

De La Salle University

College of Computer Studies

Software Technology Department

**The Multimedia Terminal**

SOFTWARE REQUIREMENTS SPECIFICATION

|  |  |
| --- | --- |
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1. **Executive Summary**

MGSK is a group of college students in De La Salle University – Manila; taking up a Bachelor’s Degree in Computer Science, major in Software Technology. The group was formed for a Web Application Development (WEBAPDE) course. The group exercises web application design as its main domain.

1. **Overview of the Business Process**

This chapter presents the process and goals of The Multimedia Terminal as a web application. Included in this chapter are the following items:

* Description of the process and requirements of finding other works of media that might interest users, based on their current interests.
* Data requirements as part of the process of recommending and counter-recommending similar works to other works.
* Different roles in the business process of recommending and counter-recommending similar works to other works.

**2.1 Existing Business Process**

The Multimedia Terminal’s process begins with the user. Any user can search the site for a work. If the work is not in the database, they may fill out a form to propose it to the site. The administrators then review each proposal and, if valid, add it to the database.

After works have been added to the database, registered users may now rate, review, and favorite these works. Adding a work to one’s favorites allows the site to give “taste recommendations” which are collective recommendations based on the user’s overall taste. Users who violate the terms and conditions of conduct of the site may be flagged by an administrator. Users may also recommend similar works or counter-recommend works that they think consumers of the work would dislike. To contribute to the other forms of association being done by the software, they may also add keywords or genres to be verified by an administrator. Regarding the creators of these works, users can also propose to add information about these creators, subject to the verification of the admins.

Finally, any users, whether registered or not, may search the site for works which may be done by genre, form of media, keywords, popularity, or cast/crew/developer team (for video games). This will show the work’s page. They can then view recommendations based on that work alone. Recommendations could be collated or sorted by user recommendation, keyword association, genre association, or creator association. They may also view counter-recommendations, but this will have mostly been determined through user counter-recommendation. This feature is the main crux of The Multimedia Terminal.

**2.2 Data Requirements**

A user provides his/her name, birthday, gender, e-mail, username, password for basic account information. They may then fill their profile with a profile picture, description, hobbies, interests, and favorite works list.

A work in general will have a title, keywords, genres, release year, poster/cover art/cover, and a five star rating. It will also have reviews. A work will also have creator data associated with them, but that varies between forms of media.

Movies and television share many similar traits such as writer/s, director/s, cast, crew, and rating, referring to the rating given by a ratings board from content screening. Television may have an end date as well as a list of episodes. Each episode has the information a movie has, plus a season/series and episode number. Anime and western animation will have similar attributes with movies and television with the addition of animation studios.

Books have an author, a publisher, and information on any other editions if available. It may also have word count as an attribute. Comics and manga will also have a publisher attribute, but will also have an issue/chapter number, volume number, as well as the writer/s and animator/s. Graphic novels have similar attributes sans issue number.

Theater works will have playwright, and date premiered.

Video Games have a developer company, consoles released on, and video-game specific genres.

Music will have band/artist information, album, and recording studio. Its genres will also be different.

Web Content will have a site URL, creator name/s, and may have organization affiliation e.g. YouTube Partner, Explosm, or Channel Awesome.

Creators will have a name, a basic bio, possibly trivia, if available, and a list of their works sorted by their affiliation.

**2.3 Roles in the Business Process**

Various users are involved in the process of The Multimedia Terminal. The roles of these users and their tasks are summarized in Table 2-1.

