Report Group-33 Sprint-1

Members:
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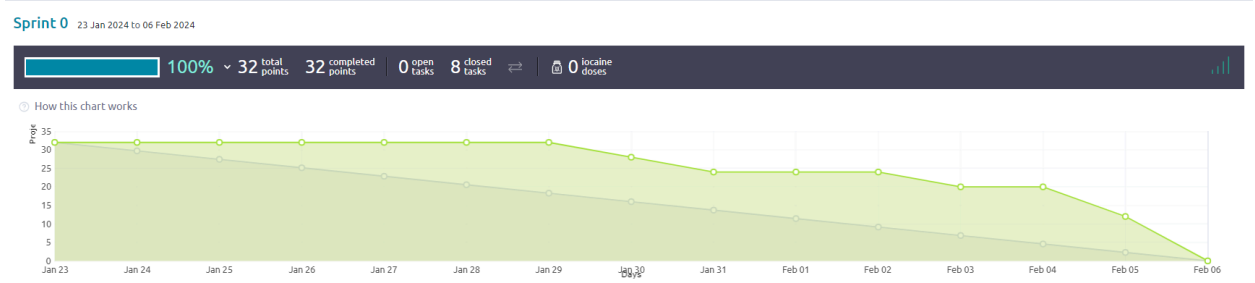
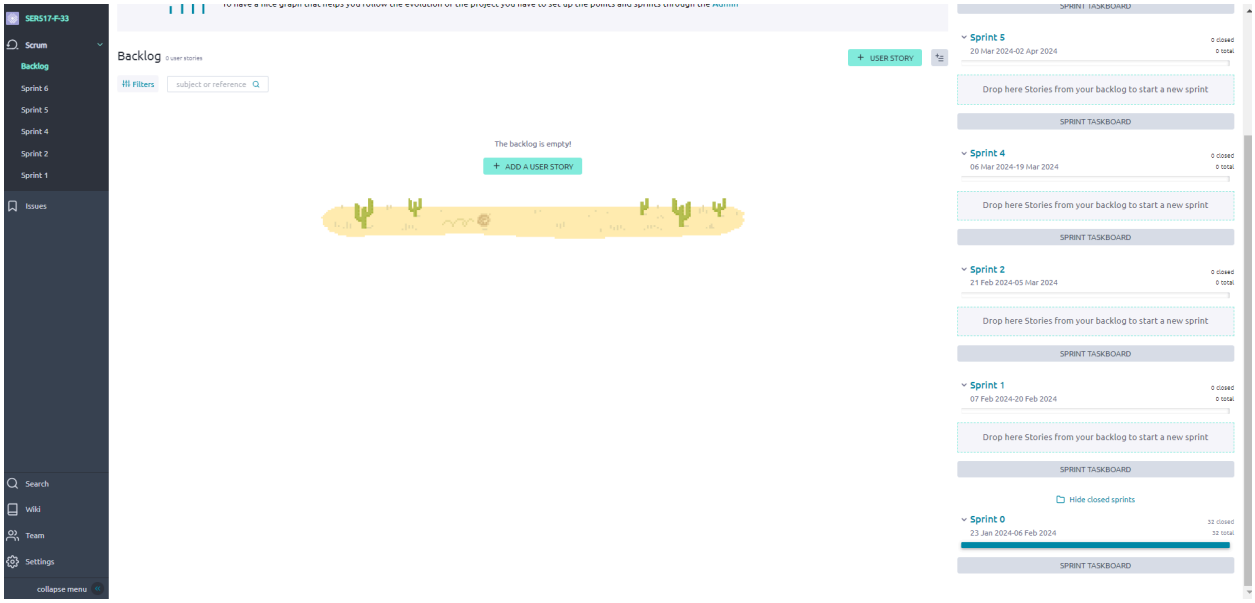
1. **Taiga**
   Link: https://tree.taiga.io/project/araviraj8-ser517-f-33/backlog

   Burndown for Sprint 0:
   Duration of Sprint 0: 23rd Jan 2024 - 6th Feb 2024



   Backlog after sprint 0:



   Sprint Backlog:
   For our sprint 0, we just had a single user story as instructed by our Sponsor, as he wanted us to take our time and develop an understanding of AI/ML solutions in 5G and

6G infrastructure and networks. I understand that we have underestimated the team's velocity, but from the upcoming sprint, we will aim to increase the team's velocity.

