Individual Reflection

Our team was recruited as an IT Software Consultants and Developers to implement an application for an organisation with domain-specific requirements. The project was divided into two sections: The Design Proposal Report and the Coding Output. Our team members were Marzio, Sebastian Keir and myself.

As soon as the group was formed, we started communicating with each other through WhatsApp. And, since we were from different time zones, we decided to meet at a specific time to be equitable to each other and to discuss the project's tasks and progress on a regular basis. We shared our expertise and technical skills with each other and completed the contract agreement during our first meeting on Google Meet. Furthermore, we established three key rules for our team to follow: first, each member will be assigned to a specific task; second, each team member will be given the opportunity to host a meeting; and third, the deadline for submitting the draft for peer review should be adhered to as much as possible. Nonetheless, since we are all professionals, we were lenient with the third rule.

Subsequently, following our first meeting, each team member was given an individual task to analyse the various proposed domains from the assignment, and we were able to agree on the Dutch Police Internet Forensics (Government of the Netherlands, n.d.) as our chosen domain for our assignment. After the domain was chosen, each of us had our own part to complete for the Design Proposal Report, and my assignment was to write the background of the Netherlands' National Cyber Security Centre (NCSC) as well as a list of domain-specific requirements. As a result, I focused on the operating systems, technologies, and additional requirements currently used by the Netherlands' NCSC Internet forensics department for domain-specific requirements. A screenshot of my contribution to the Design Proposal Report is shown below.

Background

The National Cyber Security Centre (NCSC) is the Netherlands' consolidated data hub and cyber security knowledge centre. NCSC's objective is to strengthen Dutch society's digital resilience, resulting in a better, broader, and stable digital world. The NCSC provides expert insight into cyber-security innovations, threats, and risks (Government of the Netherlands, N.D.).

Domain-Specific Requirements

Operating systems
- Use of Linux desktops by specialist police unit, since its inception in 2003.
- Upgraded to 2200 Ubuntu Linux workstations.

Technologies
- Use of cloud solutions limits management and development departments as data increases.
- Uses only free and open-source solutions based on open standards and developed publicly.
- Open-source software and open standards identified as a strategic choice and future-proofing.
- Mandatory availability of source code on the internet to be audited.

Others
- GDPR compliance to ensure data privacy and security.
- Monolithic approach due to scalability concerns.

Figure 1 - Individual Contribution for Design Proposal Report

After the submission of the Design Proposal Report, we started working on the implementation of our proposed system which would allow authorised employees to search, amend and create entries for the suspect sources database. Similarly, the implementation phase was divided into various sections, with each team member being assigned to one of the tasks after completing the previous task. As a result, we agreed to use the Trello platform to track our task's implementation progress. Our assigned task was generated as a ticket, and were constantly updated as the task progressed. Hence, writing the blueprint of the system's prompt messages, writing the system's Terms and Conditions, including its Privacy Policy, and updating the README file to explain the applied solution and guidance on how to execute the code were the various tickets allocated to me for the second part of the project. The screenshots below are my contribution to the Coding Output.

Please select your user type:

1. Administrator
2. Specialist
3. External Authority

Selected Option:

Administrator Login

Please enter your user name:
Please enter your password:

false: error msg: Access Denied! Your user name/password do not match.

if trial > 3 error msg: Your account has been locked. Please contact the administrator.

true: Access Granted! You have successfully logged in.

(Admin Main Menu)
Please select:
1. Create new user
2. Modify user
3. Deactivate user
4. Unlock user
5. Exit

Create New User

Please insert first name:
error msg: Entered first name is invalid. Please check and try again.

Please insert last name:
error msg: Entered last name is invalid. Please check and try again.

Please insert email address:
error msg: Entered email address is invalid. Please check and try again.

Please insert date of birth:
error msg: Entered date of birth is invalid. Please check and try again.

Please select the user role:
1. Administrator
2. Specialist
3. External Authority
error msg: Entered user role is invalid. Please check and try again.

User has successfully been created!