|  |  |
| --- | --- |
| Role | Description of Tasks |
| Casual User | * Search the site for various forms of media * by genre * by form of media * by keywords * by popularity * by cast/crew/developer team (for video games). * View general recommendations based on that work alone. * Collated * Sorted * by user recommendation * by keyword association * by genre association * by creator association * View counter-recommendations * through user counter-recommendation. |
| Registered User | * Search the site for various forms of media * by genre * by form of media * by keywords * by popularity * by cast/crew/developer team (for video games). * View general recommendations based on that work alone. * Collated * Sorted * by user recommendation * by keyword association * by genre association * by creator association * View counter-recommendations * through user counter-recommendation. * View taste recommendations * Rate a work * Review a work * Add a work to their favorites list * Recommend similar works * Counter-recommend works * Propose a new work * Add keywords * Add genres to a work * Add creator data |
| Administrator | * Search the site for various forms of media * by genre * by form of media * by keywords * by popularity * by cast/crew/developer team (for video games). * View general recommendations based on that work alone. * Collated * Sorted * by user recommendation * by keyword association * by genre association * by creator association * View counter-recommendations * through user counter-recommendation. * View taste recommendations * Rate a work * Review a work * Add a work to their favorites list * Recommend similar works * Counter-recommend works * Propose a new work * Add keywords * Add genres to a work * Add creator data * Verify work proposals * Verify keywords * Verify genres * Moderate reviews * Flag users * Verify creator data |

Table 2-1. User Roles and Tasks in The Multimedia Terminal

1. **Problem Analysis**

This chapter presents the findings of the investigation on the current state of cross-medium consumption needs and problems to be addressed by the software.

| **ID** | **Description** | **Cause** | **Symptoms** | **Impact** |
| --- | --- | --- | --- | --- |
| # | What’s the problem? | What causes the problem? | How do we know the problem exists? | Why is this important? What are the consequences? |
| 1 | Finding similar works of media to the ones you like is rather difficult at present. | * There is not centralized site where various data on different media can be integrated. | * Consumers have difficulty going from one form of media to another. * Consumers have difficulty finding similar works in one form of media | * Consumers usually stick to their comfort zone medium * Consumers don’t get what they want in other forms of media or even the medium they are used to |
| 2 | Recommendations for people are mostly limited in terms of accuracy and quantity. | * People do not know each other’s interests as well as they ideally should * Sites that offer this facility are limited to specific forms of media only | * Consumers receive limited recommendations. * Consumers receive inaccurate recommendations. | * Consumers get frustrated because they can’t find cross-media works that interest them |
| 3 | Transferring interest between mediums is more difficult for most consumers | * There is currently no dedicated facility for cross-medium recommendations. | * Consumers usually remain in their comfort zone medium | * Consumers miss out on possible interests in other media forms |

Finding similar interests, regardless of medium, whether same or cross-medium, is currently difficult unless a consumer visits multiple sites dedicated to the medium s/he wants to explore. The Multimedia Terminal allows the consumers to easily see what other people are recommending or how key ideas in their interests can be connected to similar works in other forms of media through the use of a centralized relational database, which easily allows for the analysis of interrelated data.

1. **Software Solution** 
   1. **Objectives**

The software aims to provide consumers with a way to find other works of media that might interest them, based on their current interests.

The specific objectives of the software are as follows:

* To provide a facility for browsing through different works of media;
* To provide a facility for reviewing different works;
* To provide a facility for recommending different works;
* To provide a facility for providing keywords for different works to associate it with other works;
* To provide consumers with recommendations based on provided data.

* 1. **Characteristics**

This software is intended to run on a web platform. It will be on a local server at first and it will mostly rely on user contribution and interaction. It will be reliable based on the algorithms used. It will be usable by different kinds of people due to its general appeal to consumers of different forms of media. It will be maintainable by easily being able to adapt other forms of media.

1. **User Stories**

This chapter presents the user stories included in the process of The Multimedia Terminal.

