



**NSBM Green University**

Faculty of Computing

BSc. (Hons.) Management Information System

**Module IS203.3 & BPM**

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**Project Report**

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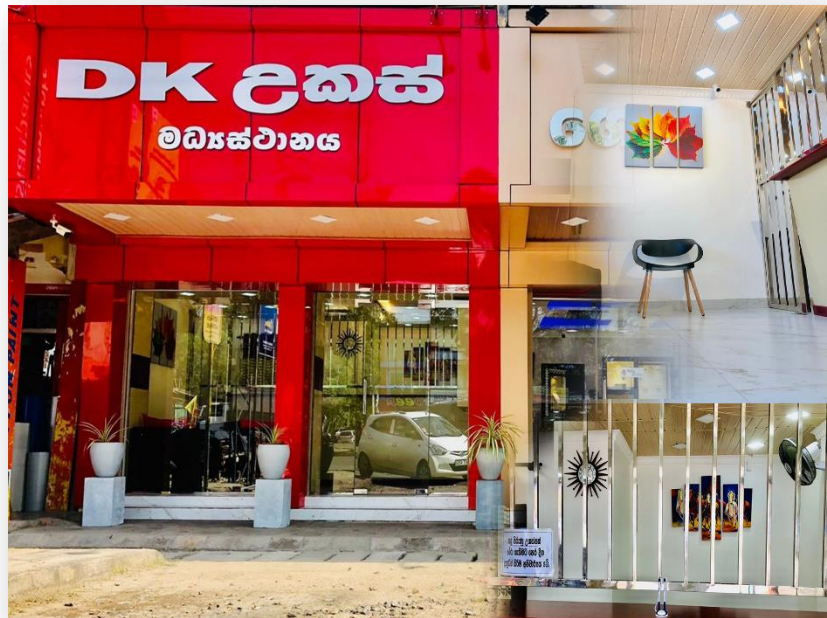
## Organization description...

Company: D.K. Pawing Center Dehiaththakandiya.

For this project we decided to choose D. K. Pawing Center located in Dehiaththakandiya area. Mr. I. B. Jayantha Raja is the owner of this business, and he started this mortgage center on 27/01/2021 and he has been running this business for over two years continuously. This is a sole proprietorship small scale business, and this business is run by him according to the mortgage laws and regulations that have been maintained by the government.

This business is built on two main processes. They are giving money to the customer after receiving gold items from the customers, and saving the gold items that are going to lost to a certain organization and giving an appropriate amount to the customer.

As a proper description of the work done in here, mainly D. K. Pawing Center give money by depositing gold (Exchange money with gold) for a certain period with an agreement. In here, for the gold items received from the customers, money is given as a mortgage according to the gold price and interest rate prevailing on that day. Also, if the customer couldn't save their gold which deposit in another company, D. K. Pawing Center can buy those gold items as a mortgage according to the customer request and give appropriate amount of money to the customer. They usually keep every detail about the business in their own manual data repository and usually work 2-3 members in the shop. With the economic crisis, the customers of the business got a bit increase and the work situation got bit busy some days. The shop opens from 9.00 am to 8.00 pm on weekdays and in weekends it closes at 6.00 pm.



*Img.1*

## Scope of the process...

As mentioned earlier, this business is built on two main processes,

1. Take golden items from the customers and give a suitable amount of money to them.
2. Save gold items which are deposited in other organizations as the request of customers.

The first process mentioned above is the most popular and frequently done in this business. In this process we can identify three main sub processes. They are, pricing process for the gold items, the process of fixing interest rates for gold commodities, foreclosure of overdue mortgages. All these processes are carried out under the supervision of the owner. The process starts when the customer brings their gold items to the shop, and it ends after the customer receives the money with the mortgage bill.

