**Notes Retentioner**

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Due Date:  June 1st, 2023

# Declaration of Sole Authorship

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Signed:



Piraveen Udayakumar, 301102696 (Software Engineering Technician)

Date: June 1st, 2023

# Abstract

This Technical Report (TR) is about how we will tackle the problem, how to fortify students’ learning, with our proposed solution, Notes Retentioner. Notes Retentioner will be a newly created application by Team 6 to help foster long term memory for students or any aspiring learner’s notes.

This TR is significant for decision-makers (software development team) and for customers or end-clients. The software development team will need to be fully engaged with this report as it will provide structure and guidance for the project to be completed on time. The customers need to be in the loop throughout the TR as it will provide us feedback on the project for any necessary changes; the project’s nature will follow an agile approach to bring the highest potential of results.

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# 1.0 INTRODUCTION

Introduction (Including the problem statement):

* What is the technical problem?
* Why was the work described in the TR undertaken?
* What is included and/or omitted? What is the scope of the report and what procedures are used?
* What is your objective?
* What unique problems were encountered in doing or interpreting the work?
* Are there unique approaches in the study?

# 2.0 METHODOLOGY AND RESULTS

## 2.1 Literature Review

Provide a literature review of existing solutions to the problem discussed in the previous section. Focus your discussion on the strengths and weaknesses of these existing solutions.

## 2.2 Proposed Solution

Provide a description of your proposed solution. Discuss the strengths and weaknesses of your system.

Provide a developer perspective diagram of your software/hardware network architecture with proper captioning and accompanying explanations in the body of the text. A sample diagram can be found [here](https://drive.google.com/file/d/1aACSHAIBRRqlr9PMxfjaFi8UPg5G5P73/view?usp=sharing).

## 2.3 User Role Modelling

### 2.3.1 Brainstorm and Group

Show the results of your brainstorming session for identifying initial user roles and how they are organized (see Figure 1). Discuss each user role identified and the arrangement of Figure 1.

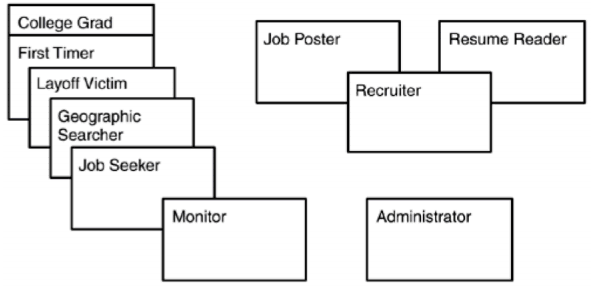


Figure 1: Organizing the user role cards on a table [1].

### 2.3.2 Consolidated User Roles

Show the consolidated user roles (see Figure 2). Discuss the results of Figure 2, focusing on why some roles were merged, removed, and/or added.

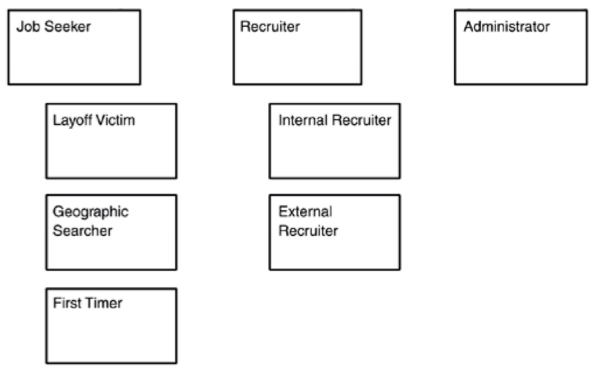


Figure 2: The consolidated role cards [1].

### 2.3.3 Description of User Roles and Persona

For each consolidated role from the above section 2.3.2, include detail that answer at least the following questions:

* The frequency with which the user will use the software.
* The user's level of expertise with the domain.
* The user's general level of proficiency with computers and software.
* The user's level of proficiency with the software being developed.
* The user's general goal for using the software. Some users are after convenience, others favour a rich experience, and so on.

Include personas here (optional).

### 2.3.4 Additional Documentation

For this section, include the video(s) from your workshop showing how your team:

1. Brainstormed for the initial set of user roles.
2. Organized the initial set of roles.
3. Consolidated and condensed the roles.
4. Generated detailed description of each consolidated role.

Provide the file name and URL to the video(s) in your shared folder or YouTube channel.

