

Interim Internship Report

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Executive Summary

This interim internship report records the work I have done thus far as an undergrad intern at OCBC from 17 May to 18 June 2020.

In the first five weeks of my attachment, my allocated tasks centered around the creation of Macros using Visual Basic Application (VBA) in Excel, to increase “Business As Usual” (BAU) efficiency. The Macros that I was tasked to create aims to fully automate some of the essential but mundane manual tasks that needs to be completed daily. I was required to self-learn VBA and to create the Macros. The creation of the Macros comes in mainly 2 phases – one of which is the development phase where a working code is written out and executed, the second phase is the user testing phase whereby the code will be tested out by the user at the designated daily scheduled timings, and feedbacks on how the Macro can be improved will be gathered from the user. Through the feedbacks, I proceeded on making the necessary amendments and ran through phase 2 once again until the user is satisfied with the Macros that I have created. During the process of creating the Macros, I have met and overcome many challenges. The challenges that I have faced through the process will be documented in this report.

Besides creating Macros, I was also given opportunities to gain familiarity with the business software (Qlikview) through independent hands-on learning, exploring the different features available in Qlikview and to complete some simple tasks using it. What I have learnt so far will be reinforced in the rest of this internship when I will be creating a dashboard using Qlikview.

Table of Contents

1. Introduction
2. Overview of the Organization
3. Work Experiences
 - 3.1 BC Macro
 - 3.1.1 Development Phase
 - 3.1.2 User-testing Phase and Further Enhancements
 - 3.2 BC Email Broadcast Automation
 - 3.2.1 Development Phase
 - 3.2.2 User-testing Phase and Further Enhancements
 - 3.3 Macro Enhancement for daily BC Source files Status
 - 3.3.1 Development Phase
 - 3.3.2 User-testing Phase and Further Enhancements
4. Things I learnt
5. References

1. Introduction

Oversea-Chinese Banking Corporations (OCBC) is in the banking industry, supporting individuals, companies, and communities by offering banking services such as loans and other financial services such as insurance.

Over the past years to present, the banking industry had and is undergoing a major shift, one driven by new competition from FinTechs, changing business models, mounting regulation and compliance pressures, and disruptive technologies. (Yong, 2018)

The emergence of FinTech has tremendously increased the competition faced by banks, forcing these traditional institutions to rethink the way they operate. As data breaches become more prevalent and privacy concerns intensify, regulatory and compliance requirements become more restrictive as a result. Furthermore, as technologies advance, the expectations of customers also become higher – customers yearn for a higher degree of personalization and convenience out of their banking experiences. (Hitachi Solutions, 2021)

To keep up with these challenges, the banking industry will need to come up with innovative solutions and adopt to digital transformation. By doing so will allow these traditional institutions to continue to thrive and flourish in the current landscape.

2. Overview of the Organization

Formed in 1932 after the merger of three local banks, the oldest which was founded in 1912, OCBC Bank is the longest established Singapore bank. Recognized for its financial strength and stability, OCBC Bank is now the second largest financial services group in Southeast Asia by assets and one of the world's most highly rated banks with an A1 credit rating from Moody's and AA- by both Fitch and S&P. It is also consistently ranked among the world's Top 50 Safest banks by global finance and has been named best managed bank in Singapore by the Asian banker. (OCBC Bank, 2021)

OCBC Bank and its subsidiaries offer a broad array of commercial banking, specialist financial and wealth management services, ranging from consumer, corporate, investment, private and transaction banking to treasury, insurance, asset management and stockbroking services. OCBC Bank's key markets are Singapore, Malaysia, Indonesia, and Greater China. It has more than 470 branches and representative offices in 19 countries and regions.

OCBC Bank's private banking services are provided by its wholly owned subsidiary Bank of Singapore which operates on a unique open-architecture product platform to source for the best-in-class products to meet its clients' goals. (OCBC Bank, 2021)

3. Work Experiences

3.1 BC Macro

Background: New data and files come in daily and hence, many new folders need to be created, files need to be copied, paste, and renamed at the new locations to keep things organized and ready to be used whenever needed. Though these steps may seem like simple tasks, but time is being wasted daily by having to do such basic chores which can easily be automated using a Macro.

