PARAMEDIC CERTIFICATION TEST PERFORMANCE EVALUATION & TRACKING II

Project Proposal by **Singapore Civil Defence Force (SCDF)**

1 | CLIENT PARTNER PROFILE

The Singapore Civil Defence Force (SCDF) is the national emergency medical services (EMS) organization in Singapore, which currently consists of a fleet of 90 ambulances and responds to more than 210,000 calls to the national emergency “995” hotline annually. As an EMS organization, SCDF also looks into the training and continuous upskilling of frontline paramedics to ensure optimal care delivery and outcomes.

2 | BACKGROUND OF PROJECT

Every paramedic in SCDF must complete various surveys and assessments on a regular basis as a competency assurance mechanism. Prior, there is no system in place to track a paramedic’s performance during the qualification training, and subsequently during certification and re-certification. We worked with some of your fellow students in SMU in early 2022 to develop a prototype of an electronic system which allows more efficient tracking and analysis of performance and empower change in teaching methodology and self-directed learning.

The developed prototype allowed us to:

1. systematically tag question to various parameters of interest,
2. enable rapid generation of test papers using a set of parameters for purposes of self-directed learning and testing, and
3. provide instantaneous feedback to the paramedics during practice.

3 | OBJECTIVES OF PROJECT

We are keen to work with your team to further develop this prototype to a minimally viable product, with a focus on:

PRIMARY OBJECTIVES

1. Generation of simple performance statistics in the form of a dashboard and test reports
2. Refining of the testing functions of the prototype

SECONDARY OBJECTIVE

1. Introduction of simple security features to the prototype

We are open to discussion and would be happy to hear your suggestions on further improving the current prototype.

4 | BENEFITS OF PROJECT

The development of an analytics module for the prototype will allow us to track and analyse performance more efficiently. This will provide valuable information for the individual and the organization for timely evidence-based modifications to paramedicine training and just-in-time self-directed learning. The longitudinal data can also be later correlated against other datasets for discovery of hitherto unknown predictors of performance; all in all, this helps the force to implement effective measures to enhance the overall standard of pre-hospital care delivered by our paramedics.

5 | LEARNING OBJECTIVES

We would like to provide an opportunity for you to apply your knowledge in Information Technology to a problem in the healthcare industry, specifically in the setting of pre-hospital care. We do hope that through this collaboration, you will be able to better appreciate the role and utility of informatics in healthcare.

6 | DELIVERABLES

We are proposing the following deliverables:

1. Minimally Viable Product (MVP), allowing for actual implementation for the designated certification tests
2. Copy of the codes – to ensure sustainability of the prototype for future projects
3. Instruction Manual on Use of Prototype

7 | PRE-REQUISITES

MEDTEST, the current prototype, is a full stack web application. Its front-end framework is written using VueJS (Javascript). Its backend is written using NodeJS (Javascript) with a NoSQL Database (MongoDB). The application is intended to be ran on Chrome or Chromium based browsers e.g. Edge.

For more information regarding the technicalities of the prototype, we will be happy to share the technical documentation for the application prototype for your reference.

Should you like to find out more or are keen to take on the project, please feel free to contact:

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