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Configuration and Change Management Report	Date: 13/05/2022

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## Configuration and Change Management Report

### 1 Introduction

During the life of a software system, it goes through some changes. These changes can take place during the development or use phases. A mistake that needs to be corrected, new requirements, new requests may cause. These changes should be planned and carried out in compliance with the software system.

Configuration management is the systematic management of the configuration components and resources of a software system in line with the system's processes, policies, and tools. Configuration management is critical for increasing the software system's performance, functional, and physical properties to the planned level and maintaining that level through all potential changes.

Change management refers to the process of analyzing a planned change and then planning that change as a result of that analysis. Aspects such as the contribution of the change to the system, the cost of the change, the necessity of the change, the methods considered, and efficiency are all discussed during this analysis process. In this process, the most logical and efficient change that can be applied is planned.

Configuration and change management are critical in ensuring that a change in a software system is managed and accurate. It's also crucial to keep track of how the team members approach the project and how well they get along with one another.

### 2 Purpose

Configuration management has tasks such as defining configuration components such as network, server or computer resources, tagging them, ensuring their security, tracking changes, verifying and controlling configurations, and determining responsibilities. Change management has tasks such as determining the needs of changes and their effects on the system, planning and realizing the strategy of change.

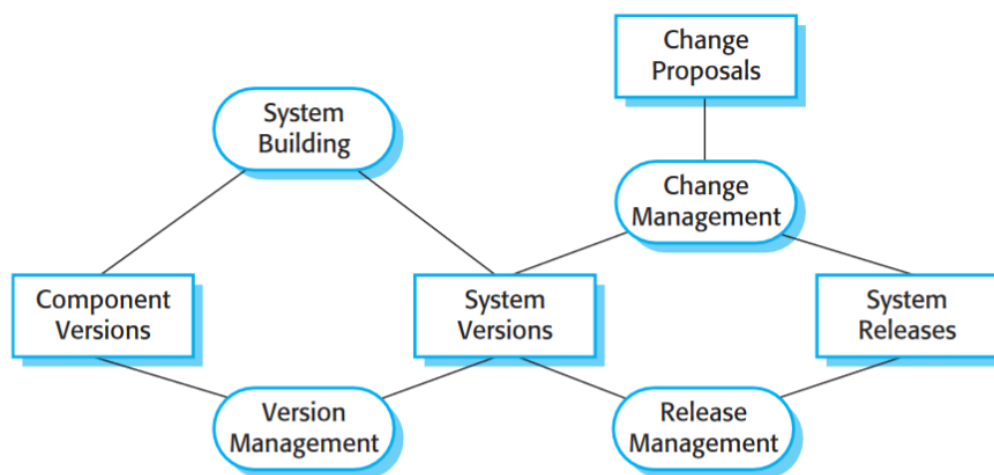
The Git system will be used to ensure that this entire process is followed appropriately and that the system's versions are controlled. Git is a version management system that is free and open source. Changes will also be planned and reported using the Jira system. Jira is a bug tracking and project management system that can be accessed through Github. The main purpose of using these systems is to increase the efficiency of the cooperation in the project and to reduce the costs of mistakes that can be made.

Changes may be planned and exact times specified to each change task thanks to the Jira platform. This will allow team members to share work more efficiently. Team members will be able to work on the same project thanks to the Github platform, therefore there will be no conflict between the software packages used in the project. Changes can be done without affecting the main project by creating separate branches on Github, and the impacts of the changes on the system can be investigated.

As a result, this document is in charge of documenting the change's planning, implementation, and future effects, as well as guaranteeing team member compatibility and managing system versions.

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### 3 Configuration and Change Management Specifications



Configuration management of a software system includes interrelated activities. These are Change management, Version management, System building, Release management.

#### 1. Change Management:

It is the activity of monitoring the plan, strategy and effects of the changes that can be made in the system due to reasons such as customer requests and system requirements.

The versions of the project and the release times of the versions were determined. Strategies and applicability of the changes to be made were planned. Tests were prepared to ensure the accuracy of the changes, and the environment was created to monitor their compatibility with the system. Considered for the effects of changes on the system, and errors are reduced.