The First Macro that I was tasked to write aims to:

- Increase BAU efficiency by removing daily duplicated steps of copying, pasting, creating, unzipping, and renaming many new folders and files for different entities
- Macro should allow flexibility for different BAU controllers to customize
- Macro should run automatically at 9.20AM and 2.20PM daily using task scheduler

3.1.1 Development Phase

During the development phase, given a list of directories (Source & Destinations), I wrote a Macro that:

- Creates folders according to the reporting date
- Unzips tar.gz files
- Copy, paste and rename text files according to the reporting date (Ensures **overwriting** at destination)
- Copy, paste and rename excel files according to the reporting date (Ensures **no overwriting** at destination)

Figure 1 shows the outline of the excel sheet that the Macro will run on, each column corresponds to a different task that the Macro does.

New directories can be added by controllers into the respective columns if they need to automate any tasks.

Today's Date	16/06/2021	Creation of Folders	Copy & Rename Files	Unzipping of files:
Previous reporting Date:	14/06/2021	9.20am	9.20am	9.20am
Reporting Date:	15/06/2021	Folders Creation:	Source path (Text file)	Destination path (Text file)
		PATH1\YEAR\MONTH\REPORTINGDATE	SOURCE_PATH1	DESTINATION_PATH1
		PATH2\YEAR\MONTH\REPORTINGDATE	SOURCE_PATH2	DESTINATION_PATH2
Different date formatting:		PATH3\YEAR\MONTH\REPORTINGDATE	SOURCE_PATH3	DESTINATION_PATH3
2021-Jun-14		PATH4\YEAR\MONTH\REPORTINGDATE
2021-Jun-15		...		
			Source path (Excel file)	Destination path (Text file)
06_June			SOURCE_PATH1	DESTINATION_PATH1
06_June			SOURCE_PATH2	DESTINATION_PATH2
			SOURCE_PATH3	DESTINATION_PATH3
2021		
2021				
			2.20pm	
20210614			Source path (Text file)	Destination path (Text file)
20210615			SOURCE_PATH1	DESTINATION_PATH1
			SOURCE_PATH2	DESTINATION_PATH2
			SOURCE_PATH3	DESTINATION_PATH3
		
			Source path (Excel file)	Destination path (Text file)
			SOURCE_PATH1	DESTINATION_PATH1
			SOURCE_PATH2	DESTINATION_PATH2
			SOURCE_PATH3	DESTINATION_PATH3
		

Figure 1

3.1.1 User-testing Phase and Further Enhancements

The user-testing phase is a very important phase as it is the phase where most problems or any inadequate areas will be identified and improved. For user-testing, together with my colleague, we ran the code every morning and afternoon manually for a few days to identify any problems that arise.

From the user testing, we identified a few challenges /areas of improvements:

1. Macro will run into error and stop when source file/ destination folder is missing from the actual directories
2. Difficult to keep track of the tasks that have already been completed by Macro

To solve these inadequacies, I added a function which will keep track of the “status” of the tasks. Using the function, a status column will appear each time the Macro is run as shown in the example (figure 2) below.

	Copy & Rename Files	
	9.20am	
Status	Source path (Text file)	Destination path (Text file)
Success	SOURCE_PATH1	DESTINATION_PATH1
Success	SOURCE_PATH2	DESTINATION_PATH2
Source file/ Destination folder does not exist	SOURCE_PATH3	DESTINATION_PATH3
Success

Figure 2

From this, users will be able to open the excel sheet to easily identify which tasks are unsuccessful and immediately attend to them.

3.1 BC Email Broadcast Automation

Background: There are many Qlikview (QV) Apps but several of them are critical and needs to be updated daily but sometimes issues may arise and the update of the Apps will be delayed until someone checks the App status from the App and solve the issue, causing further delay.