User Stories Created for Sprint 0:

#3 - Literature Review 1: As a team member, I want the literature review to be well-organized with precise categorization of studies so that I can quickly locate information relevant to my task.

#4 - Literature Review 2: As a decision-maker, I want the literature review to highlight critical theories and frameworks relevant to our project so that we can make informed strategic decisions.

#5 - Literature Review 3: As a collaborator, I want the literature review to facilitate interdisciplinary connections and highlight cross-cutting themes that can enhance the project's impact.

#6 - Literature Review 4: As a team member, I want the literature review to include a discussion on the strengths and limitations of existing research so that we can identify areas where our project can make a unique contribution.

Tasks created for User Stories in Sprint 1:

Tasks for User Story: #3:
#7: Go Through the assigned paper
#8: Find 2 related papers and read them

Tasks for User Story: #4:
#9: Find 3 related papers on different models explored
#12: understand the assigned research paper

Tasks for User Story: #5:
#11: Go through the assigned paper
#14: Get 2 additional reference papers

Tasks for User Story: #6:
#10: Review the assigned research paper
#13: Find a related research paper on a similar topic

Good unit test:
We had our second sponsor meeting with our sponsor, Dr. Abdallah Moubayed. We shared our insights on different reference research papers that we understood as individuals and as a team.

2. **Google Organized Project Plan**
   Google Drive Link:
   https://drive.google.com/drive/folders/17fXt0y-jq5i_r6ynpcHEslSKF3EHksBE

   Youtube Video Link : https://youtu.be/x_nC4-AGr7M

   Meeting-1: 25 January, 2024
   In our meeting, we crafted specific user stories for each team member to tackle. Each member now has explicit user stories to guide their work effectively.

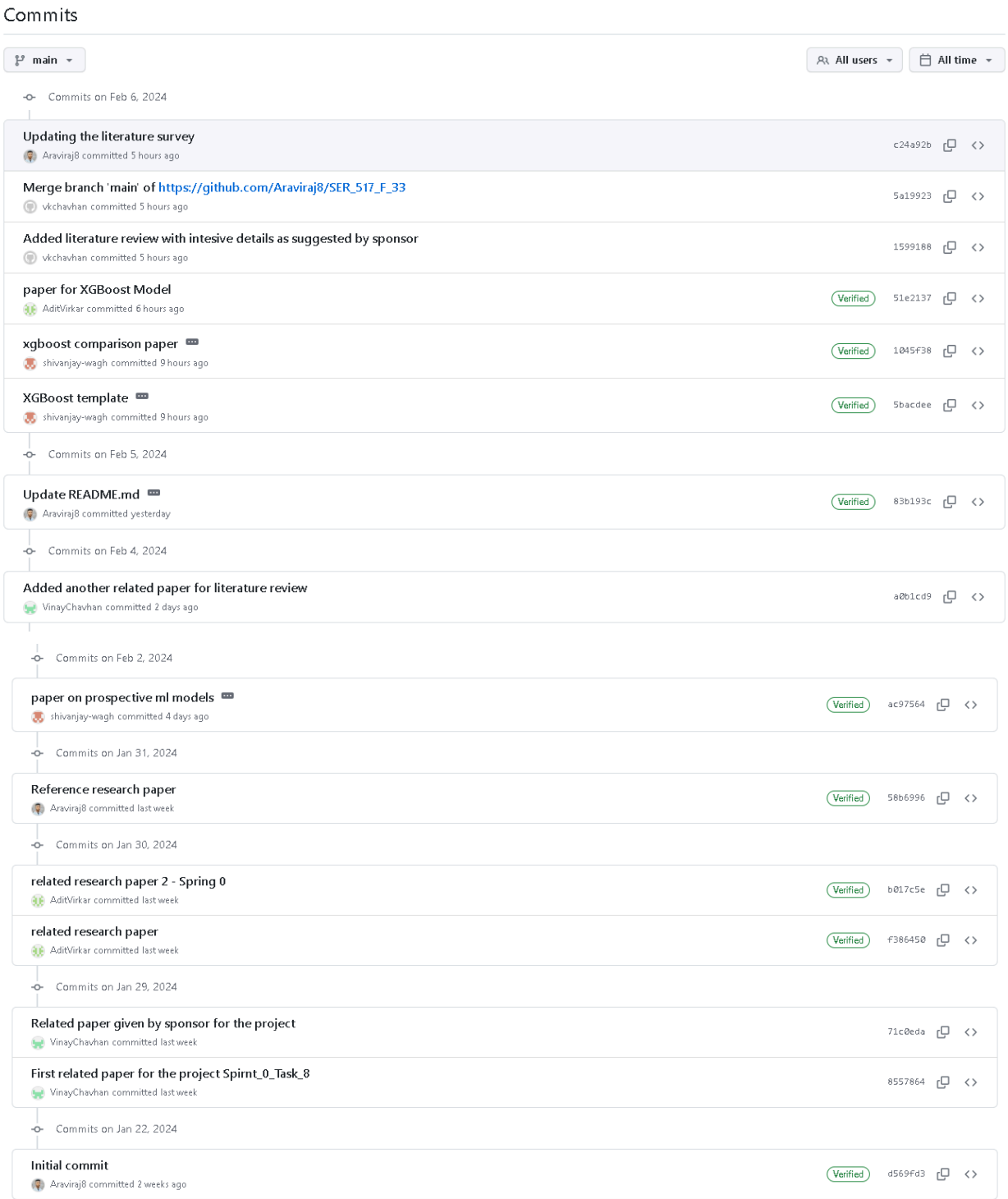
   Meeting 2: 28 January, 2024
   In the meeting, each team member was assigned specific tasks for the user stories they'll work on. This helps everyone know what they're responsible for and keeps the project organized.