**5.1. Log In**

|  |  |
| --- | --- |
| **User Story # 1:** A user (registered, admin) can log in to perform privileged actions. | |
| **Estimate:** 12 hours | **Priority:** 20 |
| **Pre-condition:** The user must be a registered system administrator or user. | |
| **Scenario:**   1. The user selects the login option. 2. The website will prompt the user to enter their username and password. 3. The user will enter their email address and password. 4. The system authenticates the entered information.    1. If invalid, asks user to enter information again. 5. The system will recognize the user and give them privileged access to the website. If the user is an administrator, additional administrative capabilities are provided on top of standard user privileges. | |
| **Post-condition:** The user will be logged in to the system with privileged access. Administrators are given administrative capabilities on top of standard user privileges. | |
| **Acceptance Criteria:**   1. Test that the username/password combination entered is valid. 2. Test if the system prompts the user to enter another username/password combination if it is not valid. 3. Test if the system provides the user with the appropriate privileges if it is valid. 4. Test if system ensures all fields are filled out before submission. | |

**5.2. Search**

|  |  |
| --- | --- |
| **User Story # 2:** A user (casual, registered, admin) can search the site to find media they are looking for. | |
| **Estimate:** 16 hours | **Priority:** 20 |
| **Pre-condition:** The user must visit the website. | |
| **Scenario:**   1. The user inputs their search criteria. 2. The user is presented with a list media based on their search criteria. 3. The presented media can be further be sorted based on media type, genre, name, rating, or date. | |
| **Post-condition:** The user is presented with appropriate media after their search. | |
| **Acceptance Criteria:**   1. Test if all users registered or not, can browse the website. 2. Test if media presented via search must be related to the search keywords. 3. Test if media presented on the search page is sorted according to media, genre, name, rating, or date. | |

**5.3. View Recommendations**

|  |  |
| --- | --- |
| **User Story # 3:** A user (casual, registered, admin) can view recommendations based off any work to see other works they might like. | |
| **Estimate:** 12 hours | **Priority:** 20 |
| **Pre-condition:** The user must be viewing the work in question | |
| **Scenario:**   1. The user selects the option labelled “Recommendations”. 2. The system will present the user with additional media that would likely be appealing to them based on the page they are currently on. | |
| **Post-condition:** The user is presented with likely appealing media related to the current page. | |
| **Acceptance Criteria:**   1. Test if the recommendations match with most frequently recommended works in the database. | |

**5.4. View Counter-Recommendations**

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| **User Story # 4:** A user (casual, registered, admin) can view counter-recommendations based off any work to see other works they will most likely not like. | |
| **Estimate:** 8 hours | **Priority:** 40 |
| **Pre-condition:** The user must be on the website. | |
| **Scenario:**   1. The user selects the option labelled “Counter-Recommendations”. 2. The system will present the user with additional media that would likely be unappealing to them based on the page they are currently on. | |
| **Post-condition:** The user is presented with likely unappealing media related to the current page. | |
| **Acceptance Criteria:**   1. The “Counter-recommendations” match with most frequently unrecommended works in the database. | |

**5.5. View Taste Recommendations**

|  |  |
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| **User Story # 5:** A user (registered, admin) can view a general recommendation based on their favorite works to see works that reflect their general taste. | |
| **Estimate:** 16 hours | **Priority:** 50 |
| **Pre-condition:** The user must be logged into the system. | |
| **Scenario:**   1. The user selects the “Recommended For You” option. 2. The system presents the user with media related to their preferences 3. The user may sort the results according to media type, genre, title, rating, or date. | |
| **Post-condition:** The user is presented with media that would likely appeal to them based on their “favorited” items. | |
| **Acceptance Criteria:**   1. Test if the displayed works are based off of recommendations from the user’s favorites. 2. Test if results are correctly sorted according to media type, genre, title, rating, or date. | |

**5.6. Rate Work**

|  |  |
| --- | --- |
| **User Story # 6:** A user (registered, admin) can give a work a rating to give other users an idea of its quality. | |
| **Estimate:** 4 hours | **Priority:** 20 |
| **Pre-condition:** The user must be logged into the system. | |
| **Scenario:**   1. The user selects a media that they would like to rate. 2. The user is presented with 5 stars. 3. They user selects the number of stars that represents their rating for the media. 4. The system stores the user’s rating in the database | |
| **Post-condition**: The rating of the user is recorded and reflected in the media’s rating. | |
| **Acceptance Criteria:**   1. Test if only logged in users may rate media. 2. Test if the user may only rate a specific media once. 3. Test if the user may only select ratings from 1-5 stars. 4. Test if the media’s rating must be updated after the user submits their rating. 5. Test if the rating is stored in the database. | |