The Second and third Macro that I was tasked to write aims to:

- Increase productivity and efficiency by automatically checking the status of the Apps and sending Qlikview status email daily, allowing recipients of the email to be able to gain direct access to information and have a clearer understanding of the status of the critical Apps and solve it immediately should there be any delays with the Apps.
- Checks a drive and update the status of the storage of the drive
- Body of the email should include both bullet points above and be presented in a way such that is easy to understand for all recipients.
- The second Macro should run automatically at 9AM (send to everyone)
- The third Macro should run automatically at 11AM (send to internal team) and 2PM (send to internal team)

3.2.1 Development Phase

Under the development phase, given a list of critical Apps and using daily exported CSV file containing all the QV Apps and their relevant information, I wrote 2 Macros that:

- Check if the critical Apps are refreshed and
- Take a snippet of that information
- Ensure that the body of the email is well presented
- The second Macro should send out the status of **all** the critical Apps
- The third Macro should only send out the status of the **unrefreshed** critical Apps
- Send out the emails automatically

Figure 3 below shows the outline of my email from the development phase, which was initially sent to myself for testing.

Good morning teams,

Please find the Qlikview status for today. For more details, please refer here.

QVW	App Layer	QVW Time	QVW Size
Critical App 1	Layer1	25/05/2021	100MB
Critical App 2	Layer2	25/05/2021	203MB
Critical App 3	Layer3	25/05/2021	157MB
Critical App 4	Layer4	25/04/2021	140MB
Critical App 5	Layer5	25/05/2021	540MB
Critical App 6	Layer6	25/05/2021	980MB
Critical App 7	Layer7	25/05/2021	695MB
...			
...			

Best regards

Figure 3

3.2.2 User-testing Phase and Further Enhancements

After all the user testing, these all the identified problems /areas of improvements:

1. The snippet could not be seen by the recipients
2. Need to remove unnecessary columns
3. Need to add necessary columns
4. Subject of the email should be clear-cut
5. The overall aesthetics of email body could be better
6. On instances where **all** the Apps are already updated at 11AM, then the 2PM email should not be sent out again

From the feedbacks gathered, I further improved my Macro as shown in figures 4-6 below.

Good morning teams,

Please find the Qlikview Status for today.

Application	Status	Last Update Time	Remarks
Critical App 1	😊	25/05/2021	
Critical App 2	😊	25/05/2021	
Critical App 3	😊	25/05/2021	
Critical App 4	😞	24/04/2021	• will be refreshing at 10AM
Critical App 5	😊	25/05/2021	
Critical App 6	😊	25/05/2021	
Critical App 7	😊	25/05/2021	
...			
K Drive	😞	25/05/2021	• low on space

Best regards,

Figure 4 (9AM Macro)

Good morning teams,

The table below shows the App(s) that are yet to be updated

Application	Status	Last Update Time
Critical App 4	😞	24/04/2021

Best regards,

Figure 5 (11AM/2PM Macro)

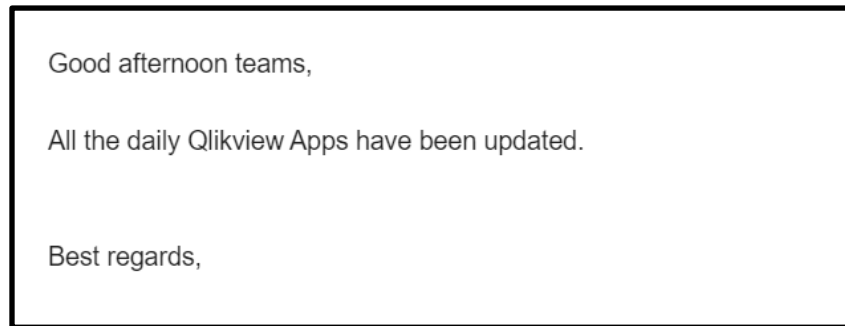


Figure 5 (11AM/2PM Macro)

3.3 Macro enhancement for daily BC Source files Status

The fourth macro that I wrote is similar to the email macro that I wrote, it aims to:

- Increase productivity and efficiency by automatically checking the status of the files/Apps and sending BC status email daily, allowing recipients of the email to be able to gain direct access to information (eg. Missing files, not yet updated files/Apps etc.)
- Body of the email should present the Apps/files status in a way that is easy to understand for all recipients.
- Macro should run automatically and send email out at 9AM and 2PM daily using task scheduler.