## 2.4 Release 1.0

### 2.4.1  User Stories

The following are required for this section:

1. Show and discuss the results of your low-fidelity prototype generated during your story-writing workshop (a sample of a “consolidated” low-fidelity prototype is illustrated in Figure 3).
2. Provide your definition of story point.
3. Show the stories created during the story-writing workshop.  You can submit scanned images of your index cards (both front and back). Figures 4 to 7 illustrates a single story with variation on the *Note*s (Figures 4 and 5), acceptance tests shown on the back of the index card (Figure 6), and a constraint, or non-functional requirement (Figure 7).
4. Prioritized stories based on the MoSCoW rule as illustrated in Tables 1 and 2 (see also *User Stories* deliverable).

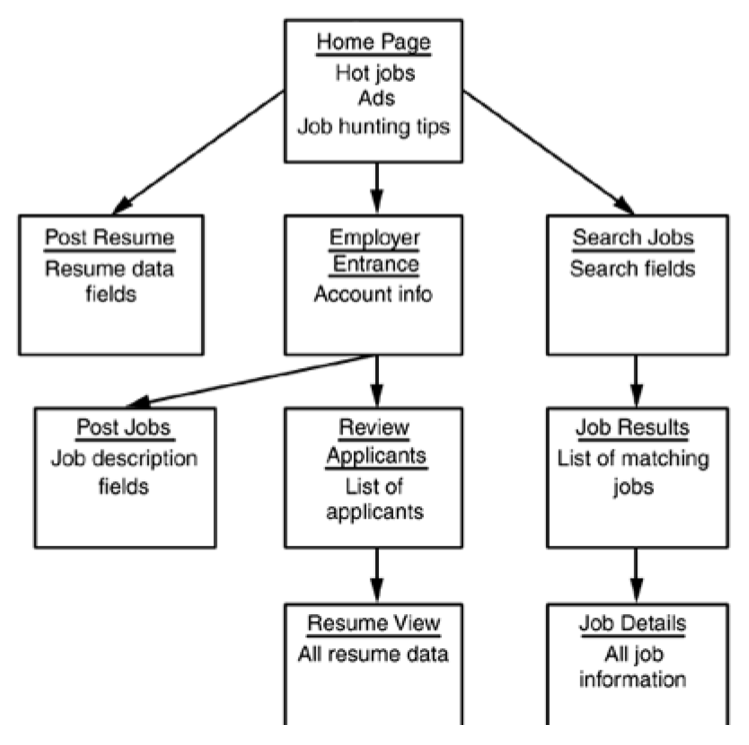


Figure 3: Example of a “consolidated” low-fidelity prototype. Note that each “individual” low-fidelity prototype is developed for each user role [1].

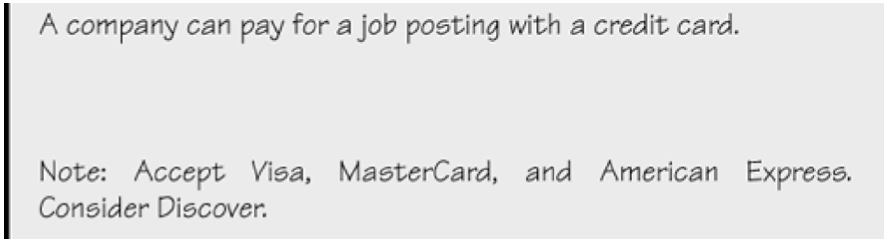


Figure 4: A story with notes providing additional detail [1].

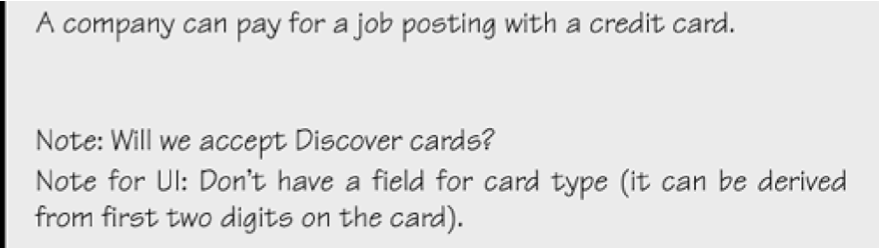


Figure 5: The revised front of a story card with only the story and questions to be discussed [1].



Figure 6: Details that imply test cases are separated from the story itself. Here they are shown on the back of the story card [1].