**5.7. Review Work**

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| --- | --- |
| **User Story # 7:** A user (registered, admin) can review a work to give other users a more concrete scale of the work’s quality. | |
| **Estimate:** 8 hours | **Priority:** 30 |
| **Pre-condition:** The user must be logged into the system. | |
| **Scenario:**   1. The user selects a media that they would like to review 2. The user selects the “Review” subpage of the site. 3. The user then selects the “Write a Review” option. 4. The system displays the form 5. The user writes a review. 6. The user then selects an appropriate rating.    1. If the user has already rated the work, the rating should reflect their rating. 7. The user then submits the review. 8. The system stores the review.    1. If the user has just rated the work, the system also stores the rating. | |
| **Post-condition:** The review will appear on the page for the selected media and the rating should also be updated. | |
| **Acceptance Criteria:**   1. Test if only logged in users may review media. 2. Test if a user may only review a specific media once. 3. Test if a user is required to select a rating for their review from 1-5 only if they have not rated the work yet. 4. Test if the media’s review page must show the user’s review. 5. Test if the review is stored in the database. | |

**5.8. Favorite Work**

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| --- | --- |
| **User Story # 8:** A user (registered, admin) can add a work to their favorites to keep track of these works and to contribute to their taste recommendations | |
| **Estimate:** 8 hours | **Priority:** 30 |
| **Pre-condition:** The user must be logged into the system and the media exists. | |
| **Scenario:**   1. The user visits the page of the specific media they like. 2. The user selects the “Add to Favorites” option. 3. The system stores that work under the user’s favorites in the database. | |
| **Post-condition:** The media appears in the user’s “favorites” list. | |
| **Acceptance Criteria:**   1. Test if only logged in users have access to this feature. 2. Test if the specific media can be added to favorites only once. 3. Test if the user’s favorites list must be updated in the database. 4. Test if the user’s favorites list must be updated in the site. | |

**5.9. Recommend Work**

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| **User Story # 9:** A user (registered, admin) can recommend a work from another work’s page to suggest other works that people might like as well. | |
| **Estimate:** 8 hours | **Priority:** 20 |
| **Pre-condition:** The user is logged in and both works exist. | |
| **Scenario:**   1. The user visits the page of the specific media they would like to link 2. The user selects the “Recommendations” option. 3. The user selects the recommend option. 4. The system displays the search interface. 5. The user inputs search criteria. 6. The system displays search results. 7. The user selects the desired media. 8. The user submits their choice. 9. The system stores the recommendations in the database. | |
| **Post-condition:** The two media should become recommendations for each other. | |
| **Acceptance Criteria:**   1. Test if the recommended page should become more likely to appear on the specific page’s list of recommendations. 2. Test if the recommendations were stored in the database. | |

**5.10. Counter-Recommend Work**

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| **User Story # 10:** A user (registered, admin) can counter-recommend a work from another work’s page to warn other users of works they may not like. | |
| **Estimate:** 8 hours | **Priority:** 40 |
| **Pre-condition:** The user is logged in and both works exist. | |
| **Scenario:**   1. The user visits the page of the specific media they would like to link 2. The user selects the “Recommendations” option. 3. The user selects the unrecommend option. 4. The system displays the search interface. 5. The user inputs search criteria. 6. The system displays search results. 7. The user selects the desired media. 8. The user submits their choice. 9. The system stores the recommendations in the database. | |
| **Post-condition:** The two media should become “unrecommendations” for each other. | |
| **Acceptance Criteria:**   1. Test if the counter-recommended page should become more likely to appear on the specific page’s list of “Unrecommended” media. 2. Test if the unrecommendations were stored in the database. | |

