locate net step.

• While placing an order prompt message is available with easy following steps.

## 2. Match between system and the real world

•Terminology of the site is common with offline buying categories.

• The REI.com Web site follows traditional registration and webpages look.

## 3. User control and freedom

• Individual profile pages have got return pages option.

• Technical Solutions have a return link.

• Users can get information from home page by clicking on REI logo.

## 4. Error prevention

• User is assigned to registration form when not signed into.

## 5. Help users recognize, diagnose, and recover from errors.

• Error messages are written in plain language and are easy to understand.

# Negative Findings

There were a lot of segments where Nielsen’s Heuristic were exploited and a lot of errors were there on websites which made user interaction complicated and issues were found. Those problems detailed below.

## Visibility of system status

The system should always give user information about what is going on within the pages.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 1.1 | 2 | Poor Selective Bar |  |
| 1.2 | 2 | Two icons but same link (REI-Coop and Shop seem like one option) Three same options available REI coop/shop/Shop REI |  |

## Match between system and the real world

User’s language should be kept in mind while designing interactive system. Appropriate word, phrases, and concepts must be kept simple and understandable.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 2.1 | 3 | Anyone can rate without buying the product |  |

## User control and freedom

Sometime user need to go back to previous pages or content, in such cases system should help user to get back to it’s position with help of appropriate back and reverse buttons.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 3.1 | 4 | No support from the retailer, instead REI service supports |  |

## Consistency and standards

Active users must not get confused between different words or buttons with same use or meaning.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 4.1 | 2 | Taking way too long to find the store |  |
| 4.2 | 1 | Expensive products |  |

## Error prevention

When error message is derived it should help user to resolve errors and get it working.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 5.1 | 3 | No initial option to remove the added item to cart |  |

## Recognition rather than recall

Options and steps followed should be visible and information of the pages displayed on the screen.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 6.1 | 4 | After registration there is no idea what to do next. |  |

## Flexibility and efficiency of use

Both experienced and unexperienced updated with frequently actioned needed.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 7.1 | 2 | No returning supports |  |

## Aesthetic and minimalist design

Every information in dialog box or buttons should be relevant.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 8.1 | 3 | Navigating the interface on the shopping page (Need to scroll down) |  |
| 8.2 | 1 | Too many categories to choose from. |  |
| 8.3 | 2 | Way too much navigation option |  |
| 8.4 | 2 | No visual presentation.  A lot of empty white spaces. |  |

## Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain languages with simple signs.

|  |  |  |  |
| --- | --- | --- | --- |
| # | Severity Rating | Problem |  |
| 9.1 | 0 | No eligible issues found. |  |

## Help and documentation

Even although it's far better if the device may be used without documentation, it could be essential to offer help and documentation. Any such facts need to be smooth to look, focused at the user's challenge, listing concrete steps to be carried out, and no longer be too massive.

# Summary of Recommendations

|  |  |
| --- | --- |
| Issues | Recommendations |
| * 1. Poor Selective bar | Instead of adding a lot of option and keeping it in different format it would be better if they are in line and proper colouring. |
| 1.2-REI Shop Icon | On same home page icons with different design and same links. |
| 2.1-Rating products. | Non-user or random person can rate which can make it for fake reviews. More security should be developed to make it more secure and professional. |
| 3.1-No Customer Support | Instead of retailer support only REI support is available which could be changed. |
| 4.1- Offline store Location | Errors in finding store location. Appropriate search options should be available. |
| 4.2- Expensive products | Of the products looks more then its worth which makes it look like a fake website. |
| 5.1- Cart error | Before checkout no option available to remove cart, products which should be improved. |
| 6.1-Registration form | On completing registration no link or option available to jump back to home page. After registration, page should automatically take user to home page or its crate. |
| 7.1-No returning supports. | Support and help not available to users. |
| 8.1-Navigation bar Error | Instead of scrolling each time to get navigation bar it should be static at one place to make it easier for user to get access. |
| 8.2-Multiple category options. | A lot of categories to be choose from which should be reduces to minimum. |
| 8.3-Navigation bar at end. | Two navigation bar which are useless. |
| 8.4- Empty white spaces. | A lot of empty white spaces which can be utilised. |

# Conclusion

To conclude this evaluation reveals several issues with REI.Com which are needed to be changed to make interaction with the user simpler and easier. By using Heuristic Evaluation methodology and analysing, identifying and using this issue as a part of testing makes it easier for the developer to make progress.

# References

* Nielsen, J. (1994). Retrieved from <http://www.useit.com/papers/heuristic/heuristic_list.html>.
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