

Developing a COVID-19 Tool as a Web-Based Means of Assessing Gold (iGold)[†]

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Abstract: The focus of this study was the design and development of a web-based application for the assessment of gold during the COVID-19 pandemic known as Cov_iGold. The pandemic had clear and serious consequences for the global economy due to the stringent quarantine guidelines introduced which led to economic activities becoming dormant. Despite the extreme restrictions on operations and face-to-face transactions, there is still a demand for gold. As the global market has been widely affected, this platform is expected to provide a general tool to meet the demands of gold collectors and merchants. It is a self-exploratory application, through which users will be able to gain daily access to gold-related information, e.g., current prices, gold market trends and the selling and purchasing of gold with added features. This tool was developed according to five stages of the Systems Development Life Cycle (SLDC), namely, planning, analysis, design, implementation and maintenance. Gold merchants can easily track their buyers, receive payment hassle-free and effectively manage large numbers of buyer-related data in one repository. With these significant functions, inaccuracies in data will be reduced or eliminated. Having these resources at their fingertips, Cov_iGold users will be able to fully optimize its features from the comfort of their own homes.

Keywords: gold; web-based tool; COVID-19; iGold



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1. Introduction

Since the emergence of the COVID-19 crisis in 2021, small enterprise and business owners have become a focus of attention in the research on small and medium enterprises (SMEs) in the Malaysian economy. According to the SME Annual Report (2016), a micro-enterprise is defined as an organization with fewer than five employees and yearly sales of less than MYR 300,000. Such organizations account for about two-thirds of Malaysia's SMEs. Utilizing a web-based tool, an online approach has been developed with the aim of identifying the biggest challenges facing SMEs after the COVID-19 outbreak and charting entrepreneurial performance and trends over the course of the pandemic. Three research objectives are highlighted, namely, to (1) provide access to the current price of gold, (2) allow comparison of the prices of gold among different sellers and (3) reduce the numbers of people going out to survey the price of gold. This study employed a web-based tool to obtain materials from authoritative sources related to the aims of the study. Researchers have studied the contents of journals, papers and books to explicate the strategies used by successful entrepreneurs in managing their businesses during the COVID-19 pandemic.

Their findings have allowed them to provide support for the sustainability of micro-enterprise entrepreneurs during this crisis. This study was carried out in accordance with the objectives of this research.

The COVID-19 pandemic started in the year 2020 and has tremendously affected micro-enterprise operators. However, the implementation of the business continuity strategy for micro-enterprises as a means of coping with the crisis has not been fully explored. Furthermore, gold merchants in Malaysia will likely face new challenges as the pandemic continues. They might be sued or forced to shut down their operations if they fail to comply with standard procedures [1]. Fortunately, with the rapid growth of online platforms in the market, there is an open-source opportunity for gold merchants to expand and conduct their businesses via e-commerce platforms. Therefore, the primary goals of this study were to provide a means of accessing the current price of gold and comparing the price of gold among sellers, thereby reducing the numbers of people going out to survey the price of gold.

2. Literature Review

Gold as jewelry is a good investment and has been dominant in world markets. In fact, gold sets the benchmark in terms of prestige due to its ability to withstand any crisis. According to one study [2], gold is a great asset with increased liquidity and represents a solid investment that is stable both short-term and long-term. However, due to massive demand, the price of gold has greatly increased over time. Before making an investment, it is vital for gold buyers to grasp the nature of gold investment. A considerable amount of research has attempted to ascertain the variables that affect customers' decisions to purchase gold and the significance of these factors. The uncertain economic situation during the COVID-19 pandemic and the gold market's persistence are encouragements to people to explore the feasibility of gold as a financial instrument that is resistant to depreciation. Another study [3] concurrently supported the potential of gold as a safe financial asset. This finding was strongly supported by the findings of previous research [4–6]. According to these authors, central banks have kept significant amounts of gold in their reserves for a variety of reasons, including economic security, because gold keeps its purchasing power, is suitable for portfolio diversification, is physically secure since it is a highly liquid asset, has guaranteed value in times of economic complexity and represents a relatively risk-free investment in economic crises. The authors of one study [7] examined several aspects of gold as a financial asset and discovered that gold acts as an inflationary hedge. Their research revealed that gold meets the criteria for zero beta assets and market risk. From a Malaysian perspective [8], it was reported that during times of economic uncertainty, particularly when the stock market has collapsed, gold investments have made important contributions to economic stabilization. In addition to the above studies, the authors of [9] discovered through their research that a significant proportion of the population bought gold for religious festivals, anniversaries, birthdays and family weddings. According to [10], the leading causes of gold jewelry purchases are cost, purity, design, the wide range of choices, image and pressure from family and friends. Customers need to have sufficient knowledge in order to make decisions when buying gold. The knowledge required by consumers to decide on a gold purchase process is liable to vary between individuals [11]. The authors of the previously mentioned study also stated, based on their research, that product knowledge affects consumers' online purchasing decisions. It is human nature to reflect on social engagement, which is a very common factor in people's daily activities. Various cyber activities can be performed via numerous digital platforms which enable users to exchange information and share ideas online [12].

