MXB161 Original Creation Live Script template

Submission requirements

At first, you submit this document with the highlighted sections completed only. We will provide feedback on your plan to ensure it is feasible.

The fully completed document is then due, along with the rest of the portfolio, at the end of the semester.

- **Due date:**
  - Initially submit by 11:59pm, Friday 8 May (end of week 9) for feedback. Only the highlighted sections need to be completed at this time.
  - Submit the fully completed document on 11:59pm, Friday 29 May (end of week 12) along with the rest of your portfolio.
- **How to submit:** Via the assessment link on Blackboard

Project description	We plan to use image processing techniques to automatically pick up areas of interests detected during thermography of the breast which could indicate potential cancer tumours.
Unit topics	Which two topics from the unit do you plan to synthesise techniques from? • "What size is this?" • Image processing
Technique extension	This project would expand on image processing. Pseudo colouring of the image would be carried out on the raw infrared image and then basic image segmentation would be used to pick out areas of rapid temperature transition and highlight them.
Problem solution	A raw infrared image would be initially colourised to highlight temperature differences of the breast. Image processing in relation to filtering, and shifting would be carried out. A threshold temperature indicating areas of interest would then be chosen. Areas that rapidly transitioned to the threshold temperature would be segmented from the full image and isolated as points of interests. We would do this based on the principle that we assume there should be even/symmetrical temperature distribution across the chest in someone with no abnormalities, and that there would be asymmetry in someone with an abnormality. This would output an image focused on the high interest areas. If necessary, noise reduction or further image processing could be carried out. Our application is not aimed to be suitable for midline/centred abnormalities or abnormalities in both breasts.
Proposed timeline (complete this section only after you have received feedback on your proposal)	List the key milestones (or subtasks) and associated timelines that your team will need to meet in order to arrive at your problem solution. **Milestone description – completion date** 1) Define and agree on scope of project – day 1 2) Code to set up image and carry out necessary initial filtering – day 2 3) Code for pseudo colouring of image – day 3 4) Code for correcting any shift of midline in the image – day 4/5 5) Code for temperature scaling – day 6 6) Code to find the area of greatest difference – day 7 7) Code to suitably output images categorised correctly – day 8 8) Finalisation and clean-up of script – day 9
Team roles and responsibilities (complete this section only after you have received feedback on your proposal)	List your team members and outline what part of the project each will be responsible for leading. Milestone 1 – everyone Milestone 2 - Drew Milestone 3 - Matt Milestone 4 – Shu Milestone 5 - Josh Milestone 6 – Jake Milestone 7 + 8 - Eleanor