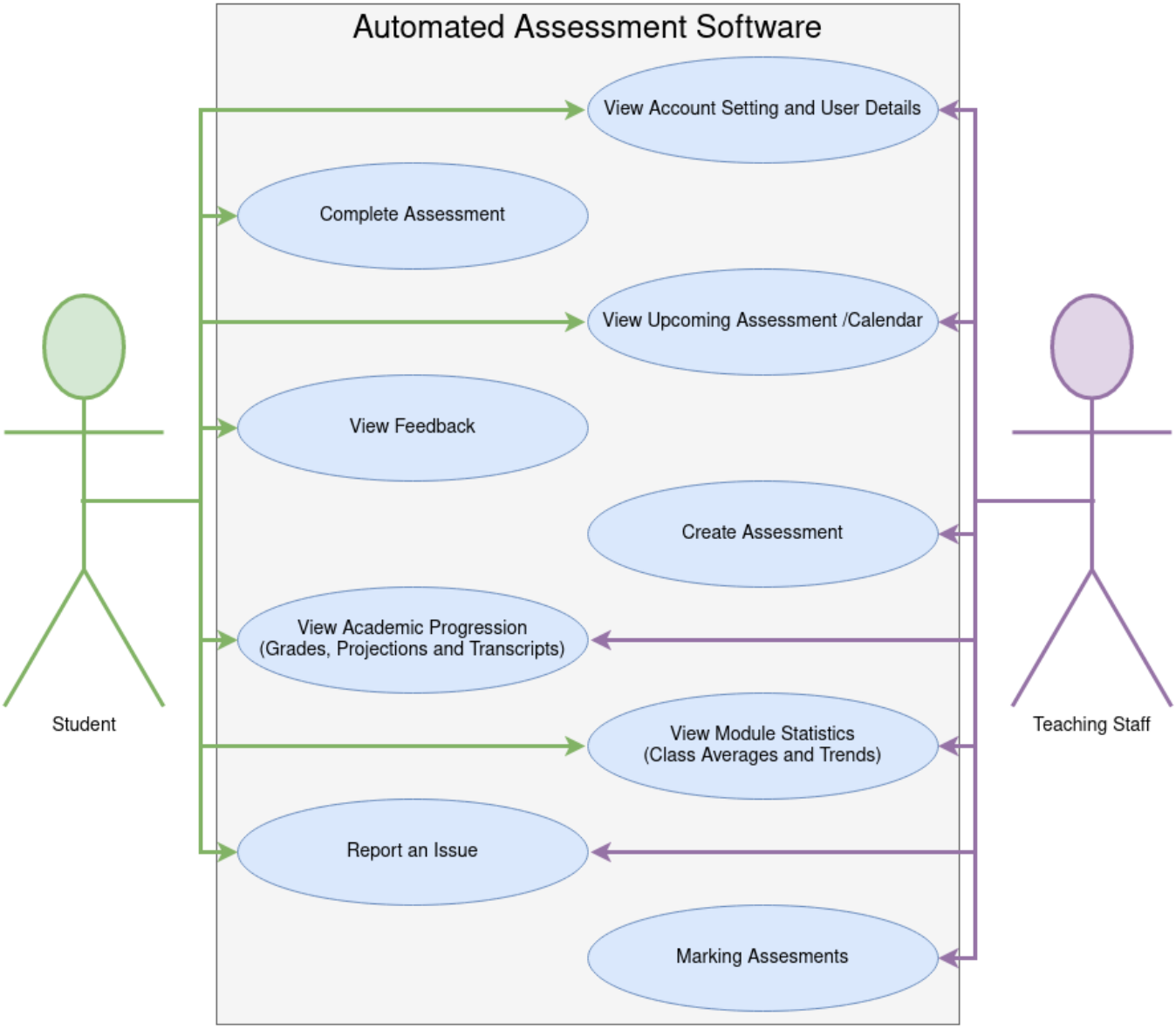
Requirements

Use Case Diagram



Use Case Descriptions

Use Case Name	Student ID	Link to Issue
Marking Assessments	C1629688	https://git.cardiff.ac.uk/c1629688/cmt-313-team-h/-/issues/7
View Module Statistics (Class Averages and Trends)	C21009487	https://git.cardiff.ac.uk/c1629688/cmt-313-team-h/-/issues/1
Create Assessments	C2101138	https://git.cardiff.ac.uk/c1629688/cmt-313-team-h/-/issues/2
Assessment feedback	C1738309	https://git.cardiff.ac.uk/c1629688/cmt-313-team-h/-/issues/3
View Academic Progression (Grades, Projections and Transcripts)	C21017560	https://git.cardiff.ac.uk/c1629688/cmt-313-team-h/-/issues/4
Complete Assessment	C2098739	https://git.cardiff.ac.uk/c1629688/cmt-313-team-h/-/issues/6
View Upcoming Assessment	C2032166	https://git.cardiff.ac.uk/c1629688/cmt-313-team-h/-/issues/5

