Snapshot Week 8 of Group AttackFlow1

Building a dataset of real-world cyber-attacks with Attack Flow

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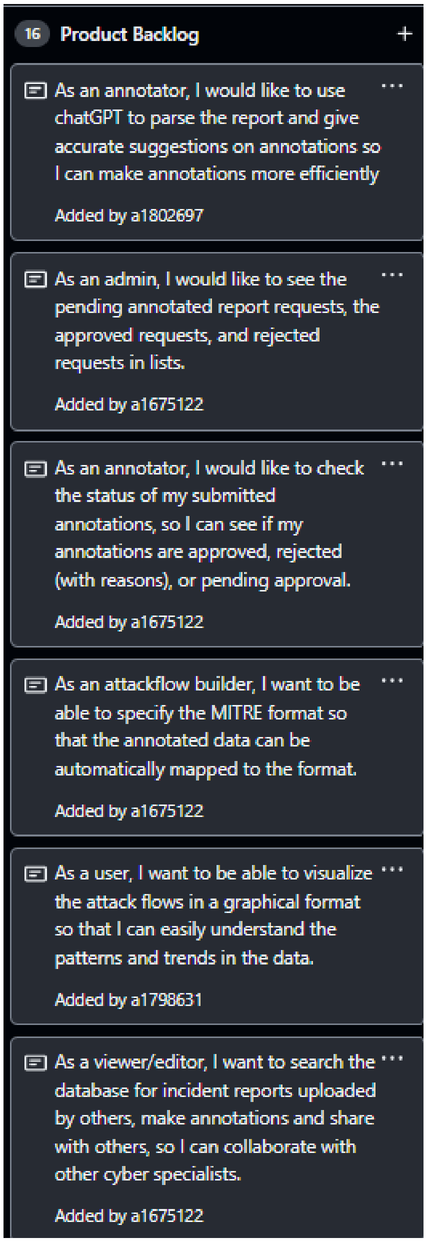
Product Backlog



16 Product Backlog

As an annotator, I would like to use chatGPT to parse the report and give accurate suggestions on annotations so I can make annotations more efficiently

Added by a1802697

As an admin, I would like to see the pending annotated report requests, the approved requests, and rejected requests in lists.

Added by a1675122

As an annotator, I would like to check the status of my submitted annotations, so I can see if my annotations are approved, rejected (with reasons), or pending approval.

Added by a1675122

As an attackflow builder, I want to be able to specify the MITRE format so that the annotated data can be automatically mapped to the format.

Added by a1675122

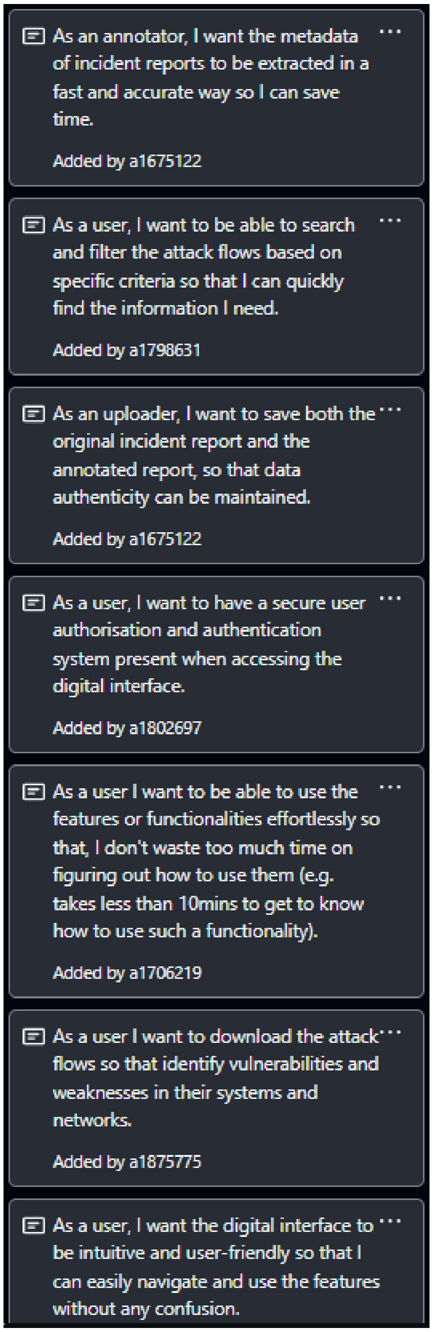
As a user, I want to be able to visualize the attack flows in a graphical format so that I can easily understand the patterns and trends in the data.

