University of the West of Scotland

School of Computing, Engineering and Physical Sciences

MSc Project Specification

**Student name:**

**Banner ID:**

**Email:**

**MSc Programme/stream:** Mobile Web Development

**MSc Programme Leader:** Graeme McRobbie

**Project Title:**

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| An analysis of the interrelationship between accessibility and UX on the mobile web through the comparison of websites |

**Research Question to be answered:**

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| How does designing for accessibility impact the overall user experience? |

**Outline (overview) and overall aim of project:**

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| Although there is a wide body of literature which discusses various aspects of accessibility, and user experience (UX), there is little research into the relationship between these and even less which discusses this in relation to the mobile web. This study aims to investigate the relationship between accessibility and UX in mobile website design in order to assess how accessibility impacts the user experience for the average user, and understand any connections between accessibility and UX. |

**Objectives (list of tasks to be undertaken to achieve overall aim of the project and to answer the research question posed):**

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| To achieve the research aim, the following objectives will be met -   * A review of current literature will be carried out to establish a baseline of past research relating to the relationship between UX and accessibility which this study can build upon * Literature will also be reviewed in order to establish guidelines for creating a good UX and meeting accessibility standards according to WCAG 2.1 * Two versions of a mobile website will be developed. One version will focus solely on creating an attractive and enjoyable UX, and the next version will then be adapted to ensure it complies with accessibility guidelines * Quantitative data will be collected through user questionnaires, using the existing UEQ, in order to assess the UX performance of both website versions * The resulting data will be analysed and the results for both websites will be compared in order to draw conclusions on the relationships between various aspects of UX and accessibility |

**Relationship of proposed project to MSc programme/stream:**

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| This project will involve the development of a website using the knowledge and skills gained from the ‘Web Development’ and ‘Dynamic Web Applications’ modules, two core modules from this programme. The project will also tie into the ‘Interactive Design for Smart Devices’ module as there will be a lot of focus on interface design for UX and accessibility. |

**Indicative reading list and resources:**

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| Aizpurua, A., Harper, S. and Vigo, M., 2016. Exploring the relationship between web accessibility and user experience. International Journal of Human-Computer Studies, 91, pp.13-23. DOI: https://doi.org/10.1016/j.ijhcs.2016.03.008  Arrue, M., Fajardo, I., Lopez, J.M. and Vigo, M., 2007. Interdependence between technical web accessibility and usability: its influence on web quality models. International Journal of Web Engineering and Technology, 3(3), pp.307-328. DOI: https://doi.org/10.1504/IJWET.2007.012059  Bai, Y., 2019. The relationship between Website accessibility and usability: An examination of US county government online portals. Electronic Journal of e-Government, 17(1), pp.47-62. DOI: https://doi.org/10.1016/j.ijhcs.2016.03.008  Clegg-Vinell, R., Bailey, C. and Gkatzidou, V., 2014. Investigating the appropriateness and relevance of mobile web accessibility guidelines. In Proceedings of the 11th Web for All Conference, pp. 1-4. DOI: https://doi.org/10.1145/2596695.2596717  de Paula, D.F., Menezes, B.H. and Araújo, C.C., 2014. Building a quality mobile application: A user-centered study focusing on design thinking, user experience and usability. In International Conference of Design, User Experience, and Usability, pp. 313-322. Springer, Cham. DOI: https://doi.org/10.1007/978-3-319-07626-3\_29  Kapoor, P., 2021. Mobile User Experience (UX) Design Guidelines Considering the Need for Accessibility. In International Conference on Research into Design, pp. 437-450). Singapore: Springer. DOI: https://doi.org/10.1007/978-981-16-0041-8\_37  Mbipom, G. and Harper, S., 2011. The interplay between web aesthetics and accessibility. In The proceedings of the 13th international ACM SIGACCESS conference on Computers and accessibility, pp. 147-154. DOI: https://doi.org/10.1145/2049536.2049564  Nielsen, J., 1994. Usability engineering. Morgan Kaufmann.  Petrie, H., Hamilton, F. and King, N., 2004. Tension, what tension? Website accessibility and visual design. In Proceedings of the 2004 international cross-disciplinary workshop on Web accessibility (W4A). pp. 13-18. DOI: https://doi.org/10.1145/990657.990660  Petrie, H. and Kheir, O., 2007. The relationship between accessibility and usability of websites. In Proceedings of the SIGCHI conference on Human factors in computing systems, pp. 397-406. DOI: https://doi.org/10.1145/1240624.1240688  Schmutz, S., Sonderegger, A. and Sauer, J., 2016. Implementing recommendations from Web Accessibility Guidelines: Would they also provide benefits to nondisabled users. Human factors, 58(4), pp.611-629. DOI: https://doi.org/10.1177/0018720816640962  Schmutz, S., Sonderegger, A. and Sauer, J., 2017. Implementing recommendations from web accessibility guidelines: a comparative study of nondisabled users and users with visual impairments. Human factors, 59(6), pp.956-972. DOI: https://doi.org/10.1177/0018720817708397  Schmutz, S., Sonderegger, A. and Sauer, J., 2018. Effects of accessible website design on nondisabled users: age and device as moderating factors. Ergonomics, 61(5), pp.697-709. DOI: https://doi.org/10.1080/00140139.2017.1405080  Shneiderman, B., Plaisant, C., Cohen, M.S., Jacobs, S., Elmqvist, N. and Diakopoulos, N., 2016. Designing the user interface: strategies for effective human-computer interaction. Pearson.  WC3, 2018. Web Content Accessibility Guidelines (WCAG) 2.1 [online]. Available at: https://www.w3.org/TR/WCAG21/ |

**Marking scheme:**

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| Introduction - 10%  Literature Review - 20%  Design and Development - 30%  Testing and Evaluation - 20%  Conclusions - 10%  Critical self-evaluation - 10% |

**Supervisor:**

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**Moderator:**

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**Programme Leader:**

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**Date specification submitted:**

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Please complete the ‘ethics’ form below for all projects.

**School of Computing, Engineering and Physical Sciences**

**MSc PROJECT – REQUIREMENT FOR ETHICAL APPROVAL**

**SECTION 1: TO BE COMPLETED BY THE STUDENT**

Does your proposed research involve: research with human subjects (including requirements gathering and product/software testing), access to company documents/records, questionnaires, surveys, focus groups and/or other interview techniques? Does your research entail any process which requires ethical approval? (please enter √ in the appropriate box)

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| --- | --- | --- |
| YES | ✓ | **You must submit an application for approval to the Ethics Review Manager** |
| NO |  | You do not need to submit an application to the Ethics Review Manager |

**Name of Student (Print name):**

**Signature:**

**Date:**

**SECTION 2: TO BE COMPLETED BY THE PROJECT SUPERVISOR**

I understand that the above project requires/does not require\* ethical approval (\*please delete as appropriate).

**Supervisor (print name):**

**Signature**:

**Date:**

**IMPORTANT: please note that by signing this form all signatories are confirming that any potential ethical issues have been considered and, where necessary, an application for ethical approval has been/will be made via the Ethical Review Manager software.**

**Any project requiring ethical approval but which has not been given approval will not be accepted for marking.**

**Ethical approval cannot be sought in retrospect.**