## COM 2002/3002/6002 Human Centred Systems Design

## Assignment 2: Instructions

Answer all 5 questions covering Maria-Cruz Villa-Uriol’s lectures.

Each question is worth 4%, and each answer should be no longer than 100 words (about five or six lines).

You can cite sources at the end of each answer (not included in the 100 words) if you wish. You may use diagrams but *not* pictures.

**Note 1**: Please use the provided document as templates, and fill in your answers beneath each question and then upload it to MOLE when you have finished.

**Note 2**: This is an individual assignment. You must not collaborate with anyone else in preparing your answers. Any submissions which appear to involve any form of collusion will be subject to the University’s normal procedures for plagiarism.

In order for it to be fair, please do not contact us with questions about the content – it is up to you to interpret each question and to respond appropriately.

## COM 2002/3002/6002 Human Centred Systems Design

## Name

Neville Kitala Mwawasi

Answer the following questions in your own words, in 100 words or less.   
Please, follow the instructions provided.

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| 1. For each of the following scenarios and in the context of usability testing:    1. Provide one example application where a user-based test should come first.    2. Provide one example application where an expert-based test should come first.   In both cases, please, provide details about which test you would use and how many people you would involve. |

1. Making a flappy bird mobile game.

Tasks: Starting and closing the game, playing the game, saving milestones in the game, buying powerups in the game.

Test-Group: 100 – 200 test players.

1. Development of a knowledge based system for medical prescription

Tasks: Adding information to the system, deriving information from the system, editing and deleting information from the system.

Test: checking if the correct prescription is given when certain symptoms are displayed.

Test-Group: five to ten specialised doctors.

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| 1. In a usability test, list three reasons why the use of the user’s personal data might be challenging and propose solutions to minimise the associated risks. |

* Participants of the test may be resistant to providing information if their personal details are required. Design methods to conduct the tests that do not need personal details
* Users may not understand the conditions and consequences of providing their personal information. Make sure to explain the terms and conditions to the user.
* Laws governing the provision of personal details may be different in different places. Be sure to adhere to the laws governing the provision of personal details.

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| *Please, read the paper by Storm et al (2015) on the evaluation of seven physical activity monitors (available from the MOLE page for this module) and answer questions 3, 4 and 5:*   1. The paper describes two sets of experiments. The first experiment (protocol 1), involves a range of activities (indoor walking, descending 24 steps, outdoor walking…) to investigate the step count detection accuracy, and the second (protocol 2) is designed to investigate the accuracy of activity recognition. What are the advantages of conducting experiments like these over carrying out a survey of people to find out whether they think their activity monitors are accurate or not? What kind of answers are able to provide the two protocols proposed in the paper? |

The answers would allow for a larger group of people to test the monitors which allows for a more comprehensive result.

Also, the results should be more accurate in comparison to surveys as the information is first-hand and can be statistically proven using scientific facts.

The data would not be biased as it would be based on quantitative data rather than opinions.

The experiment would result with a sensor that gives the most accurate step count and activity recognition.

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| 1. Explain (a) what the experimental conditions used in protocol 1 were, (b) what the independent variable(s) were, and (c) what the dependent variable(s) were. Please, reason your answers. |

* 1. The test conditions were a set of exercises that were carried out by a group of people.
     1. The monitors were all worn in the same places
     2. Users were not allowed to make any sharp turns during the tests
     3. The monitors started the measurements at the same time.
  2. The independent variables were the Gender, age, Weight, Height and BMI
  3. The dependent variables were: The duration, accuracy of the step detectors

This is because the walking speed determines the period the experiment took. On the other hand, the accuracy of the step detector would be dependent on the walking conditions that the experiment was done in.

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| 1. Consider how convincing the evidence provided in this paper is, and discuss whether there are ways in which it could be improved. |

The evidence provided in this paper is extensive and well written. The use of known and factual formulas to prove statistics is good, as well as the use of graphs and charts to represent findings was good. Referencing from previously done work has also been well done.

The experiments could be improved by using a larger sample to get more precise and generalised results from the experiments. The participants should be diverse including people with mobility problems, and people who are handicapped to see how the accuracy of the monitors in such conditions.