#### 2. Version management:

It is the activity in charge of maintaining the system's integrity and development, as well as providing version control and assuring developer harmony. This activity will be synchronized with this process thanks to the Github platform. A branch will be created for each task, and team members will be able to work with their own branches from there. A controlled working environment was created without damaging the system's main project.

#### 3. System building:

It is the process of assembling a program's components, data, and libraries into a unified whole and harmonizing it. Project components and changes to the project are time stamped on the Jira platform. The development process continues by estimating all possible errors and risks.

#### 4. Release management:

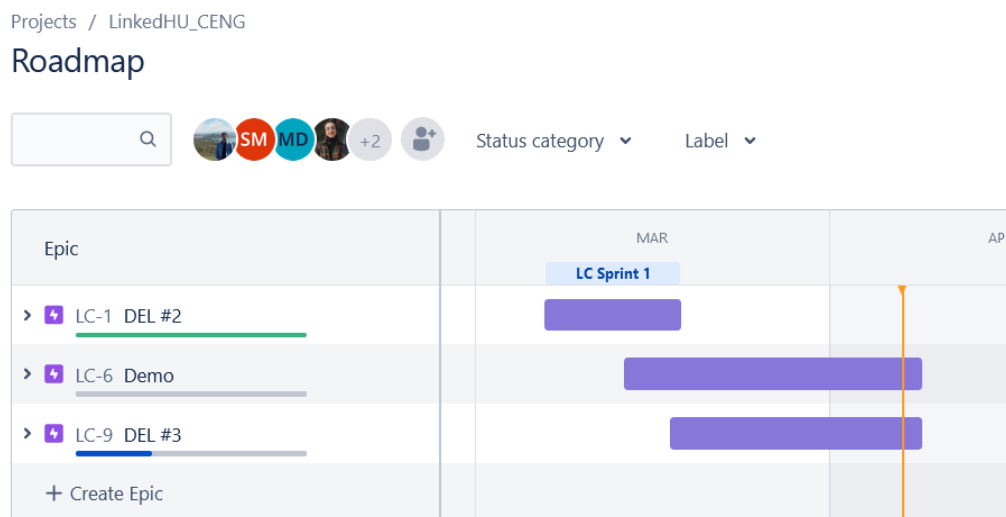
It includes tracking the lifetime and adaptation of versions of the software at the time of development and customer use. Correct choices were made so that the version of the software used in the development process should be "long term supported". .NET 6.0 with the "LTS" label was preferred in the main software language.

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## 4 Key Considerations

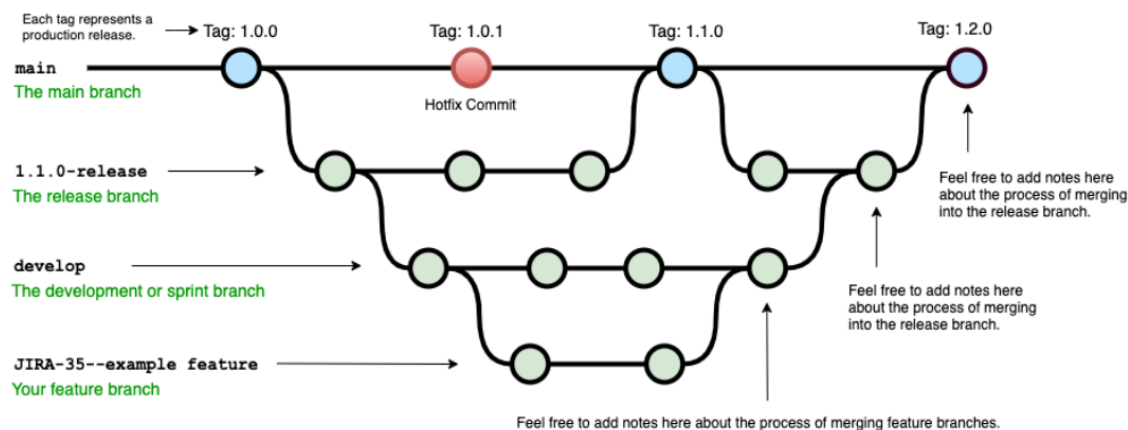
The development process is difficult and error-prone. Some rules must be established in order to better build this system. Jira and Github platforms are utilized in this system to solve this problem and organize the development process. All tasks that must be completed on the Jira platform must be entered on a daily basis, with members and times assigned. Thanks to Github integration, these activities provide a convenient setting for team members to collaborate.

