# **Use Case Diagram**

Students

Staff

# **Use Cases**

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| --- | --- | --- |
| Use Case Name | Author | GitLab Link |
| Update Account Details | c1717301 | https://git.cardiff.ac.uk/c2068740/cmt313team\_b.automatedassessmenttool/-/issues/7 |
| Views Results and Feedback | c2106366 | https://git.cardiff.ac.uk/c2068740/cmt313team\_b.automatedassessmenttool/-/issues/2 |
| Complete Assessment | c21009333 | https://git.cardiff.ac.uk/c2068740/cmt313team\_b.automatedassessmenttool/-/issues/5 |
| Complete Assessment Review | c2079712 | https://git.cardiff.ac.uk/c2068740/cmt313team\_b.automatedassessmenttool/-/issues/4 |
| Manage Assessments | c2095130 | https://git.cardiff.ac.uk/c2068740/cmt313team\_b.automatedassessmenttool/-/issues/6 |
| Manage Course Enrolment | c2068740 | https://git.cardiff.ac.uk/c2068740/cmt313team\_b.automatedassessmenttool/-/issues/1 |
| View Results Report | C2078482 | https://git.cardiff.ac.uk/c2068740/cmt313team\_b.automatedassessmenttool/-/issues/3 |

# **Non-Functional Requirements**

Ioan – Functional Suitability, Performance Efficiency, Compatibility, Usability

Neetash – Reliability

Ce – Security

Matthew – Maintainability

Zhongwang – Portability

[Format: Must have this – Because of this – Validated by this]

## Functional Suitability

* Must provide fully automated formative and summative assessments to ensure purpose of system is met.
* Must provide timely results and feedback post assessment to ensure students can act on their feedback quickly; results and feedback should take no longer than 30 minutes to become available.
* Assessments must be marked automatically with at least 99% accuracy, to ensure academic standards are maintained.

## Performance Efficiency

* System must load quickly, to allow users to quickly access the features of the tool; first loading time must not exceed 3 seconds.
* System must respond to users requests quickly, to allow users to quickly navigate and interact with the website; response time must not exceed 2 seconds.
* Must remain responsive and quick when used by all members of the school simultaneously, to ensure assessments can still be completed efficiently during peak assessment periods.
* Database of the system must be large enough to hold all student and assessment data, to ensure that all necessary data is accessible within the system

## Compatibility

* Tool must be fully functional on all major browsers and platforms (Chrome, Firefox, Safari, IE11, Edge, Android, iOS), to allow users with different devices to access the features of the tool.
* Must be usable on older devices with limited hardware specifications, to ensure users who are unable to access high-end devices can still use the tool.
* System must use RESTful style API and the JSON data format, to allow information exchange with other systems if required. **(maybe too technical?)**

## Usability

* System must be easy to use for all staff and students, to ensure the system is accessible to users with any level of technical knowledge; system will be tested by a varied sample of users
* System must make use of a full range of accessibility features, to ensure it is useable by those with additional accessibility requirements; system will be tested by users with additional accessibility requirements
* System must be accessible to **all** students through the student intranet portal, to ensure the tool can be easily accessed when required.
* Sufficient tutorials and documentation must be provided that contain instructions for all nontrivial functions of the system; will be validated by receiving minimal complaints regarding software understanding.
* Must provide an intuitive interface, in which all important pages can be accessed from the navigation bar in the header of each page, to ensure the site can be easily navigated by all users.

## Reliability

* The software should be designed in a way that eliminates any issues/bugs that hinder with the code safety and the system components.
* Must be stable during use, be usable by thousands of users simultaneously i.e., the software should not crash and must be able to handle at least 30000 users.
* All database information must be recoverable in the event of a serious data loss, to ensure no assessment records are permanently lost.
* The software should pass a reasonable number of tests with at least a score of 90% (not sure) tests passed before being put into use. This ensures that the software is fit to use for the university with very less probability of failure.
* The software should deliver several non-functional attributes such as ease of use, user interface etc in order to improve the quality as well as the overall productivity of the users.

## Security

* The account password of the system must be protected, because it is not safe to expose the password at the data end. The measure is to limit the security level of the password and encrypt it with MD5.
* The system must have the function of recording server-side errors, because the server-side exceptions cannot be captured at the front end. The measure is to maintain the error log file at the server-side.
* The system must limit the user's operation behaviour, because the front-end control right is completely open to the user, which may lead to malicious operation. The measure is to limit the user's invalid behaviour, such as illegal input and malicious request.
* The system must have permission settings, because students and teachers and administrators have different function modules, and the measure is to distinguish the user identity.
* The system must have anti crawler function, because the automatic script will increase the server load and even lead to interface crash. The measure is to use picture captcha and mailbox verification when necessary human-computer interaction.
* The system must have cookie protection function, because hackers may tamper with cookie information to obtain user rights, and the measure is to encrypt and sign the cookie.

## Maintainability

* The system must be offline for no more than X hours during maintenance.
* All functions of the system should be fully modular and testable to allow for maintenance of individual systems without compromising others.
* Must be modifiable to allow for the development of additional functionality in the future, with minimal likelihood for propagation of bugs or errors.
* Systems must be modular and reusable to allow for easy integration into new features, with minimal number of systems in non-modular category.

## Portability

* The system must allow for the implementation of new assessment and review methods so that staff can apply any new type of assessment and review. The assessments and reviews can be store as a template type file that can be modified and read by the system.
* The system must be integrated into new hardware/software systems easily since the system will probably be allocated in different kinds of learning institutions. The system should be tested under different deploying environment while developing.
* The system must be integrated into the school's current online environment easily since it will be taken as part of the school online educating system. Integrating will be tested under the same online environment of the school.