Today, the evolution of the Internet propels the evolution of online web-based systems as essential communication media, resulting in the emergence of virtual communities. The online world has presented a new perspective on social communication, connecting people to a variety of evolving online communities over the past decade. Vendors of products and customers may never meet in the real world, yet vendors are able to affect

customer behavior, including purchasing decisions [13]. The Internet is a social place where information is created and shared among consumers [14]. Web pages are considered highly involving advertising spaces due to the ease of their access by consumers [15]. Furthermore, web sites with interactive links provide ample and unlimited spaces for users to craft their information. In fact, the dynamic character [16] of web-page communication is due to the interactivity which allows individuals the freedom to choose and consult suppliers and vendors.

In today's setting, especially during the COVID-19 era, people do not mind paying extra charges to ease their online shopping experiences, as these processes are convenient and less time-consuming than actual shopping [17]. One study [18] revealed that only people who already trusted the Internet and had prior online experience would want to buy gold online. Consumer trust levels are likely to be influenced by a website's quality, technological reliability and online shopping capabilities. Another study [19] identified several factors which affect consumer behavior in purchasing goods online. The factors prioritized by consumers were found to be price, convenience, security, information quality and access to a website.

3. Background of the Study

3.1. Problem Statement

From prehistoric times, people across the globe have displayed a special interest in gold either in the form of jewelry or gold bars. Gold is prized for ownership, prestige and status. The passion for jewelry is widespread. However, due to the COVID-19 pandemic, global markets were severely affected and most stores selling gold were prohibited from operating. As many nations adjust to increasingly rigorous quarantine regulations and find their economic operations severely constrained, the epidemic can be seen to have had an obvious and significant impact on economies all over the world [20]. Despite this, there is still a demand for gold. Based on survey data, it was found that gold shops were inundated with visitors seeking to purchase the coveted gold collections. Most of the customers ignored the physical social distancing procedures due to their excitement. Some stores were relatively small and crowded with visitors and the owners did not impose standard operating procedures (SOPs) or ask visitors to enter in stages [21]. Such practices are particularly unsafe, as customers are prone to COVID-19 infection. Meanwhile, according to [22], it is evident that demand for gold persists even though prices are high, with increments in the price of gold expected in the future. This is due to the expectation of higher returns upon resale. Facing unprecedented risks in the markets, people feel an increasing need to make secure investments. The study reported in [23] presented evidence that gold was a safe investment in times of post-political and financial crises. Gold is preferable to other types of assets generally considered secure due to the behavioral prejudices associated with gold's history as a commodity—a product of constant value and a secure investment. Remarkably, people will go from one store to another to find the cheapest prices. However, due to the risk of being infected by COVID-19 and the imposition of MCOs, it is difficult for people to complete surveys. Due to the fact that gold remains popular, even during the pandemic, and can be hedged against crises, researchers are keen to develop a web-based tool that can be employed to assess and easily compare the price of gold among different sellers. Such a web-based tool would save time and reduce the numbers of people leaving their homes during the Movement Control Order (MCO) period.

3.2. Objectives of the System's Development

This paper will examine the motivation to develop a web-based tool to assess the current price of gold during the COVID-19 pandemic. The development of such a web-based tool is imperative, since gold is still in demand during the pandemic despite the strict MCOs. A web-based tool would be beneficial and save the time of people wanting to

compare prices and services offered by different stores. Hence, the research objectives of this study were:

1. To provide access to the current price of gold and a means of comparing the price of gold among different sellers;
2. To facilitate the process of surveying and purchasing gold;
3. To design and develop a web-based tool for assessing gold and evaluating performance.