Added by a1798631

As a viewer/editor, I want to search the database for incident reports uploaded by others, make annotations and share with others, so I can collaborate with other cyber specialists.

Added by a1675122

Figure 1: Product Backlog (Sprint 4) 1 of 3



As an annotator, I want the metadata of incident reports to be extracted in a fast and accurate way so I can save time.

Added by a1675122

As a user, I want to be able to search and filter the attack flows based on specific criteria so that I can quickly find the information I need.

Added by a1798631

As an uploader, I want to save both the original incident report and the annotated report, so that data authenticity can be maintained.

Added by a1675122

As a user, I want to have a secure user authorisation and authentication system present when accessing the digital interface.

Added by a1802697

As a user I want to be able to use the features or functionalities effortlessly so that, I don't waste too much time on figuring out how to use them (e.g. takes less than 10mins to get to know how to use such a functionality).

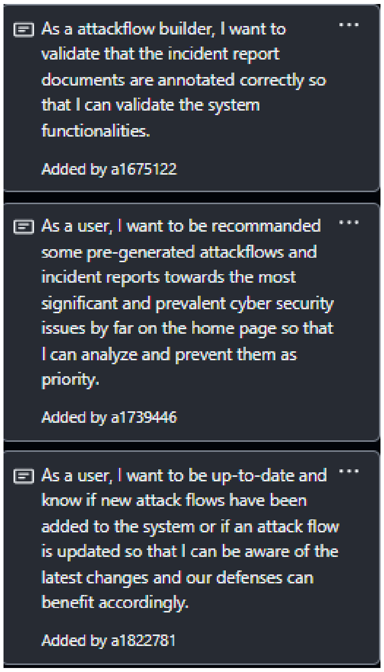
Added by a1706219

As a user I want to download the attack flows so that identify vulnerabilities and weaknesses in their systems and networks.

Added by a1875775

As a user, I want the digital interface to be intuitive and user-friendly so that I can easily navigate and use the features without any confusion.

Figure 2: Product Backlog (Sprint 4) 2 of 3



As a attackflow builder, I want to validate that the incident report documents are annotated correctly so that I can validate the system functionalities.

Added by a1675122

As a user, I want to be recommanded some pre-generated attackflows and incident reports towards the most significant and prevalent cyber security issues by far on the home page so that I can analyze and prevent them as priority.