The customer first comes to the shop and discusses the situation with the cashier or the shop owner to know the value of the golden item/s he/she has and the interest rate that he/she have to pay. To start pricing the gold item, the cashier accepts the gold item/s and sends those gold item/s to the owner of the shop. First, he checks and categories the type of gold item whether it is a chain, bracelet, ring, pendant, earring, etc. and notes it in a temporary report. If there is more than one item, then take one by one and scale the weight, measure the carat amount of the gold item, and check the price table which updated at that moment. (*10 March 2023 price table: 'img.2'*). Then calculate an item price by multiplying the carat unit price of that particular item with the weight of that item and note those all amounts/details in the report. That process runs until calculate each price of all items and get the total price of all items received.

| Gold Unit                          |  | Gold Price            |
|------------------------------------|--|-----------------------|
| Gold Ounce                         |  | Rs. 584,342.00        |
| 24 Carat 1 Gram                    |  | Rs. 20,620.00         |
| 24 Carat 8 Grams ( 1 Pawn )        |  | Rs. 164,900.00        |
| 22 Carat 1 Gram                    |  | Rs. 18,910.00         |
| <b>22 Carat 8 Grams ( 1 Pawn )</b> |  | <b>Rs. 151,250.00</b> |
| 21 Carat 1 Gram                    |  | Rs. 18,050.00         |
| 21 Carat 8 Grams ( 1 Pawn )        |  | Rs. 144,350.00        |

*Img.2*

After that, the interest percentage is determined in relation to that gold item/s. To fix the interest percentage, get the total price of all items received and check whether that price is greater or less than Rs. 20,000/=. If the total price is equal to or less than Rs. 20,000/=: the interest rate set to 5% and otherwise if total weight is greater than Rs. 20,000/= the interest rate

After the owner calculates the mortgage price and the interest rate based on the prevailing gold price, the customer decides whether to pawn the gold items or not. If the customer isn't satisfied with doing the business, then the gold item/s will return to the customer and cancel the business. After the customer made his/her decision to pawn the gold item/s the cashier opens a form paper to include customer personal details. For that the cashier takes customers' full name, address, mobile number, NIC number. Then take details of gold item/s type, weight of each item & total weight of gold, total money that can give, interest rate & repayment duration from the item/s detail report which previously filled by the owner and include them in the form. Then start to fill the bill with the collected details (Img.3) and get the signature of the customer & send it to the owner. The owner checks & signs the bill and releases the amount of money. At the end of the main process the customer receives the respective amount of money, and the original copy of the bill and the owner will store the gold items in the store safe.

*Img.3*

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## **Process discovery methods...**

In this business, to identify the scope of each of every possible business process, we used different process discovery methodologies. In here we mainly used **interviews**, **observation**, **document analysis** methodologies.