Below is a sample section of the Jira platform.



On the Jira platform, it shows the stage of a task, when it will be completed, and by whom and by whom. With this planning, it is possible to take quick steps in the development process.

Below is an example of the map to follow on the github platform.



Some rules have been determined for the use of the Github platform in the system.

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#### 1. Create Branch

As seen above, development will proceed with a specific map rule. It will have a Main branch. This branch will have the latest changes of the enhancements. It is the branch of our main project. There will be one develop branch. New feature branches will be opened on this branch. The names of these branches will be opened with the task and team member name details. Tasks of team members can be tracked. In this way, developments will be achieved without affecting the main branch, and team members will be able to work efficiently.

#### 2. Add Commits

During the development stages, operations such as adding, deleting or updating can be done. These operations are committed to branches. These operations can be recorded and tracked on the project. Special messages are written to the operations in all of these operations so that others can understand the changes. Benefits include defining the project's direction and preventing mistakes and confusion as a result of these messages.

#### 3. Open a Pull Request

After a development has been completed on the computer, the developer can open a pull request. An efficient step should be taken for the reviewers to check by adding a detailed comment with this request.

#### 4. Review and Control Code

After one of the team members completes the development, they send a pull request and a secondary check is done by the reviewers. Comments are made at the controls, and the suitability of the request is evaluated. It was decided by the team members that there should be more than one reviewer and that the review should be done faster for efficiency.

#### 5. Merge

After all controls are checked, the request is approved, and the merging process takes place. With this merge process, the project goes one step further. It is possible to reach the pre-merge project in a future error.

#### 6. Deployment

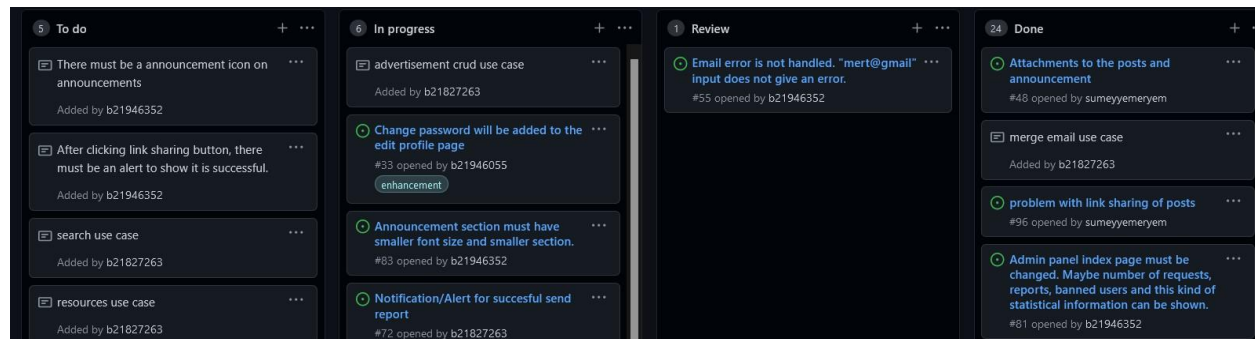
In order to avoid confusion in the project deploy phase, a release branch will be created and worked on. After the development on the release branch is completed, the merge authority for the deploy phase will be the responsibility of a single person. This is a step taken to minimize possible risks.

If the whole process is briefly summarized, a developer will work on the develop branch. The developer will create sub-branches (feature branch) for the things that she/he is in charge of. The developer will be able to merge into the develop branch once she/he's finished with these sub-branches. After the tests in the develop branch are completed, a pull request is sent to merge with the main branch. Reviewers will examine this request, and if it is found to be inappropriate, the issues will be fixed. The merge procedure will be carried out once the request has been accepted. During these processes, the developer will execute various tests in order to decrease all possible risks. When the main branch development is finished, a deployment can be done. This is a process that the team will continue to work on together and in communication throughout.