   Meeting-3: 3rd February 2024
   We finished discussing the research paper the project sponsor gave us. Based on that discussion, we're ready to proceed with our next steps.

   Meeting-4: 5th February 2024
   Reviewed and talked about related research papers. The task of discussing additional research papers was completed in the meeting.

3. **Github**
   Link: https://github.com/Araviraj8/SER_517_F_33

GitHub commits for Sprint 0:



4. **Sponsor Meeting**
   Sponsor Meeting 1:
   Date: Jan 23, Tuesday, 1:30 pm
   - The sponsor assigned us a research paper titled '5G-NIDD: A Comprehensive Network Intrusion Detection Dataset Generated over 5G Wireless Network'. Gave us an introduction to the problem statement, explained to us the dataset, how it was generated, and the significance of it. We were told to research new ML models. The next meeting task was to do a literature review, get an idea about the project and the paper, etc. The general direction was given towards improving the models explored in the paper and making an analysis.

   Sponsor Meeting 2:
   Date: Feb 6, Tuesday, 1:30 pm
   - submitted our literature review. Took feedback on it. We talked about the XGBoost model, which is generally considered a superior model to RF and ANN, both of which were explored in the original paper. We propose using XGBoost to improve the model performance on multiple parameters like accuracy, inference time, training time, etc. We also talked about adversarial machine learning and federated learning. FL is a distributed way to deploy the intrusion detection model. We also discussed noise attacks and poisoning attacks.

5. **Plan, Retro, Review, Sprint meeting**

- **Sprint Plan** :
  - ★ **Goals and Objectives**: The goal of Sprint 1 was to complete the literature review.

    User Stories: The user stories are as follows:

    - **Literature Review 1** (Assignee: Vinay Chavhan) As a team member, I want the literature review to be well-organized with precise categorization of studies so that I can quickly locate information relevant to my task.

    - **Literature Review 2** (Assignee: Shivanjay Wagh) As a decision-maker, I want the literature review to highlight critical theories and frameworks relevant to our project so that we can make informed strategic decisions.

    - **Literature Review 3** (Assignee: Adit Virkar) As a collaborator, I want the literature review to facilitate interdisciplinary connections and highlight cross-cutting themes that can enhance the project's impact.

    - **Literature Review 4** (Assignee: Arnav Raviraj) As a team member, I want the literature review to include a discussion on the strengths and limitations of existing research so that we can identify areas where our project can make a unique contribution.

