CSC100 COMPUTER SCIENCE PROJECT & ETHICS

Task 2: GROUP PROJECT GovHack 2021.

Problem statement

For this project you are creating a project that fits one or more challenges from GovHack 2021 to do this you must solve a real-world problem using open government data. More information is available at and

The over-arching themes of GovHack 2021 are:

Energy and Infrastructure

Our cities are built on interconnected networks of infrastructure from communications to transportation, utilities to power. Challenges under this theme will leverage data to enable a reliable, efficient, affordable and accessible infrastructure for a better tomorrow

Our Digital Future

The COVID-19 pandemic has accelerated digitalisation by a decade. Challenges under this theme will explore how this acceleration will impact citizens and businesses, and how open data can play a role in our digital future

Agriculture and the Environment

Our produce is some of the best in the world. Technologies and enabling services are assisting our primary producers to understand the land and make better decisions. Challenges under this theme will look towards digital agriculture, leveraging data to understand how land is used (or what's underneath it) and how to best manage our waterways and oceans.

Health & Wellbeing

Australia faced an unprecedented year of health and emergency service challenges, including those presented by the global COVID-19 pandemic.

If you haven't already you should sign up to Hackerspace at https://hackerspace.govhack.org/ which has detailed information on the award challenges that can provide more concrete suggestions for your project.

Also try googling "govhack 2021 youtube entry" for some examples of entries into the main competition, or https://hackerspace.govhack.org/events/moreton_bay_qld_digital_queensland/teams for entries from our region.

For GovHack teams had to create a video pitch, and potentially a prototype/proof of concept, for your project you need to identify (repurpose with attribution or come up with your own) concept and complete the project lifecycle for it – requirements, design, implementation and test.

Instructions to students

Students will work in a group of up to 5 on this project in their team. This assessment requires an written report and software product to be submitted to Blackboard. Every member of the team should contribute and you'll each be marked as a group and potentially scaled via the group's combined with a Self and peer assessment (SPA). The SPA should be completed individually and treated confidentially. Each member should submit their own SPA, with the group submitting just one copy of the report and completed product.

Your Group report should include:

- Sections corresponding to important stages of your project's development, including (but not limited to):
    - Introduction
        - a few paragraphs setting context of the whole project and outline what is your scope within this (if you have identified a larger idea, you may just select a small subset to implement)

- Team
    - The members of your team, optionally who was responsible for what parts of the assessment
    - Charter (or charter in appendix with reference here)
- Software Requirements Specification
- Design
    - UML design & if applicable UI and/or data design

      If you haven't used OOP use another UML diagram - e.g. sequence or collaboration are good for showing the process of a complex set of steps between methods (i.e. for a form you'll need to load the combo for suburbs, or you might need to validate your data)
    - Justification of decisions made relating to societal impact and ethical considerations - did you consider these in your design - if so how?
- Implementation
    - 1 - 2 paragraphs only (or a sentence with dot points is also fine). Include how to install/run, any information about referenced 3rd party libraries, versions of IDE or libraries - essentially anything that may be needed to get your project up and running.
    - Justification of decisions made relating to societal impact and ethical considerations - did you consider in your implementation (i.e. font sizes and colours) briefly describe.
- Test
    - Test plan - these should be black box (irrespective of code structure - don't need to know methods, loops etc), system tests (whole system together) based on your requirements. E.g.:
        - for "A phone number must start with 0" there should be 2 tests, one that does start with 0 and one that does not
        - for “A date must be valid”, at least 2 tests, one that is valid, e.g. 29/02/2020 (this year was a leap year!), one that is not 29/02/2019 &/or 30/02/2020
        - Consider writing step by step user scripts with values so it's repeatable (recommended but optional)
        - Remember to try to consider the "edge cases" like the leap year example above.
    - Test report
        - Literally each test you have, with Passed, Failed - suspected reason, or failed, corrected passed - brief description of correction, e.g. 'xyz.py line 139 had incorrect condition for if'
- Future work and Limitations
    - What had you planned to do but cannot, what have you found should have been requirements but weren't so needed for next iteration, what are the next steps for this part of the whole project, what limitations (e.g. unavailable data or systems)
- Conclusion
    - Short wrap up of the project - if you set goals in your team charter, here is where you assess if you met them. Consider the criteria "Justification of decisions made relating to societal impact and ethical considerations" if you haven't already - honest assessment of how you did against it.

Note: This is a general content guide – it is okay if you change the names of sections to suit your group.

You will be assessed on:

- Team Performance (via Peer assessment)

- Depth and breadth of innovation and creativity for design and specification
- Accuracy of mapping from established design to implemented product.
- Justification of decisions made relating to societal impact and ethical considerations.
- Quality of finished product including written communication

Additional Information

Consider the criteria "Justification of decisions made relating to societal impact and ethical considerations" - e.g. is your project accessible for those with vision challenges (colour blindness/low vision with screen readers/poor eye sight (consider font sizes!)).

Note it's ok if you didn't consider them but discuss this. Consider also cyber security, data privacy and confidentiality issues. Are there other examples you considered or became apparent while you were developing?

(aside: honesty here is good - reflection is a key skill that's undervalued by many in CS to their detriment. Admitting what you didn't do is not going to cost you marks else where - the artifact is the byproduct of the project's learning experience :-))

For those wanting D/HD consider reflecting on the success or challenges of the project - any learnings, anything you wish you'd done differently (no penalties for honest admissions, it shows understanding and learning)