**5.11. Propose Work**

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| **User Story # 11:** A user (registered, admin) can propose a work be added to the database to expand the scope of the database. | |
| **Estimate:** 12 hours | **Priority:** 10 |
| **Pre-condition:** The user is logged into the system. | |
| **Scenario:**   1. The user selects the “Propose” on the main page. 2. The user selects “New Work”. 3. The user inputs the necessary details as provided by Section 2.2 for each classification of work. 4. The user selects submit. 5. The system stores the work in the database, flagged as “not yet verified”. | |
| **Post-condition:** The admins are sent a request to add media which they later review. | |
| **Acceptance Criteria:**   1. Test if the proposed content should not appear until verified. 2. Test if the admins are notified of the proposal. 3. Test if the work is stored in the database as “not yet verified”. | |

**5.12. Propose Keyword/Genre**

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| **User Story # 12:** A user (registered, admin) can propose a keyword/genre for a work to further associate it with similar works. | |
| **Estimate:** 8 hours | **Priority:** 10 |
| **Pre-condition:** The user is logged in and the media exists | |
| **Scenario:**   1. The user visits the page of the specific media they like. 2. The user selects the add keyword/add genre option. 3. The user inputs a keyword/genre. 4. The user then submits it. 5. The system checks if the keyword/genre matches any keyword/genre for that work.    1. If so, the user is notified and the keyword/genre is not submitted. Return to #3. 6. The system stores the proposed change in the database and marks it as “not yet verified”. | |
| **Post-condition:** The admin is notified of a keyword/genre addition request. | |
| **Acceptance Criteria:**   1. Test if the proposed keyword should not appear until approved. 2. Test if the admins are notified of the keyword proposal. 3. Test if the keyword/genres were stored as “not yet verified”. | |

**5.13. Propose Creator**

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| --- | --- |
| **User Story # 13:** A user (registered, admin) can propose a creator’s page to further associate that creator’s works with each other. | |
| **Estimate:** 16 hours | **Priority:** 50 |
| **Pre-condition:** The user must be logged in. | |
| **Scenario:**   1. The user selects the “Propose” option on the main page. 2. The user selects “New Creator”. 3. The user writes a recommendation to add a creator’s page along with a description of creator with the details in Section 2.2. 4. The user selects submit. 5. The system stores this creator with the flag “not yet verified”. | |
| **Post-condition:** The admin is notified of a creator proposal. | |
| **Acceptance Criteria:**   1. Test if the proposed creator should not appear until approved. 2. Test if the admins are notified of the proposal. 3. Test if the creator data is stored in the database as “not yet verified”. | |

**5.14. Verify Work**

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| **User Story # 14:** An admin can verify proposed works to ensure the integrity of the database. | |
| **Estimate:** 8 hours | **Priority:** 10 |
| **Pre-condition:** A media proposal has been sent to the admin | |
| **Scenario:**   1. The admin is given a notification regarding received proposals. 2. The admin selects the notification in order to view the full details. 3. The admin may choose to “Approve” or “Deny” the request. 4. If approved, the work is marked as verified.    1. If there is a work with the same name, the new work is given an index e.g. (I), (II)    2. If work is denied, it is deleted from the database. 5. If denied, the system deletes the proposal from the database. | |
| **Post-condition:** The creation of a page is either enabled or cancelled based on the admin’s choice. | |
| **Acceptance Criteria:**   1. Test if only admins can use this feature. 2. Test if the admin must always be notified when such requests are made. 3. Test if a work is marked as verified if the admin accepts it. 4. Test if a work is deleted if an admin denies it. 5. Test if work is given an index if it is a duplicate. | |

