

Project Title

Automating Compliance Review of Resignee IT Accounts

Project Lead and Members

- Mr. Daniel Tan
- Mr. Lawrence Cheng
- Ms. Chan Lidan
- Ms. Miao Yixin

Organisation(s) Involved

National University Health System

Healthcare Family Group(s) Involved in this Project

Healthcare Administration

Applicable Specialty or Discipline

Informatics Technology

Project Period

Start date: August 2022

Completed date: Not Available

Aim(s)

- Less than 5 min to run the automation tool and generate the results, which translates into >90% reduction in review time
- No installation of additional software required on staff's computers i.e. no extra subscription cost
- Minimal training for staff to use the tool proficiently; no thick instruction manuals
- Manual eyeballing no longer required during review, thus minimizing human errors and reducing manual work

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Conclusion

See poster appended/ below

Project Category

Technology

Digital Health; Cybersecurity; System Security; Data Security

Keywords

Information Technology Security, Compliance

Name and Email of Project Contact Person(s)

Name: Mr Daniel Tan

Email: daniel_kw_tan@nuhs.edu.sg

Automating Compliance Review of Resignee IT Accounts

Daniel Tan • Lawrence Cheng • Chan Lidan • Miao Yixin



The Challenge

- One common recurring audit finding is non-timely detection and disabling of user accounts in the IT systems after the resigning staff's last day.
- Such delays pose an IT security risk as these accounts could be abused to perform malicious activities, resulting in patient data breaches and disruption of healthcare services.
- Currently, reviewing and disabling of user accounts are manually intensive which are prone to oversight and time-consuming.

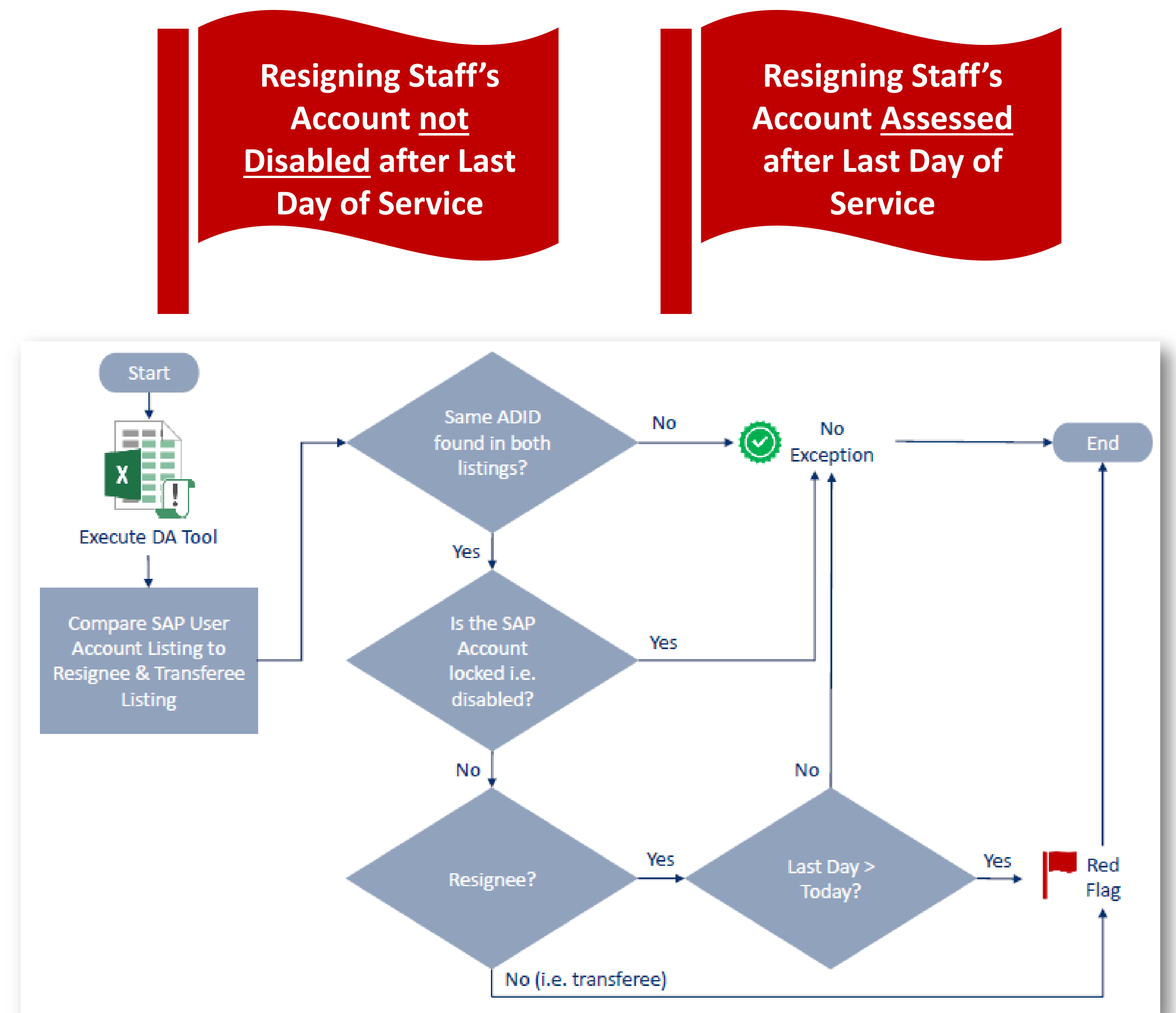
The Solution

Resignee Accounts		Transferee Accounts	
Business Unit Name	# of Accts not disabled	Business Unit Name	# of Accts not disabled
Alexandra Hospital	1	Alexandra Hospital	1
Jurong Community Hospital	1	Jurong Community Hospital	1
Jurong Medical Centre	1	Jurong Medical Centre	1
Ng Teng Fong General Hospital	1	Ng Teng Fong General Hospital	1
National University Hospital	1	National University Hospital	1
National University Polyclinics	1	National University Polyclinics	1
National University Health System	1	National University Health System	1
TOTAL	7	TOTAL	7

- In Aug 2022, NUHS Group ERM & Compliance team began developing a tool with VBA scripts to automate the review of resigning staff's accounts that are not disabled after their last day of service.
- SAP system is chosen for the pilot.
- Potential red flags detected are automatically displayed on a dashboard in Excel (see diagram above) to facilitate reviewer's follow-up with the respective institutions.
- SAP system users transferred within NUHS are also highlighted to the reviewer to further assess if the transferees' new roles still require access to the system.

The Results

- Potential IT security red flags detected through the automated review tool powered by VBA scripts (see flowchart below):



Ease of adoption; Improve review effectiveness

- Less than 5 min to run the automation tool and generate the results, which translates into > 90% reduction in review time
- No installation of additional software required on staff's computers i.e. no extra subscription cost
- Minimal training for staff to use the tool proficiently; no thick instruction manuals
- Manual eyeballing no longer required during review, thus minimizing human errors and reducing manual work

The Scale-Up

The automation solution is scaled and deployed:

- Horizontally across various institutions of NUHS
- Vertically across various NUHS-managed IT systems

System	NUHS Corp Office	National University Hospital	Ng Teng Fong General Hospital	Jurong Community Hospital	Jurong Medical Centre	Alexandra Hospital	National University Polyclinics
SAP	✓	✓	✓	✓	✓	✓	✓
eIMR	NA	✓	NA	NA	NA	✓	NA
iPharm	NA	✓	✓	✓	✓	✓	✓

✓ - system in use "NA" - system not in use