Year 3 Final Year Project

Supervisor: Dr Hermawan Nugroho
Moderator: Prof T. Nandha Kumar
Project Code: HN-BEng-23-01

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Legends: Error Bars for Uncertainty: ↔   Moderator Meeting Week: ▮
Submission Dateline: ✖   Project Milestone: ☆

Tasks	Autumn Semester / Study Week / Exam / Sem Break / CNY Break / Spring Semester / HR Break / Study Week (Week 4 – Week 37)
Planning For Project Location and Item Requirements	
Hazard Identification, Risk Assessment, Risk Control Form (HIRARC) Form	
FYP Briefing and Discussion on Project Specification	
Hardware Inspection and Sensor Component Research	
Software, Tools and Application Research	
Finalising Project Objectives and Project Specification	
Hardware and Software Research and Purchase Cost Estimation	
Purchase Requisition	
Lab Space Booking	
Obtaining Ethical Approval	
Writing Project Outline and Planning Report	
Submission of Project Outline and Planning Report	
Researching and Studying Heart Disease Detection and Prediction Methods	
Researching of Common Application of Edge Computing	
Literature Review of Emotion Recognition using ECG	
Literature Review of Common Heart Disease	
Literature Review of Heart Disease Detection using Machine Learning and Deep Learning	
Literature Review of Heart Disease Prediction Model	
Literature Review of STM32MP157F DK Edge Computing Device and Application	
Literature Review of Software Tools, Model and Architecture for Edge Computing	
Designing Solution/Application and Setting Up Edge Computer	
Research and Learning the Function of STM32MP157F DK Edge Computer	
Installing Virtual Machine to Set Up STM32 Software to Flash OS into the Edge Computer	
Installing STM32 Cube Programmer in Ubuntu OS	
Coding Program to Test Functions of Edge Computer	
Integrating Heart Monitoring Sensor onto the Edge Computer	
Coding Program to Test Sensors and Perform Experiments to Ensure Accurate Measurements of Sensors	
Designing Wearables of that can be Integrated with Heart Disease Detection and Prediction Solution (Optional)	
Deployment of AI Model in Edge Computer	
Setting Up Environment to Deploy Heart Disease Detection and Prediction Model	
Coding Program to Develop Emotion Recognition Model	
Coding Program to Develop Heart Disease Prediction Model	
Coding Program to Connect Sensor with AI Model	
Coding Program to Display Prediction Output on the LCD Display (Optional)	
Developing User Interface to Monitor Heart Disease and Data Collected from Sensor (Optional)	
Debugging Code to Solve Bugs Found, Improvement of Code/Model	
Integrating Model, Sensor, Edge and Cloud Computer Developed	
Combining both Software and Hardware Developed into Wearables (Optional)	
Integrating Intel OpenVINO Model Optimizer and Hardware Accelerator	
Deploying Heart Disease Prediction Model Developed onto Cloud Computer	
Deploying AI Models Developed onto Edge Computer	
Performing Testing on Real Live User	
Obtaining User Experience, Feedback and Model Prediction Result	
Performance Improvement and Solving Bugs	
Thesis, Documents and Presentation	
Writing Sections of Draft Thesis	
Draft Typed Thesis Submission	
Writing Sections of Final Thesis	
Final Thesis, Logbook, Code and Miscellaneous Submission	
Preparation of Presentation	
Presentation	
Return of Project Items	