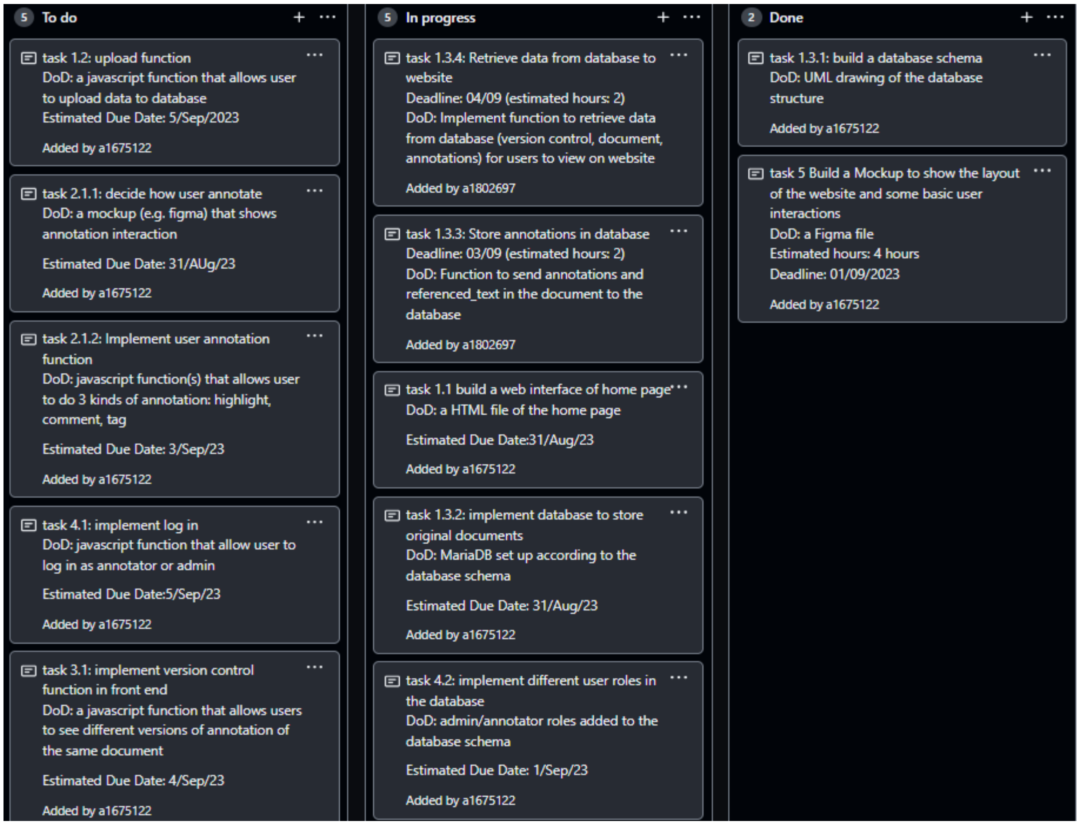
Added by a1739446

As a user, I want to be up-to-date and know if new attack flows have been added to the system or if an attack flow is updated so that I can be aware of the latest changes and our defenses can benefit accordingly.

Added by a1822781

Figure 3: Product Backlog (Sprint 4) 3 of 3

Task Board



task 1.2: upload function
DoD: a javascript function that allows user to upload data to database
Estimated Due Date: 5/Sep/2023

Added by a1675122

task 2.1.1: decide how user annotate
DoD: a mockup (e.g. figma) that shows annotation interaction

Estimated Due Date: 31/AUg/23

Added by a1675122

task 2.1.2: Implement user annotation function
DoD: javascript function(s) that allows user to do 3 kinds of annotation: highlight, comment, tag

Estimated Due Date: 3/Sep/23

Added by a1675122

task 4.1: implement log in
DoD: javascript function that allow user to log in as annotator or admin

Estimated Due Date:5/Sep/23

Added by a1675122

task 3.1: implement version control function in front end
DoD: a javascript function that allows users to see different versions of annotation of the same document

Estimated Due Date: 4/Sep/23

Added by a1675122

task 1.3.4: Retrieve data from database to website
Deadline: 04/09 (estimated hours: 2)
DoD: Implement function to retrieve data from database (version control, document, annotations) for users to view on website

Added by a1802697

task 1.3.3: Store annotations in database
Deadline: 03/09 (estimated hours: 2)
DoD: Function to send annotations and referenced_text in the document to the database

Added by a1802697

task 1.1 build a web interface of home page
DoD: a HTML file of the home page

Estimated Due Date:31/Aug/23

Added by a1675122

task 1.3.2: implement database to store original documents
DoD: MariaDB set up according to the database schema

Estimated Due Date: 31/Aug/23

Added by a1675122

task 4.2: implement different user roles in the database
DoD: admin/annotator roles added to the database schema