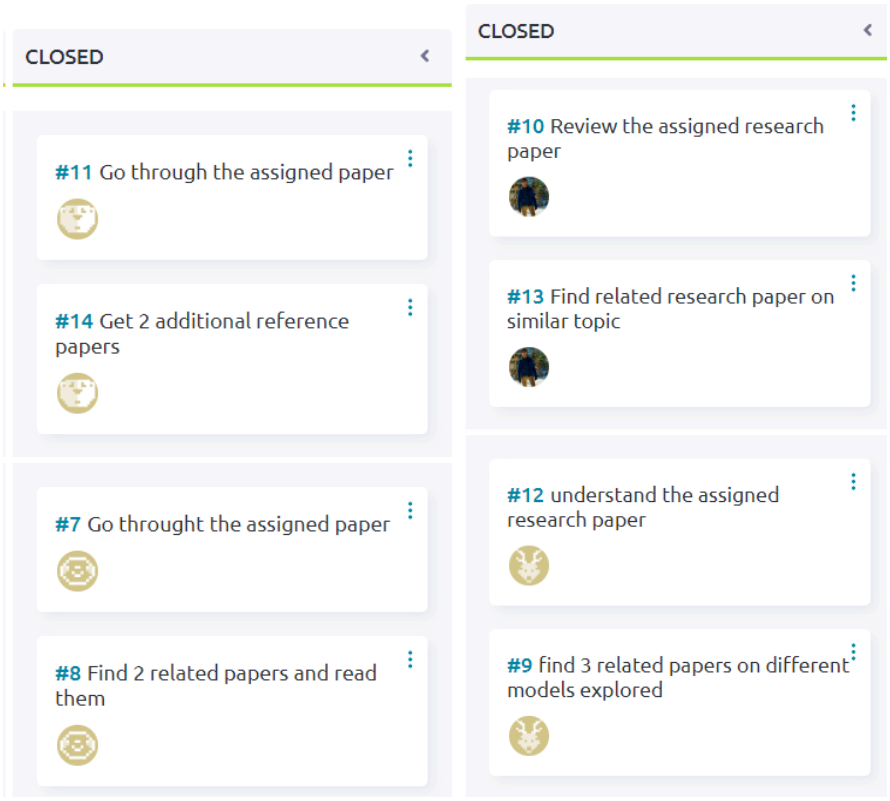
★ **Priorities**: Team members worked on the literature review with the same story points 8.
★ **Sprint Backlog**: There were two types of tasks for each user story. One was to read the paper given by the sponsor, and the other job was to find two other related research papers.
★ **Resource Allocation**: Each team member was assigned an equal weightage of story points.

- **Sprint Review:**
  ★ **What do you think is the value you created in this deliverable?**
  We created value by researching the project topic and analyzing multiple papers. This helped us understand what is going on in the real world for our topic, which will help us do the research for our next milestone.
  ★ **Do you think you worked enough and did what was expected of you?**
  Yes, as discussed by our sponsor in our first meeting, we completed all the milestones, and our sponsor verified them in the second meeting.
  ★ **Would you say you met the customers' expectations? Why, why not?**
  Yes, we had a meeting with our sponsor/customer and showed him our work, the The sponsor is pleased with our work and directed us to move forward.

- **Sprint Retrospective**:
  ★ **What Went right?:** The sprint was a success as all the stories were complete and added value to the project.
  ★ **What went wrong?:** We did not dedicate a fixed time to keep meeting. Most of the meetings were dynamic, which went wrong in this sprint.
  ★ **What Could Be Improved:** The area where we could improve is splitting up the enormous task into microtasks so that we can keep track of it and make it easy for the team members to work.
  ★ **How can we improve? :** We should be splitting up the work more and keeping track of it; that way, we will not have large tasks, and each task will be easy to tackle.
  ★ **Action Items**: The main action items were to read the paper given by the sponsor and read the other two related papers, which were achieved in this sprint.

- **Review**:
  ★ **Completed Work**: All the stories given in Sprint 1 were completed; the tasks are as follows.

Closed tasks for Sprint 0:



★ **Demo**: We discussed the literature review section with the sponsor, and they are happy.

★ **Stakeholder Feedback:** Stakeholders gave feedback to go ahead and work on future items, such as starting to apply models.

- **Sprint Meeting**:

★ **Sprint Goals**: The goal was to complete the literature review.

★ **Progress Updates:** The team progressed towards the sprint and completed all the assigned tasks.

★ **Impediments:** There were no such impediments; initially, the team faced a problem accessing the IEEE papers, but later, it was resolved with ASU resources.