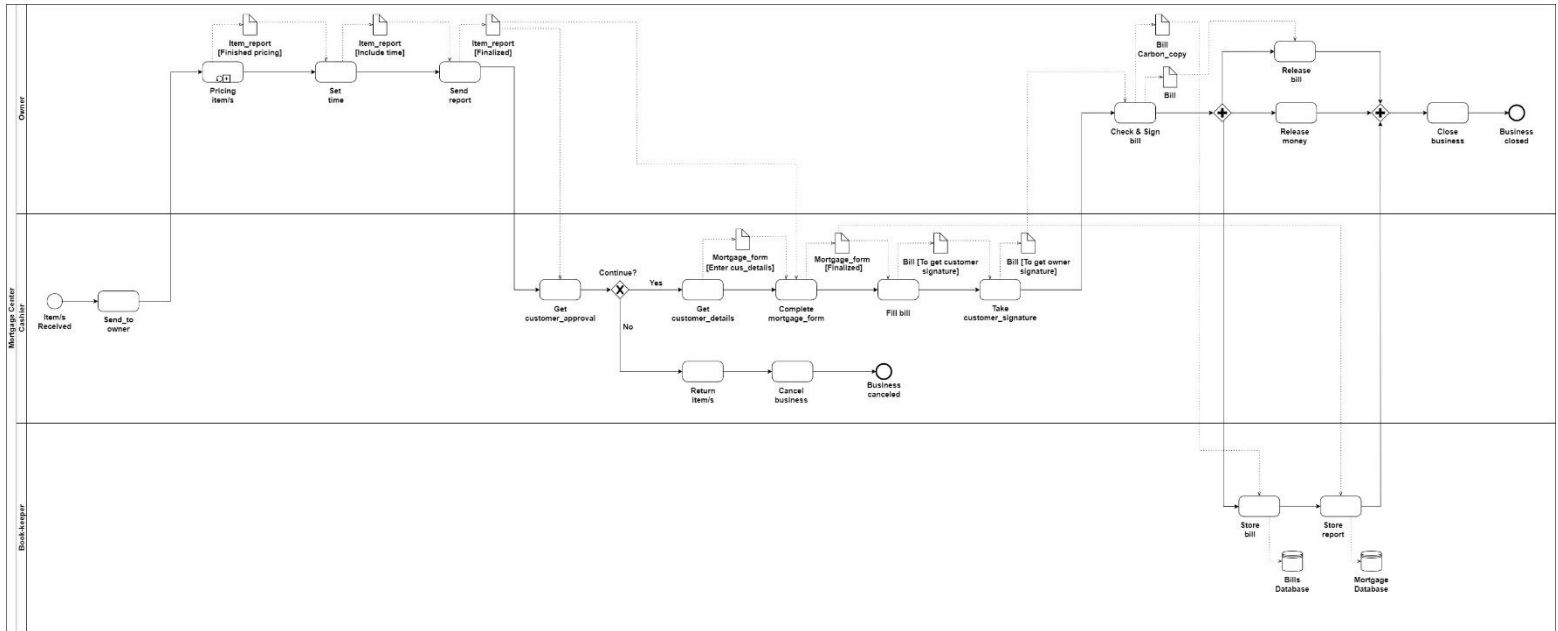
First, we set up an appointment with the owner and the co-owners (domain experts) of the business to get a brief on the overall business and its activities. In here we used some pre-set questions and some random questions about the business process. In here we mainly discovered the main processes and sub processes of the business, starting and ending points of those processes, the activities of each process, and the relationships & actors of the processes.

We got a few hours and did an observation about how the business process practically happens in each process separately according to the explanation of the domain experts. In here we observe how the customers come and start their conversations with the cashier or the owner, what are the answers they give to the customers and how they handle the business, what type of items customer brings to the company, how the business provides the service to the customer, how the activities are do and who engage in those activities, and the ends of processes. After and during the observation, we discussed some questions with the clients, employees, and the owner & co-owners.

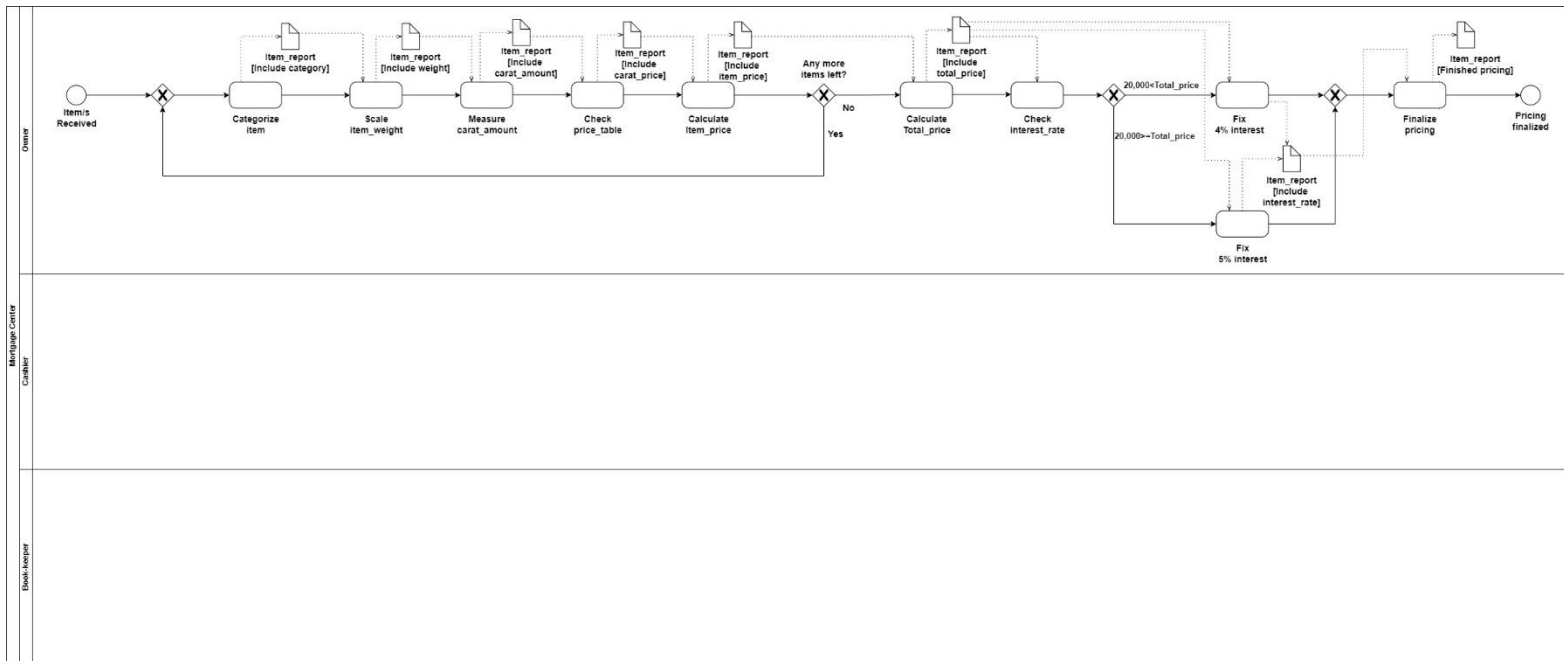
Also, we did a document analysis with the permission of the owner to find how the documentation is done throughout the process and get further understanding of the process. In here we analyzed how the bills and other forms & documents are prepared and store in files and how they manage the files to continue business activities.