3.3.1 Development Phase

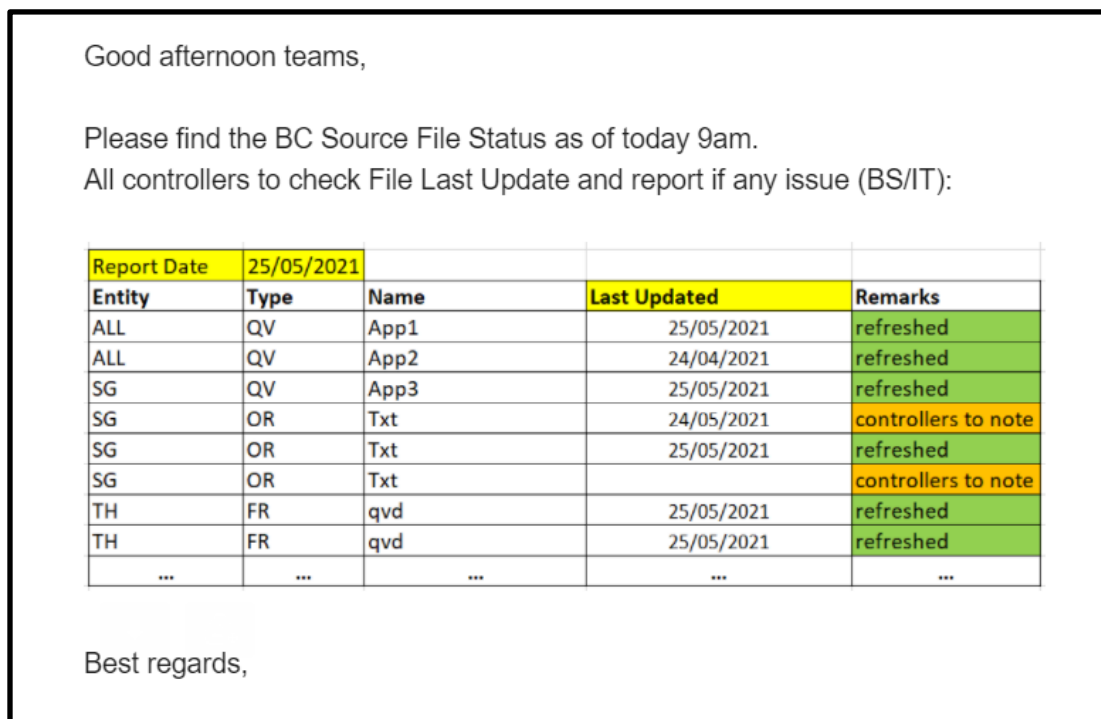


Figure 6 (9AM Macro)

3.3.2 User-testing Phase and Further Enhancements

Some challenges from user-testing:

- Different files might have different refreshing dates, will need to modify the code to account for that
- For the instance where all the Apps are refreshed at 9am (usually happen on Mondays), the email at 2pm should not be sent out again

4. Things that I learnt

- The user-testing phase is a very important phase as it is when unprecedented scenarios are being encountered and it is through this phase whereby problems are identified and fixed, before it is put to actual use
- It is important that the code offers flexibility for people to easily customize to use in the future for their own needs
- It is a good practice to look for ways to improve your code, things like looking for ways to improve your coding style can make your code run faster, which will greatly increase efficiency and productivity: For example, one great tip that I learnt is that turning off the screen updating feature in VBA has decreased the time my code takes to run, which saves time

References

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