Estimated Due Date: 1/Sep/23

Added by a1675122

task 1.3.1: build a database schema
DoD: UML drawing of the database structure

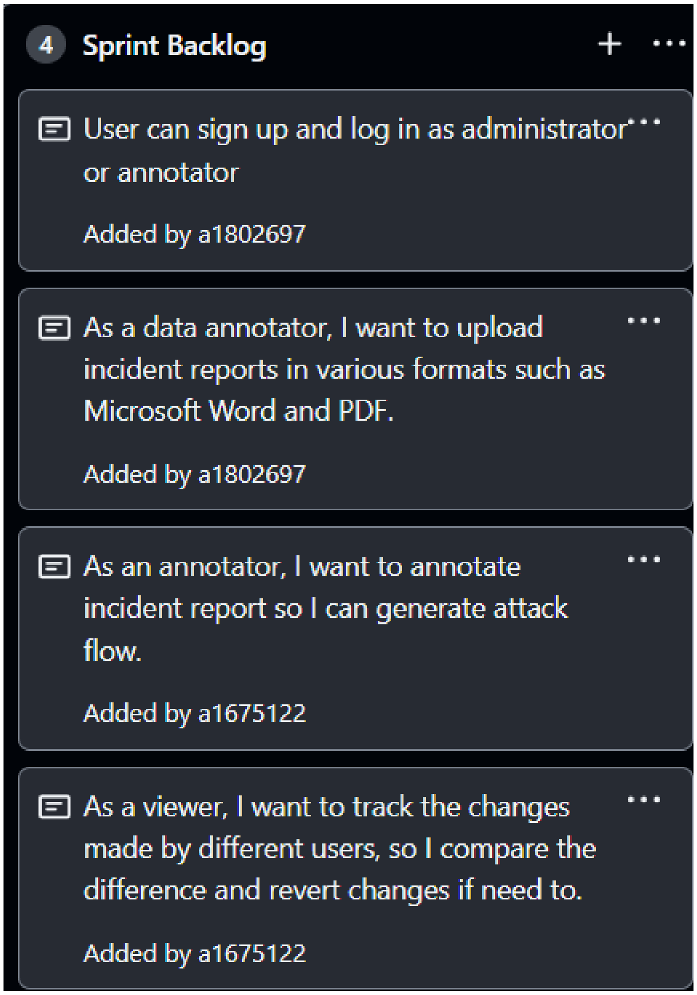
Added by a1675122

task 5 Build a Mockup to show the layout of the website and some basic user interactions
DoD: a Figma file
Estimated hours: 4 hours
Deadline: 01/09/2023

Added by a1675122

Figure 4: Task board (Sprint 4)

Sprint Backlog



4 Sprint Backlog

User can sign up and log in as administrator or annotator

Added by a1802697

As a data annotator, I want to upload incident reports in various formats such as Microsoft Word and PDF.

Added by a1802697

As an annotator, I want to annotate incident report so I can generate attack flow.

Added by a1675122

As a viewer, I want to track the changes made by different users, so I compare the difference and revert changes if need to.

Added by a1675122

Figure 5: Sprint Backlog (Sprint 4)

User Stories

We have identified that some user stories like upload and annotate selected from the product backlog for sprint 2 and 3 remain incomplete due to underestimating the time complexity needed to complete the tasks. Therefore, we have selected the user stories document upload and annotate, as well as user sign ups and logins for this sprint. From this, we have determined the following tasks for sprint 3 and 4:

- “As a data annotator, I want to upload an incident report and save it so that I can further edit the file.”

  – Related tasks:
  task 1.2: upload function
  task 1.3.2: implement database to store original documents

- “As an annotator, I want to annotate incident report so I can generate attack flow.”

  – Related tasks:
  task 2.1.1: decide how user annotate
  task 2.1.2: implement user annotation function
  task 2.1.3: integrate ChatGPT to parse report and give accurate annotation suggestions

- “User can sign up and log in as administrator or annotator

  – Related tasks:
  task 4.1: implement sign up
  task 4.2: implement log in
  task 4.3: implement different user roles in the database

Definition of Done

The individual DoD of each task can be seen on the screenshot of the task board.
In summary, the goals are:

- Testing the integrated backend functions works as we expected.
- Code is well-documented and adheres to our coding standards.
- Explain and ensure that all the scrum members understand the specifics of the tasks and how to construct the implementation.

Summary of Changes

The last snapshot focused on the upload and annotate functions also there is an emphasis on the functional requirements of user sign ups and logins. The following aspects will be carried over to this snapshot:

- **Added new user stories**- During our meeting with the tutor we discovered new user stories. The first user story involves enabling annotators to check the status of their submitted annotation which can be either approved, rejected (with reasons) or pending approval. We also discovered a second user story regarding admins being able to see the pending annotated report requests, the approved requests, and rejected requests in lists. Lastly, we have clarified that ChatGPT will be integrated to parse the report and give suggestions to accurate annotations for the annotator to select. Thus, we have added a user story to reflect this requirement.

- **Refined our user stories to better align with the tutor's requirements.** We have updated our login user story to include both user logins and sign ups only for administrator and annotator after determining that end users from the general public do not need to make their own account to interact with the web application.

- **We have simplified our user story for uploading reports from the previous snapshot**. After discussions with our tutor, we determined that the functionality of saving incomplete annotated reports pre-submission for further edits was unnecessary. Therefore, we have updated our upload user story to exclude this functionality and enabled users to only upload, annotate and submit their reports without saving incomplete annotations during the annotation process.

- **This snapshot emphasises the major role of ChatGPT in parsing the report and providing accurate annotation suggestions.** We have integrated ChatGPT in our web application to give standard responses. Our next steps involve learning the mechanisms that enable ChatGPT to deliver consistent and accurate annotation suggestions including technique IDs and associated tags based on our inputs. Other third-party annotator software has been looked at but integration has been unsuccessful. The search for a compatible annotator will continue without ruling out the implementation of ChatGPT.

Please note, as there was only one day between the submission of snapshot 3 and this snapshot, the differences have been minimal because snapshot 3 has included all works up to and including the day of submission.