Overall, by doing process discovery methodology, we could get a clear understanding about the start & ending points of processes, the activities of each process, actors, and the data objects of the whole business. It was helpful to make a process portfolio for the overall business and find the highly important and high dysfunction process which is most feasible to do changes.

# As-is process model...



- 'Pricing item/s' as-is sub-process.





## Problems of the process...

For this project we choose the main process of the company which the process starts when the customer brings their gold items to the shop, and it ends after the customer receives the money with the bill. In this case, D.K. Pawning Center currently using a physical file-based system to do the above-mentioned process and other processes of the businesses with three human work force. When considering the key performance indicators to measure the business process it mainly affects the quality and cost of the business.

### ❖ Quality

The whole process runs in a manual way using paper books and files. Even though the outward appearance and the inside facilities of the building are in good condition, the quality of most activities do not match the modern business world. The **poor use of technology** is mainly affected by this problem. The following mentioned the problem points in this case.

- The item details, customer details reports and bills all are prepared in a manual way, and it will cause many accuracy problems, and may reduce customer satisfaction or customer attraction.
- All the documents and the bills are stored in a manual file-based system which has a **high risk of misplacement or loss in an accident**. Also, it will take more time to find, review, or analyse the old document details.

Also, we noticed that, when the customer does their re-payments in instalment way, the accounts related to the business are **written on the backside of the same bill** using a pen and put signs. It will lower both the quality of the business and customer satisfaction greatly.

### ❖ Cost

In this business we can see three actors used to handle the business activities. The owner, cashier and the bookkeeper are the three actors. Owner must pay the salaries to the cashier and the bookkeeper for their jobs done in the business. In here we realized that **three human work force is too much** for this kind of small-scale organization.

As mentioned above maintaining a physical file-based system will generate considerable cost for the business. Also, the business has to set aside some amount of money for the stationery items and wastages like paper wastages if the business is cancelled.

## Improvements to do...

As the solutions/improvements for the above-mentioned problems, we mainly suggest using a semi-automated system in the process which includes more technology to do business activities with expected quality and reducing the number of actors to two and it will help to reduce the cost of the process.