4. Materials and Methods

Five stages of the System Development Life Cycle (SDLC), namely, planning, analysis, design, implementation and maintenance, were deployed as a methodology in order to gain a clearer view for each phase involved [24]. A few existing systems with similar functions were evaluated to discover problems with these systems in order to develop a new system that would be much more user-friendly. Moreover, for the Cov_iGold system, we included any software and hardware that was deemed most suitable for use in building the system. Next, we determined user requirements by several methods, such as interviews and observation. Individual and group interviews were conducted, with gold merchants especially, to obtain information about operations, issues and the need for an online platform to help sustain trade in gold. Furthermore, we also observed, at selected times, how data were handled and what information people needed so that we could develop a system that would be better for the user [25].

Regarding the design phase, the detailed process of the proposed system's construction is illustrated in a data flow diagram. Our system design was expanded by designing and creating an entity relationship diagram (erd) and data dictionary (metadata) which explained the structure of the database system. We also created an interface for the system, namely, an input, output and dialog box, to make it easier for users to utilize and comprehend its functions. In addition, during this phase, we created an interface to ensure that the system was user-friendly to facilitate engagement [26].

This phase entailed the determination of the project's outcome, and the implementation of the project became clearer, as coding and testing were executed at this stage. During this period, the public became aware of the project and may have believed that it had already been initiated. This was a crucial stage, where all of the actions taken were crucial to sustaining momentum throughout the rest of the process. The PHP programming language was used to code the system. According to [27], the process of coding uses just a few functions, for example, an insert and update function to make sure that the buyer and seller can update the system and insert the necessary data. Furthermore, we also incorporated buttons, such as buyer profile updates, so that buyers could register and update their information, enabling them to compare fluctuations in prices and choose the merchants they prefer. The payment method features also provided updates on their payments after the approval of transactions. Additionally, the interactive buttons for the "Contact Us" and "About Us" pages navigated users to information about the Cov_iGold system and future correspondences.

SDLC's maintenance phase begins after a product is fully functioning and includes upgrades, repairs and software patches if the software has broken down [24,28]. During this phase, we made the final alterations to the system, fixed a few problems and display errors and organized the design of the system. Finally, we presented the system to users, informing them about how the system operates and the functions that can be performed.

5. Main Interfaces of the Cov_iGold System

The following figures display the main interfaces of Cov_iGold. Figure 1 indicates the main interface of the system. The figure shows the landing page of the Cov_iGold system. Figure 2 illustrates the login page of the system. Users are required to register an account with the system to facilitate the process of browsing and purchasing items. Next, Figure 3 shows the search page of the system. Users can search by keywords and price.

Figure 4 indicates the promotion page of the system. The page provides information on items, including price, a description and images.

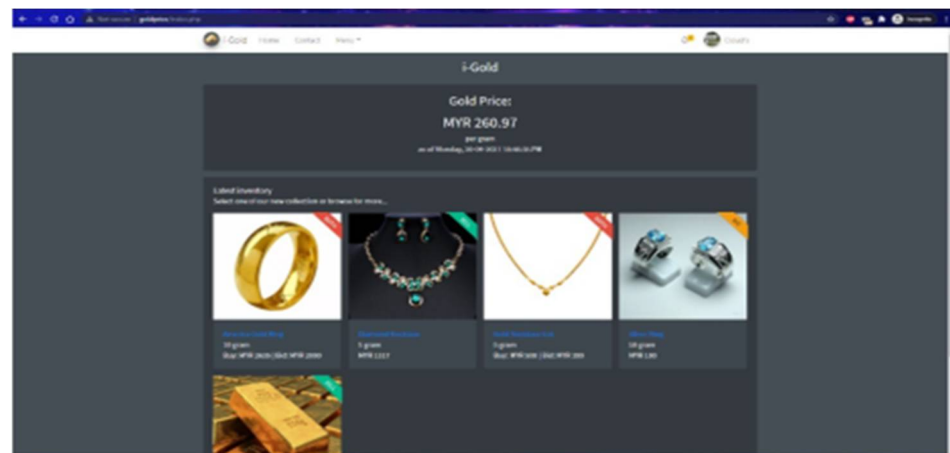


Figure 1. Main page of Cov_iGold.