**5.15. Verify Keyword/Genre**

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| --- | --- |
| **User Story # 16:** An admin can verify proposed keywords/genres to ensure the integrity of the database. | |
| **Estimate:** 8 hours | **Priority:** 10 |
| **Pre-condition:** A keyword proposal has been sent to the admin | |
| **Scenario:**   1. The admin is given a notification regarding received keyword/genre proposals. 2. The admin selects the notification in order to view the full details. 3. The admin may choose to “Approve” or “Deny” the request. 4. If approved, the keyword/genre is marked as verified. 5. If keyword/genre is denied, it is deleted from the database. | |
| **Post-condition:** The keyword is either added or rejected according to the admin’s choice. | |
| **Acceptance Criteria:**   1. Only admins can use this feature. 2. The admin must always be notified when such requests are made. 3. The “Accept” and “Deny” options must work as labelled. | |

**5.16. Moderate Review**

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| **User Story # 16:** An admin can moderate reviews to ensure the civil environment of the site. | |
| **Estimate:** 4 hours | **Priority:** 40 |
| **Pre-condition:** A review has been flagged as problematic | |
| **Scenario:**   1. The admin is given a notification regarding the review. 2. The admin selects the notification in order to view the information of the page and the review. 3. The admin may choose to “Allow” or “Remove” a review.    1. If allowed, the system sets the flag to false.    2. If removed, the system deletes the review. | |
| **Post-condition:** The review is either removed or left alone according to the admin’s choice. | |
| **Acceptance Criteria:**   1. Test if only admins can use this feature. 2. Test if the admin must always be notified when reviews are made. 3. Test if the flag is set to false if an admin allows it. 4. Test if the review is deleted if an admin removes it. | |

**5.17. Flag User**

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| **User Story # 19:** An admin can flag aberrant users to maintain the civil environment of the site. | |
| **Estimate:** 4 hours | **Priority:** 40 |
| **Pre-condition:** A user has been reported as barbaric. | |
| **Scenario:**   1. The admin is given a notification regarding the user’s actions. 2. The admin selects the notification in order to view the information regarding the incident as well as the user. 3. The admin may choose to “Flag” the user or “Ignore” the report.    1. If Flagged, the system marks the user as flagged and can no longer post reviews or rate works.    2. If Ignored, the system sets the flag of the user to false. | |
| **Post-condition:** The user is either exonerated or flagged as a delinquent based on the admin’s choice. | |
| **Acceptance Criteria:**   1. Test if only admins can use this feature. 2. Test if the admin is always notified when reports are made. 3. Test if the system marks the user as flagged and prohibits the user from posting reviews or rating works. 4. Test if the system marks the user’s flag as false when the report is ignored. | |

**5.18. Verify Creator**

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| **User Story # 18:** An admin can verify a creator’s data to ensure the integrity of the database. | |
| **Estimate:** 8 hours | **Priority:** 50 |
| **Pre-condition:** A creator page proposal has been sent to the admin | |
| **Scenario:**   1. The admin is given a notification regarding the received creator data proposal. 2. The admin selects the notification in order to view the information of the page and the proposed genre. 3. The admin may choose to “Approve” or “Deny” the request. 4. If approved, the creator is marked as verified.    1. If there is a creator with the same name, the new work is given an index e.g. (I), (II)    2. If the creator is denied, it is deleted from the database. 5. If denied, the system deletes the proposal from the database. | |
| **Post-condition:** The creator page is either created or rejected according to the admin’s choice. | |
| **Acceptance Criteria:**   1. Test if only admins can use this feature. 2. Test if the admin must always be notified when such requests are made. 3. Test if a creator is marked as verified if the admin accepts it. 4. Test if a creator is deleted if an admin denies it. 5. Test if creator is given an index if it is a duplicate. | |

**Appendix A – Improved Process**

*This chapter presents the improved business process when the proposed software solution is implemented. This visualizes how the software solution benefits or affects the current business process.*

**Appendix B – References and Acknowledgement**

### This section allows you to properly cite all materials that you used, be these in the form of books or online resources. You must also acknowledge any person(s) and/or organization(s) you have interviewed or gathered the information from (name, position).

We would like to acknowledge Derek Banas for his tutorials on Web Design.