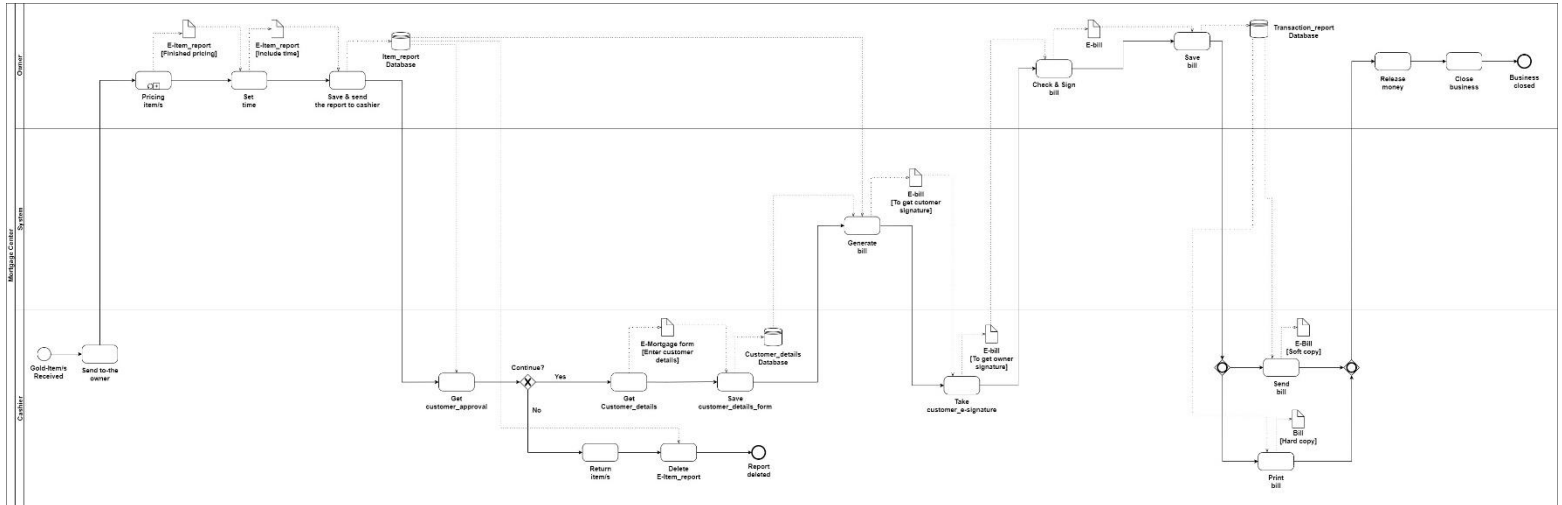
Develop and install a software system which both owner and the cashier have access to with access limitations. This system will get item details and auto calculate the total value and the interest rate, generate the finalized item report, get customer details & item details to generate customer details form, auto generate a bill, analyse the details & accounts, and generate monthly business report, all the details & accounts will store in the system database or cloud database with a backup. The following mentioned the process after the changes.

The cashier receives the gold item/s and sends them to the owner as usual. Then the owner checks & categorizes the item/s, scales the weight of item/s & measure the carat amount of item/s one by one. All the amounts input to the software system by opening an item report and it will check the current gold values and will calculate each item price using input values, total price, and the interest rate according to the given instructions. After generating those values, the owner can decide & set the re-payment time duration. After completing the item report owner can send the report to the cashier through the software and the report will display in the cashier machine. The report will be saved in the 'Report Database' automatically by the system. With the provided details, the cashier can get the approval from the customer whether to continue the business or not. If the customer isn't satisfied with doing the business, then the gold item/s will return to the customer and if want, can delete the saved item form.

