IoT Project Topics

Fall 2023

Design and Implementation: Design and Implement the required system. Each group must work independently but you could leverage the established software modules online and in the books, with proper references. Data safety and security must be considered in the design, but implementation of data safety and security is not required.

Testing: Design and implement testing approaches and test cases to perform functional testing.

Please Submit (Each Student): Project Report, PDF (20 pages limit), presentation PPT (15 Pages limit). Deadline: end of November 26, 2023. Submit online. Late submission or Email submission = 0 marks.

The project report should include:

- Cover page with your names, student IDs and university Emails
- Brief Project Background, Technology and Market analysis (simple 1 page)
- System Design and Architecture
- System Implementation approach
- Data safety and security considerations
- Testing Plan Design, Testing Case Design, Testing Result
- Timelines, resource allocation and project planning (with task allocation for each student)
- Summary and References

Project Evaluation

- System Design 30%
- Implementation 30%
- Report 25%
- Presentation (PPT) 15%

Suggested hardware: two laptop computers with internet access, smart phones or pads might also work.

Choose ONE topic from the following topics:

Topic 1: A Location Based Smart Drive

Design and implement a cloud or local-computer based portal access smart drive system with any popular web browser on a computer or a cell phone/pad. User can drag and drop files to the portal interfacing area. The system will automatically put the files in different folders (on cloud or on your local computer) based on the real time location (name of the city) of the devices, such as “Vancouver”, “Surrey”, “Victoria”, “Burnaby”, “Coquitlam”, etc. If a new location is used, the system will automatically create a new folder for this new location and find out the city name of the location to use as the folder name, if the system cannot find the name of the city, the system will ask the user. The system will confirm after uploading (success/fail).

Topic 2: Water Tap Monitoring System

Design and implement a system which will monitor a water tap in your home. When there is water running out of the tap, the system should be able to detect it and display a “tap on” warning message on the screen of another device at least 2km away from home. When the tap is off, no water, the message should be “Water Off”. The design should consider emergency situations such as the city power is off or the home WiFi router is dead, and give appropriate warning.