Do you want to create another user? y/n

yes: >>Loop Create New User Process <<

no:
(Admin Main Menu)
Please select:
1. Create new user
2. Modify user
3. Deactivate user
4. Unlock user
5. Exit

Modify User

Modify user by:
1. User ID
2. Email Address

Selected option:

>>By user id <<
Please insert the ID of the user you want to modify:

true:
What do you want to modify?

1. First Name
false: Invalid first name. Please check and try again.

2. Last Name
false: Invalid last name. Please check and try again.

3. Email Address
false: Invalid Email Address. Please check and try again.
false: Email Address already exist. Please check and try again.

4. Date of Birth
false: Invalid Date of Birth. Please check and try again.

5. Status
false: Invalid Status. Status should be active (1), deactivated (2) or locked (3). Please check and try again.

6. User role
false: Invalid User role. User role should be Administrator (1), Specialist (2) or External Authority (3). Please check and try again.

true: Do you want to make more changes? y/n
yes: >>Loop Modify User <<
no: User detail(s) successfully modified!

false: error msg: Entered user id is invalid. Please check and try again.

>>By email address <<
Please insert the email address of the user you want to modify:

true:
What do you want to modify?

1. First Name
false: Invalid first name. Please check and try again.

2. Last Name
false: Invalid last name. Please check and try again.

3. Email Address
false: Invalid Email Address. Please check and try again.
false: Email Address already exist. Please check and try again.

4. Date of Birth
false: Invalid Date of Birth. Please check and try again.

5. Status
false: Invalid Status. Status should be active (1), deactivated (2) or locked (3). Please check and try again.

6. User role
false: Invalid User role. User role should be Administrator (1), Specialist (2) or External Authority (3). Please check and try again.

true: Do you want to make more changes? y/n
yes: >>Loop Modify User <<
no: User detail(s) successfully modified!

false: error msg: Entered email address is invalid. Please check and try again.

Deactivate User

Deactivate user by:
1. User ID
2. Email Address

>>user id<<
Please insert the ID of the user you want to deactivate:

true: Are you sure to deactivate user? y/n

true: User has successfully been unlocked!

false: error msg: Entered email address is invalid. Please check and try again.

Specialist Login

Please enter your user name:
Please enter your password:

false: error msg: Access Denied! Your user name/password do not match.

if trial > 3 error msg: Your account has been locked. Please contact the administrator.

true: Access Granted! You have successfully logged in.

(Specialist Main Menu)
Please select:
1. Create source
2. Modify source
3. View source
4. Exit

Create Source

Please insert source name:
error msg: Entered source name is invalid. Please check and try again.

Please insert source description:

Please insert URL:
error msg: Entered URL is invalid. Please check and try again.

Please indicate the threat level using the scale 0 (lowest) to 5 (highest):
error msg: Entered threat level is invalid. Please check and try again.

Source has successfully been created!

Notify External Authority: The source "source_name" has been modified! An email has been sent with the details of the suspect source.

Do you want to create another source? y/n

yes: >>Loop Create Source Process <<

no:
(Specialist Main Menu)
Please select your investigation:
1. Create source
2. Modify source
3. View source
4. Exit

External Authority Login

Please enter your user name:
Please enter your password:

true: Access Granted! You have successfully logged in.

(External Authority Main Menu)
Please select:
1. View source
2. Exit

false: error msg: Access Denied! Your user name/password do not match.

if trial > 3 error msg: Your account has been locked. Please contact the administrator.

View Source

Please insert the source Id you want to modify:

true: >>Display details from database<<

false: error msg: Entered source id is invalid. Please check and try again.
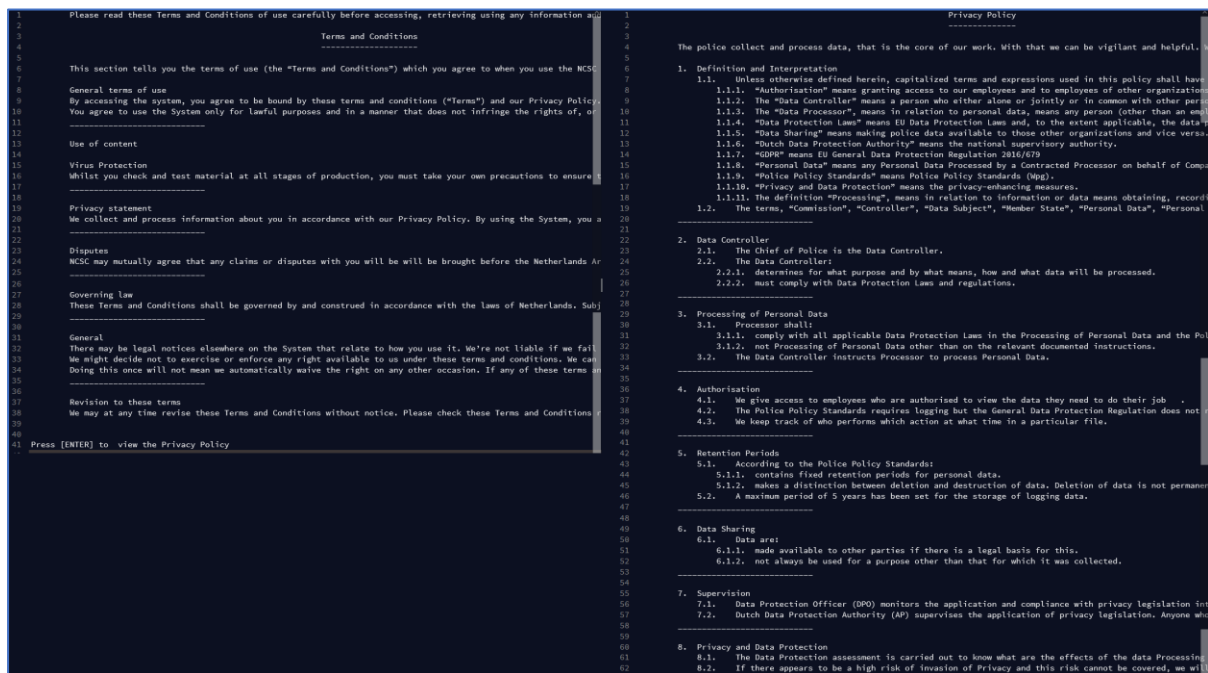
Figure 2 - Prompt Messages of The System Blueprint

Figure 3 - Terms and Conditions and Privacy Policy of the system

Figure 4 –Part of the system's README file

Now I would like to highlight our team's strengths of being extremely understandable, well-organized and respectful of each other's personal and professional responsibilities. Additionally, each individual's commitment to the project's success could be seen in the fact that we accomplished our assigned task on time. However, about halfway through the group assignment, we learned of Keir's decision to drop out, and we had to re-distribute the tasks. On the other hand, as previously mentioned, we all had the opportunity to host a meeting, which improved my leadership abilities. Likewise, by using the Trello platform, we were able to keep track of the progress of the project and ensure that each team member was aligned with the project's objectives, that we initially set. When the Design Proposal Report feedback

claimed that several sections were misplaced in the report, I understood the significance of understanding report structure, and I would state that this was the only flaw of our team.

Consequently, for the README file of the Coding Output part, we ensured that the same error did not occur again by drafting all the sections which would need to be mentioned in the file and posted it on the Trello platform to closely supervise the structure. Eventually, for future team development projects, I will certainly use the same organised approach, which will help me and other team members to better monitor and understand the progress of the project. Furthermore, this project has assisted me in fully comprehending the basic principles of Secure Software Development methodologies, such as analysis, program design, software construction and testing in the software development. If ever I am given a project like this to develop in my career, I would be more secure in being an effective member of the development team rather than confining myself to a particular role. (Example Reflective Essay using Rolfe Reflective Model, 2021).

References

Sharma, A. and Bawa, R., 2020. Identification and integration of security activities for secure agile development. International Journal of Information Technology,.

UKEssays.com. 2021. Example Reflective Essay using Rolfe Reflective Model. [online] Available at: <https://www.ukessays.com/essays/nursing/rolfe-reflective-model.php>.