Software Product Quality Requirements

Responsiveness

- Staff will be able to access their assessment management tools with no more than 3 clicks.
- Students will be able to access their assessment with no more than 3 clicks.
- The Response time during periods of normal activity will not exceed 1.5 seconds 95% of the time. During peak times this will not exceed 4 seconds. (Jalin, 2018)

Usability and Accessibility

- Each page will include different language options, such as Welsh.
- The website will be compatible with most web browsers i.e., Chrome, Firefox, Safari, Opera, etc.
- The user interface will be intuitive, user friendly and professional. This will be approved during the testing phase by quality assurance testers and user focus groups.
- Observing what the users do allows us to identify how often and where users make these errors, we can then minimize these errors to improve usability (Nielsen, 2012). To ensure this we will use the testers to carry out representative actions on the software. We would then determine if a UX update is necessary if there are many errors noticed.
- The system needs to have support for disabilities including font size options, text to speech, high contrast mode and ability to zoom display.
- A website will be capable enough to handle many simultaneous users without affecting its performance.

Security

- The system will ensure all personal information, such as passwords, will be encrypted.
- The software must meet GDPR compliance rules that involve the collection of user data. (Altexsoft, 2019)
- The system will have strict permission access control. Once the user is authenticated, they can only access and perform operations on data within the scope of their authority. (Jalin, 2018)
- The system will resist malicious access, such as virus attacks, password guessing attacks and hacker intrusions. (Jalin, 2018)
- The users must change the initially assigned login password immediately after the first successful login. The user will not be able to reuse previous passwords. (Guru99, 2021)
- The system will record unsuccessful attempts by a user to access information for audit purposes. (Guru99, 2021)

Maintainability

- The system will undergo regular maintenance and version updates in 3-month intervals.
- The system will save progress on each page in case of system issues or outages.
- The system will only require one engineer to maintain the system and one additional engineer to operate the system.

Portability

- Students will be able to access the system with any device that has an internet connection. The system will be compliant with desktop computers, laptops, tablets and smartphones.
- The software will have both desktop and mobile versions that are optimised for different devices. Both versions will be compliant with Microsoft Windows, Linux, Android, Apple's iOS and apple macOS. So, moving from one operating system to other does not create any problems (Guru99, 2021).
- The software will be simple to install and integrate with current Cardiff University systems.

Cost

- The software needs to be tested for performance, which will bring certain expenses to the team. This overhead or tax must be paid regularly. (Mike, 2011)
- The cost of maintaining and running the software will not exceed 20% of the estimated appraisal cost of £502,780.
- The software will remain profitable over the 5-year projected period.

Legal / Regulatory

- Ensure the originality of the system to avoid copyright disputes.
- Ensure that the information security of users is protected, to avoid disputes caused by the disclosure of user privacy.
- The system will not hold or publish any illegal content.
- The system will have anonymous marking options, to remove the possibility of discriminatory behaviour.
- Managers and teaching staff cannot view or change user information without authorized access.
- The system will audit the use of private information and intellectual property rights. (Guru99, 2021)

References

Altexsoft. 2019. *Non-functional Requirements: Examples, Types, How to Approach.* Available at: https://www.altexsoft.com/blog/non-functional-requirements/ [Accessed 11 February 2021]

Guru99. 2021. *What is Non-Functional Requirement? Types and Examples.* Available at: https://www.guru99.com/non-functional-requirement-type-example.html#:~:text=Types%20of%20Non%2Dfunctional%20requirement%20are%20Scalability%20Capacity%2C%20Availability%2C,reported%20to%20the%20security%20administrator. [Accessed 12 February 2021]

Jalin, R. 2018. *Description cases of common non-functional requirements*. Available at: https://blog.csdn.net/dylanren/article/details/79215402 [Accessed 11 February 2021]

Mike, C.2011. *Estimating Non-Functional Requirements*. Available at: https://www.mountaingoatsoftware.com/blog/estimating-non-functional-requirements [Accessed 12 February 2021]

Nielsen, J., 2012. Usability 101: Introduction to Usability. [online] Nielsen Norman Group. Available at: https://www.nngroup.com/articles/usability-101-introduction-to-usability [Accessed 12 February 2021]