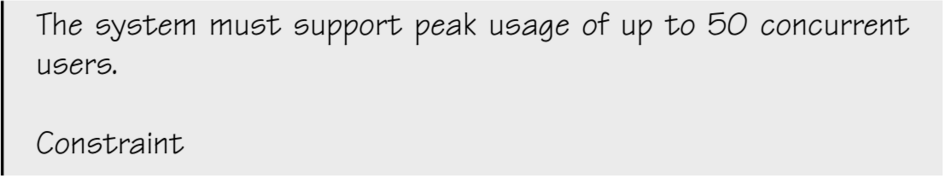


Figure 7: An example of a constraint story card [1].

Figure 8 illustrates a possible electronic representation of a physical story card. The left column represents the front of the card while the right column represents the back of the card.

|  |  |
| --- | --- |
| A Company can pay for a job posting with a credit card.  Note: Will we accept Discover cards?  Note for UI: Don’t have a field for card type (it can be derived from the first two digits on the card)  Estimate: 3 hrs. | Test with Visa, MasterCard and American Express.  Expected outcome: the system should automatically display a label of the card type.  Test with Diner’s Club.  Expected outcome: the system should prompt the user for a Visa, MasterCard or American Express card.  ...*<rest of the Tests follows>* |

Figure 8: Possible electronic representation of a physical story card.

Table 1: The Must-Have stories for Release x.y [1].

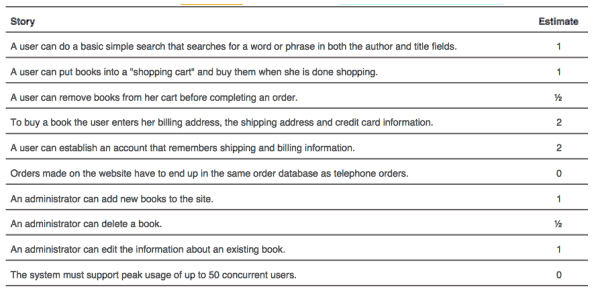
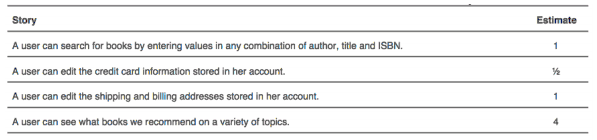


Table 2: The Should-Have stories for Release x.y [1].



### 2.4.2  Additional Documentation

For this section, include the video(s) from your workshop showing how your team:

1. Brainstormed for stories and generated the low-fidelity prototype (story writing workshop).
2. Estimated stories using the Wideband Delphi approach.
3. Prioritized stories using the MoSCoW rule.

Provide the file name and URL to the video(s) in your shared folder or YouTube channel.

### 2.4.3  Release Plan 1.0

The following are required for this section[[1]](#footnote-1):

1. Provide the product development roadmap.
2. Provide the iteration length and the release date.
3. The refine priorities of the Must- and Should-Have stories by organizing the stories into groups that have a high likelihood of being performed together.
4. The actual release plan.
5. Place the contents of your paper prototype in [Appendix A (Design Document)](#qoacug2ru8z).

### 2.4.4  Iteration Plan (Release 1.0)

The following are required for this section:

1. Present each iteration plan with tables showing disaggregated tasks per story; a sample is shown in Table 3. See also the *Planning an Iteration* deliverable.
2. Discuss any discrepancies between the estimated and actual ideal time required to complete the tasks for the Table mentioned above.

|  |
| --- |
| Table 3: Disaggregated tasks per story [1].  https://lh4.googleusercontent.com/XeQi1HulutY2JRQ6keiIBwQAABwmYtP7t1GjQFo1b4WaGRlCZDzp_VFe0oAvqmD85w5JDufu7dIFrP2Z7WLEBL2hjhkyLrpqtic6cLaESTPtdGqlVWXe6H9yRPLc_mYB_TqyvmU |

### 2.4.5 Additional Documentation

For this section, include 1 of 4 videos from your Iteration Planning meetings (recall that you have a total of 4 Iteration Planning meetings)[[2]](#footnote-2):

1. Showing how your team disaggregated stories into their constituent tasks.
2. How developers on your team volunteer and take responsibilities for tasks.

Provide the file name and URL to the video(s) in your shared folder or YouTube channel.

### 

### 2.4.7  Acceptance Tests for Release 1.0

The following are required for this section:

1. A table of stories and their associated acceptance tests for this Release as shown below in the sample in Table 5.
2. The link to your video demo for Release 1.0 stored either in a cloud drive, or your YouTube channel.