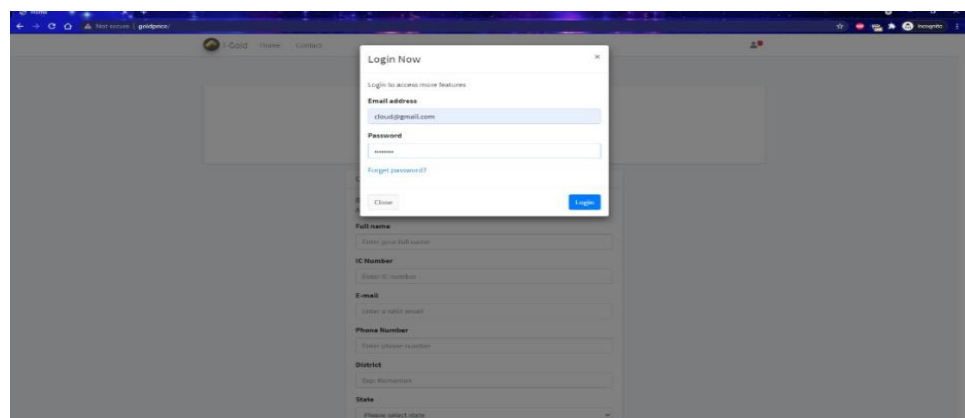


Figure 2. Login page.

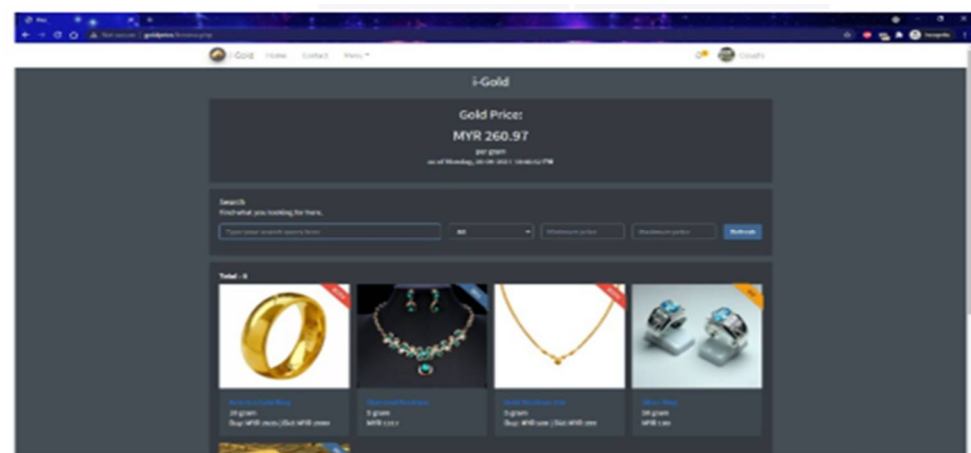


Figure 3. Search page.

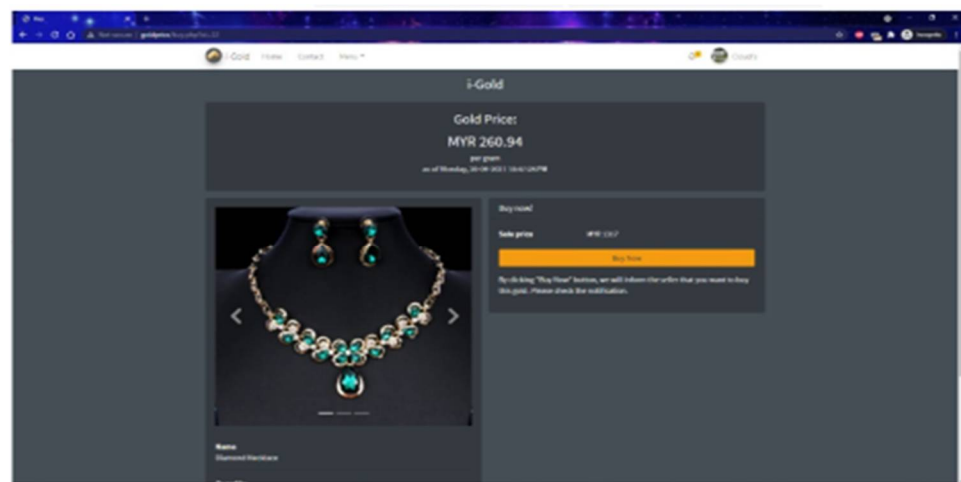


Figure 4. Promo page.

6. Conclusions

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