Software Engineering

Reflection:

1. Introduction

Our project focused on developing a newspaper delivery system to help a newsagent manage their operations, including organising deliveries, tracking inventory, handling customer schedules.

We chose the Agile methodology, specifically the Scrum framework, because it allowed us to break the project into manageable sprints, adapt to changes, and address challenges collaboratively. This approach ensured we could meet the requirements while improving teamwork and communication.

This assignment highlighted the importance of designing and implementing software in a structured and collaborative manner, especially for non-technical users like newsagents.

2. Team Dynamics and Roles

Our team consisted of **Padraig, Ben, Michael, and Liam**, with each member taking on specific responsibilities based on their strengths.

- **Ben**: Focused on SQL setup, ER diagrams, and the development of the Publications class and j-units.
- **Liam**: Created completed Deliveries and Invoice as well as the tests for both and made the main menu class.
- **Michael**: Created complete Order class with test design and Junit tests. Created UML diagrams. Created group repository.
- **Padraig**: Created complete Customer class with test designs and Junit tests and kept a tidy repository.

We believe we all provided and equal contribution to the project as we all worked together on the project and made sure regardless of attendance that we all worked on the project and kept good communication within the group.

Although the team had a slow start, we quickly adapted to Agile practices and improved our collaboration. Responsibilities were distributed by class, with each member developing, testing, and integrating their components. This structure allowed us to work independently while aligning our efforts during sprints.

3. Sprint/Iteration Summary

- The work was divided across Four sprints with each consisting of Two Weeks. We updated the work consistently through GitHub, assigning and marking Tasks.
    - Sprint 1: We created User stories, acceptance criteria and test design for each entity in the project, started designing and setting up the project making UML and ER diagrams and setting up the SQL database.
    - Sprint 2: We Implemented the Create Feature for each entity along with implementing Exception handling.
    - Sprint 3: We Implemented Read and Delete Features. Some basic Tidying and optimization.
    - Sprint 4: We Implemented the Update Feature, Updated J-Units and tested them against the project. Finalized the Project DEMO.

4. Agile Practices and Tools

Several Agile practices and tools contributed to the project's success:

- **Weekly Stand-ups**: Conducted during lab sessions to discuss progress, blockers, and upcoming tasks.
- **Sprint Planning**: Tasks were divided based on expertise and tracked using a shared task plan.
- **Version Control**: GitHub was used to manage code changes, track progress, and resolve conflicts.
- **Discord**: Used for asynchronous communication and quick issue resolution outside lab sessions.

  These practices ensured transparency, adaptability, and effective collaboration throughout the project.

5. Successes and Strengths

- Detail areas where the team excelled, such as:
    - Motivation and drive to get each part done in a timely manner.
    - Task Management, we always made sure we understood which part each of us should be working on, on a weekly basis.
    - Weekly meetups, and frequent communication between the group.
    - Making sure all scripts were able to work well together and commented.

6. Challenges Faced

- We face some challenges working on this project, for example:
  - Estimating how long each task should take.
  - We had difficulties staying within the scope of the project.
  - We had issues with some parts of the code where we had to rework our scripts to be connected to one menu script.
  - We also had issues with expectations as we as a group did not want to let the team down and set high goals for ourselves causing stress, but we were able to manage this stress and use it for good

7. Lessons Learned

- Our time estimations are something we will improve over time and is not stressed over.
- We learned the importance of well-developed user stories and how it can affect the entire project and flow of work.
- Doing this project helped us reevaluate the way we will approach similar projects in the future.
- We have learned more about pacing ourselves and taking each step slowly to make sure it is completed before moving to the next step.
- We discovered the level of importance when it comes to reviewing other members' code and giving feedback.

8. Conclusion

To conclude, we believe our final project was a success, and we learned a lot from using the Agile process. This experience helped us deliver a working newspaper delivery system while also teaching us important lessons about teamwork and project management.

One of the main things we learned was the value of clear and well-thought-out user stories, which helped guide our work and keep us focused on the project's goals. We also realized the importance of better planning, especially when it comes to setting realistic goals and staying within the project's scope and how through experience this will improve naturally. Although we made some mistakes along the way, we were able to adapt, learn from them, and keep improving as we worked.

If we were to take on a similar project in the future, we are confident it would go more smoothly. With the experience we've gained, we could avoid many of the challenges we faced this time and deliver even better results. In the end, we successfully completed the project and met our goals and are satisfied with the final product.