Table 4: Stories, acceptance tests, and contributors for Release 1.0 (Green=Passed; Red=Failed).

|  |  |  |
| --- | --- | --- |
| **Full description of user story** | **Acceptance test(s)** | **Name(s) of contributing Developer(s)** |
| As an User, I can … so that ….[[3]](#footnote-3) | Test with inputs ….  Expected outcome: ...  Test with inputs ….  Expected outcome: ... | Susan Smith,  Jay Johnson |
| As an Administrator, I can … so that ….[[4]](#footnote-4) | Test with inputs ….  Expected outcome: ...  Test with inputs ….  Expected outcome: ...  Test with inputs ….  Expected outcome: ... | Susan Smith,  Jay Johnson,  Shannon Shore,  George Gavinson |
| As an User, I can … so that …. | Test with inputs ….  Expected outcome: ...  Test with inputs ….  Expected outcome: ...  Test with inputs ….  Expected outcome: ... | Jay Johnson,  Shannon Shore,  George Gavinson |
| As an User, I can … so that ….[[5]](#footnote-5) | Test with inputs ….  Expected outcome: ... | Shannon Shore |
| As a Guest, I can … so that …. | Test with inputs ….  Expected outcome: ...  Test with inputs ….  Expected outcome: ...  Test with inputs ….  Expected outcome: ... | Susan Smith,  Jay Johnson,  Shannon Shore,  George Gavinson,  Abbey Appleby,  Brian Bolt |

*<Insert url to video demo of Release 1.0 here>*

## 2.5 Release 2.0

Release 2.0 has essentially the same structure as Release 1.0.

### 2.5.1  User Stories

If your team wrote enough stories to cover up to or beyond Release 2.0 during your first story-writing workshop as described in the *User Stories* section 2.4.1, then your team will not need to hold a second formal workshop.

If a second workshop was held, submission for this section is the same as section 2.4.1.

### 2.5.2  Additional Documentation

Include this section in your Technical Report only if your team required a second formal story-writing workshop. If a second workshop was held, submission for this section is the same as section 2.4.2.

### 2.5.3   Release Plan 2.0

The requirements for this section are the same as section 2.4.3; update or add sections if required.

### 2.5.4   Iteration Plan (Release 2.0)

The requirements for this section are the same as section 2.4.4.

### 2.5.5   Additional Documentation

This section is required ONLY IF your team submitted materials for section 2.4.5.

### 2.5.7   Acceptance Tests for Release 2.0

The requirements for this section follow the same requirements as in section 2.4.7 except acceptance testing is for stories allocated for Release 2.0 and incomplete stories subsequently moved from Release 1.0.

# 3.0 CONCLUSIONS

A conclusion interprets the data found in the Body. It is reasoned judgment and not opinions. Consider the variables. Relate cause and effect. Analyze, evaluate, make comparisons and contrasts. Base the conclusion on fact.

# 4.0 RECOMMENDATIONS

Recommendations are not required for all studies. They suggest a course of action and would generally be provided when there are additional areas for study, or if the reason for the TR was to determine the best action going forward.

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## References

[1] Cohn, Mike. 2004. *User Stories Applied: For Agile Software Development*, Addison-Wesley Professional.

# APPENDIX A (DESIGN DOCUMENT)

Traditional approaches to software development, in contrast to that of Agile approaches, place a great deal of emphasis on upfront design. The Agile approach to design is quick sessions that seek the simplest solution and then incrementally build on that solution. A quick design session can include the use of CRC cards that can ultimately lead to the generation of UML diagrams.

Using Agile approaches to software development does not mean you are limited to using only Agile techniques. If you feel that a technique (e.g., use case or interaction design scenario) is more suitable, or better conveys the features of your system to your users, then use it.

In this section, you are required to submit and discuss the following:

* A paper prototype of your application/system.
* Any design work your team has done in developing your system including CRC cards, UML diagrams, ERD diagrams, use cases, interaction design scenario, etc.

# APPENDIX B (TEST PLAN)

## 1.0 Introduction

### 1.0.1   Goals

Summarize the testing goals for the project.

### 1.0.2   Assumptions

Any assumptions which may affect the understanding or execution of this plan should be recorded here.

### 1.0.3   Risks And Assets

Describe the elements (software or hardware) that are not part of your application but still may impact its correctness and must be checked.

