

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY (PERAK)

BACHELOR OF INFORMATION SYSTEMS (HONOURS)

INFORMATION SYSTEM ENGINEERING

**UCCA2513 MINI PROJECT**

**ASSIGNMENT 1**

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| TUTORIAL GROUP | **T2** |
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**Assignment 1 Marksheet**

By signing below, we confirmed that the work produced was original and purely based on our own sentence construction. Should there be any plagiarism detected, we agreed mark penalization on the part(s) detected.

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| **Criteria** | **Weightage** | **Student Score (0-5)** |
| Introduction | 1% (Scale/5\*1) |  |
| Problem Statement | 2% (Scale/5\*2) |  |
| Expected Innovation | 2% (Scale/5\*2) |  |
| Project Objectives | 2% (Scale/5\*2) |  |
| Gantt Chart | 1% (Scale/5\*1) |  |
| Development Tool | 1% (Scale/5\*1) |  |
| Citations and References | 1% (Scale/5\*1) |  |
| **Effort and Technical Capability Score**  **(Deduct MAX 0.5 mark if marksheet is missing or not being placed in front after the cover page and/or cover page missing)** | **10%** | % |

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| **Scale (0-5)** | **Description** |
| 5 | Excellent work produced. Evidence of in-depth study **and** critical thought |
| 4 | Good work produced. Evidence of in-depth study **or** critical thought |
| 3 | Average work produced. Evidence of some study **or** thought, although not extensively covered |
| 2 | Below average work produced **or** work **not** supported by any study/basis |
| 1 | Poor work performance **or** work **not** supported by any study/basis |
| 0 | Not attempted |

**Project Title**

Timely & Effective Care Metrics Dashboard

**Introduction**

The module chosen is Timely and Effective Care. Healthcare institutions should prioritize delivering care that is grounded in the latest research findings, a practice commonly referred to as evidence-based medicine. Many of these evidence-based guidelines are contingent on adhering to specific timeframes during the provision of healthcare services. Timeliness in healthcare demonstrates how effectively institutions plan and deliver services when they are most needed [1]. According to the Agency for Healthcare Research and Quality, timeliness is crucial for improving patient health outcomes and fostering patient engagement. However, delays in healthcare services can lead to patient frustration and disappointment. Factors such as being put on hold for extended periods and prolonged waiting times in the clinic can be aggravating. Healthcare providers often face the challenge of balancing quality care delivery with punctuality, especially in unforeseen situations. Excessive waiting, including waiting for test results or prolonged emergency room wait times, can have negative effects on patients, affecting them both mentally and emotionally. Furthermore, lengthy wait times at emergency rooms may lead patients to seek care at alternative hospitals [2].

**Problem Statement**

There are two similar systems that’s has been reviewed which are HospitalCompare and AZ Hospital Compare. A few technical issues have been identified with both systems.

* Lack of Real-Time Data

HospitalCompare does not have real time data at all while [3] AZ Hospital Compare has data which is either quarterly or monthly [4]. Real-time data enhances decision-making efficiency and effectiveness and minimizes the risk of overlooking opportunities or making suboptimal decisions [5]. On the other hand, without real-time data, patients may face challenges in making informed and timely decisions about their healthcare choices. The absence of up-to-date information could lead to reliance on outdated metrics, potentially resulting in less accurate assessments of hospital performance. This may hinder patients from adapting to recent changes in healthcare services, identifying the most suitable providers, or responding promptly to emerging healthcare needs, potentially impacting the overall quality and timeliness of their healthcare decisions.

* Absence of WEB API

HospitalCompare lacks a WEB API, specifically a map API, hindering users from obtaining a clear geographical view of compared hospitals. In contrast, AZ Hospital Compare incorporates a WEB API, including a map API, which enhances user experience by providing a visual representation of hospital locations. This feature aids in spatial comprehension, enabling more informed decisions based on geographical context and contributing to a user-friendly hospital comparison experience.

**Expected Innovation**

**Project Objectives**

**Gantt Chart**

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**Development Tools**

The development tools which are involved in this project are Python, HTML, CSS, and JavaScript. Firstly, Python will be used to convert the CSV file which consists of the dataset to JSON format. Besides that, HTML will be used for structuring the dashboard, defining the layout of the webpage with elements like tables and headers. Moreover, CSS will be used to enhance the visual appeal, offering styling capabilities to format and design HTML elements. Furthermore, JavaScript plays a pivotal role in bringing interactivity to the dashboard, allowing for dynamic data retrieval, updating of the Document Object Model (DOM), and the creation of engaging user interactions. The combined functionality of these tools empowers the establishment of a comprehensive and interactive business intelligence dashboard focused on hospitals, streamlining the process of comparing and analyzing the data.

**References**

[1] “Measures of timely and effective care,” UAB Medicine, https://www.uabmedicine.org/quality/measures-of-timely-and-effective-care/ (accessed Nov. 8, 2023).

[2] A. Jenkins, “What is timeliness of Care & How Can You Make your practice more efficient?,” Upfront Healthcare, https://upfronthealthcare.com/resources/updates/what-is-timeliness-of-care/ (accessed Nov. 8, 2023).

[3] “Hospitalcompare,” Hospital Compare, https://hospitalcompare.io/ (accessed Nov. 8, 2023).

[4] “ADHS hospital compare,” Redirect, https://gis.azdhs.gov/hospitalcompare/ (accessed Nov. 8, 2023).

[5] J. Robson, “The power of real-time data: Revolutionize your business with eventstoredb,” EventStoreDB - the state-transition database for data-driven businesses, https://www.eventstore.com/blog/the-benefits-of-real-time-data#:~:text=The%20benefits%20of%20real%2Dtime,opportunities%20and%20suboptimal%20decision%2Dmaking. (accessed Nov. 10, 2023).