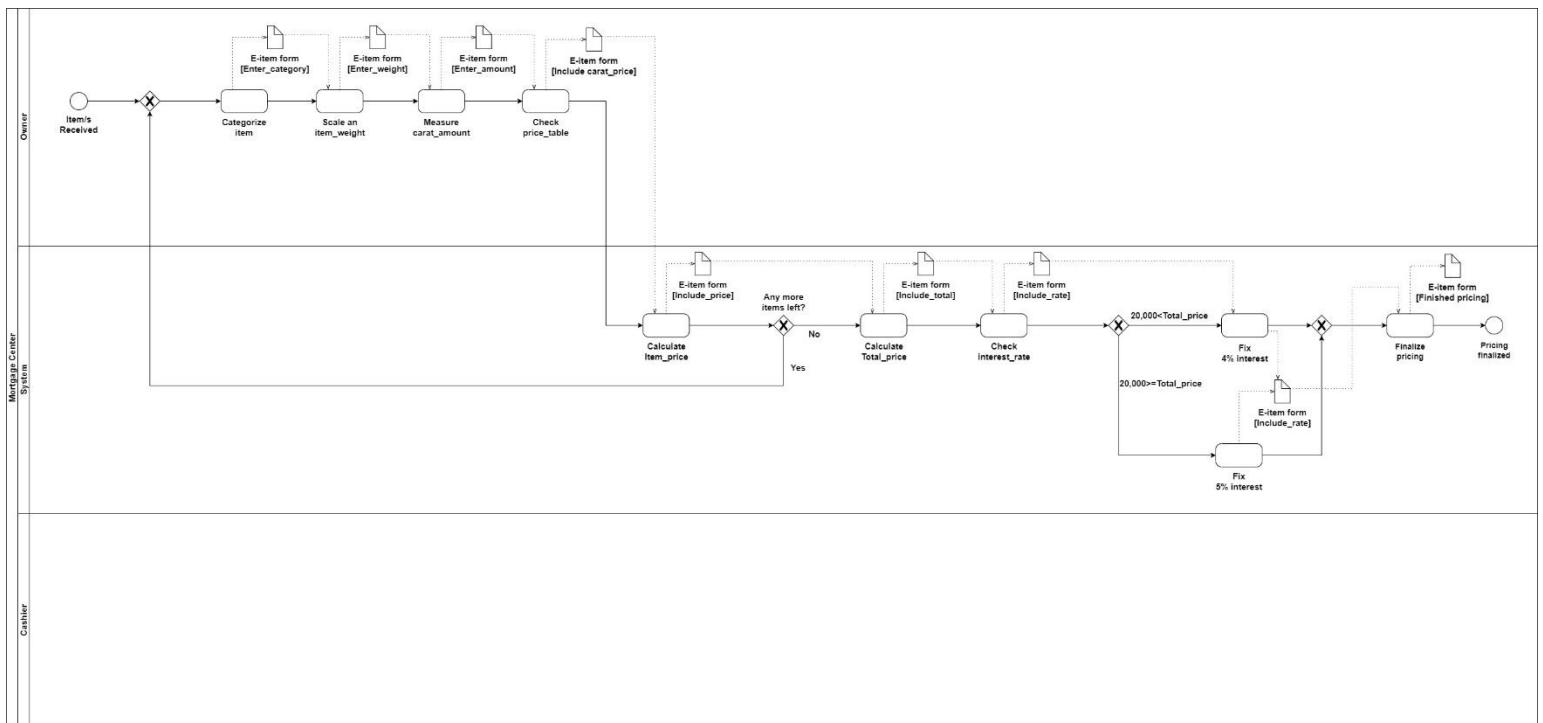
If the customer wants to continue the business, the cashier opens the customer details form and input customer details into the software. The software will save the customer details in the 'Customer details database' and will generate a bill using details inside the databases. Then the cashier takes the customer's e-signature using a light pen & a tab and sends the tab with the bill to the owner. Then the owner checks the bill and puts his e-signature and releases the money amount. At the end the customer receives the respective amount of money, and the e-bill to his/her email or if want, the printed bill. The bill will be saved in the 'Bill database'. When the customer does their re-payments in instalment way system can generate a new bill and update their databases.

So, the whole business will run with two human forces. The systematic approach will improve the quality of the business process and will attract customers. The paper wastage is getting lower by using soft copies. Also, this approach helps to do work smart, easily manage the database, get maximum protection for the data, and maximize accuracy of the process.

# To-be process model...



- ‘Pricing item/s’ to-be sub process.



## References...

- <https://nlearn.nsbm.ac.lk/login/index.php>
- <https://www.lucidchart.com/pages/bpmn-bpmn-2.0-tutorial>
- <https://bpmtips.com/bpmn-miwg-demonstration-2018-nearly-everything-you-always-wanted-to-know-about-data-objects-but-were-afraid-to-ask/>

**Thank You!**