### Describe the elements that might positively influence testing on the project.

## 2.0 Scope

### 2.0.1   Features To Be Tested

Describe the features and functions that will be tested during the project. This should include functional and non-functional requirements.

### 2.0.2    Features Not To Be Tested

Describe the features that will not be tested and reason why.

## 3.0 Testing Procedures

Describe the testing procedures that the project will use. This includes the test lifecycle, types of testing, test objectives, and test criteria.

### 3.0.1   Test Objectives

Describe the objectives of the testing process.

### 3.0.2   Types Of Testing

Describe the types of testing that the project will use.

#### 3.0.2.1   Unit Testing

Describe the strategy for unit testing of the individual subsystems. This includes an indication of the subsystems that will undergo unit tests or the criteria to be used to select subsystems for unit test. Test cases are NOT included here.

#### 3.0.2.2   Integration Testing

Specify the integration testing strategy used. Describe the tests that will be performed in order to verify the interfaces between the subsystems of the software system. This section includes a discussion of the order of integration of subsystems. Test cases are NOT included here.

#### 3.0.2.3   Acceptance Testing

Specify the strategy for testing the software once it has been deployed. This section includes a discussion of the order of acceptance by software function. Test cases are NOT included here.

#### 3.0.2.4   Stress Testing

Identify the limits under which the program is expected to perform (memory constraints, disk space constraints, etc).

#### 3.0.2.5   Performance Testing

Refer to the functional requirements that specify acceptable performance.

### 3.0.3   Testing Tools

Describe the tools that you will use for testing.

## 4.0 Schedule and Deliverables

Describe the test deliverables that will be created during the project lifecycle. Include two tables, one for the schedule of tasks, another for the list of deliverables:

* Acceptance test
* Unit test
* System/Integration test
* Stress test
* Performance test
* Screen prototypes
* Defect reports and summaries
* Test logs and reports

Describe the reports that will be generated by the testing process.

Examples include:

Test Summary Report - A final report of the testing results from the project. Can include items such as total number of test cases, number of test cases executed, % test cases passed, etc.

# APPENDIX C (END-USER & ADMINISTRATOR MANUALS)

In this section, include a user manual for your system/application. The user manual should include the following items:

1. Instructions on how to install and configure your system/application, documenting all external software dependencies that need to be setup manually.
2. A user guide for the administrator (use screen shots of your system/application and briefly discuss each screen shot).
3. A user guide for the normal user (use screen shots of your system/application and briefly discuss each screen shot).

# APPENDIX D (PROGRESS MONITORING)

Your team is required to report two items related to progress monitoring in this appendix. The first item is a table summarizing progress and changes during a release with supporting discussion; a sample is shown in [Table 5](#v6f31rop6dwk). Notice in Table 5 that all iterations are shown per Release[[6]](#footnote-6). Also, see *Table 1* in the *Measuring and Monitoring Progress* deliverable.

|  |  |  |
| --- | --- | --- |
| Table 5: Progress and changes for all iterations [1].  https://lh5.googleusercontent.com/4Ap6uEsBxYifEjZuDn1Lj7V4URVZyBH7pdlR3GI1Muc-OxP7iE51R_qXc06cBoPtAJLqXna8S1RwR7DO1t-PTcJj0Jv5ybINsjn94Z9SUdpIpFBFQnJxG7flKVvm15qJHJB4H9Y  The second item is an iteration burndown chart (see [Figure 9](#uotmwo80zdj)) reflecting the data from Table 5.   |  | | --- | |  | | Figure 9: Iteration burndown chart for data from [Table 5](#v6f31rop6dwk). | |

1. See *The Release Plan* deliverable. [↑](#footnote-ref-1)
2. Indicate which iteration the video corresponds to. If you decide to submit a video in Release 1.0, then you do not need to include an *Additional Documentation* section for Release 2.0. [↑](#footnote-ref-2)
3. Green colour code indicates that all tests passed successfully as intended. [↑](#footnote-ref-3)
4. Red colour code indicates that at least one test unintendedly failed. [↑](#footnote-ref-4)
5. When all tests for a given story fails, this may suggest that implementation of the story has not even begun and indicates poor planning on the part of the team. [↑](#footnote-ref-5)
6. For subsequent Releases, do NOT restart numbering the Iteration.  For example, let us assume that we have another Release (i.e., Release 2.0), we would continue numbering our Iterations as *Iteration 5, Iteration 6,* and so on. [↑](#footnote-ref-6)