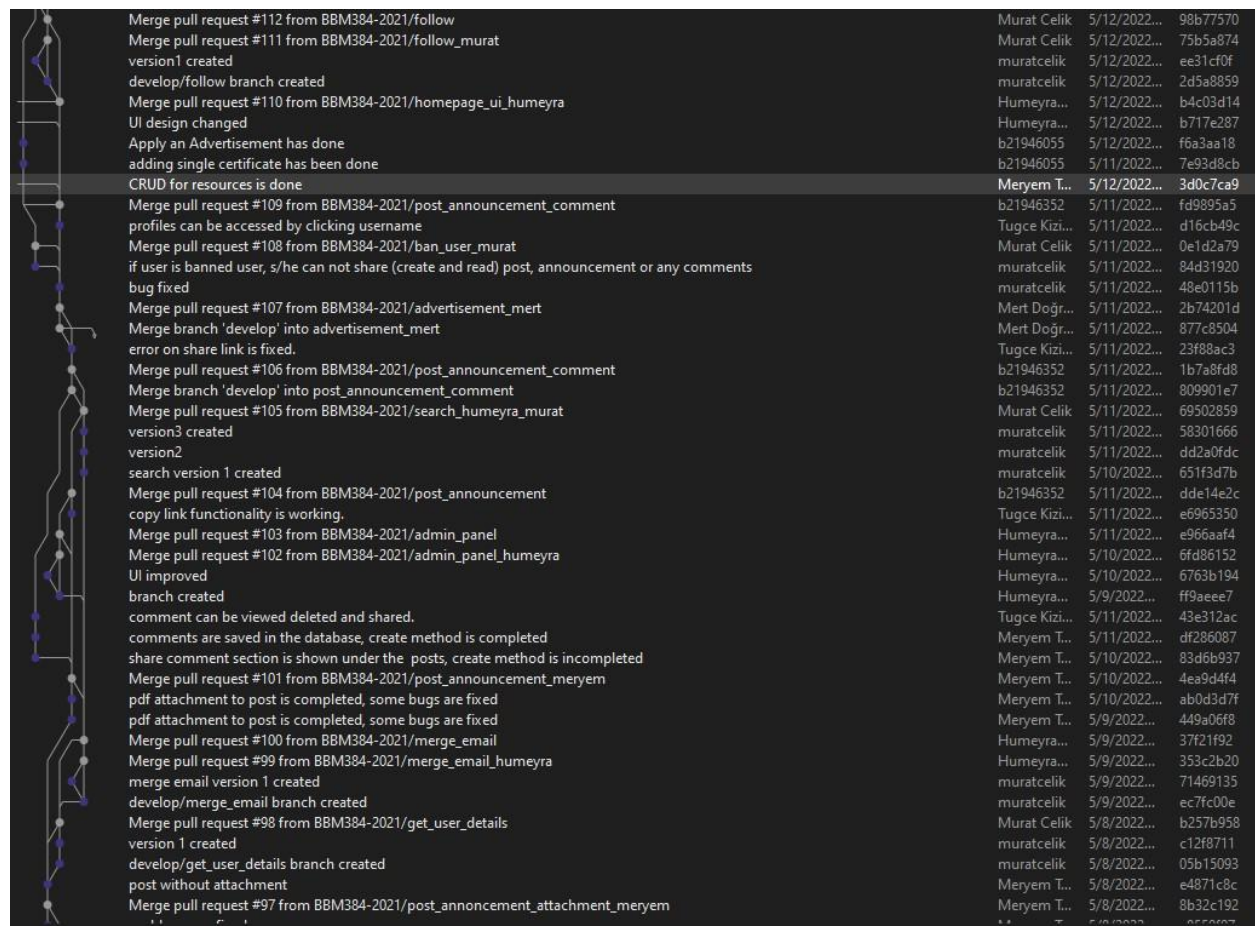
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## 5 Final Reviews

The project management feature provided by Github was used to facilitate interaction and communication within the group. Thanks to this feature, tasks to do, in progress and completed tasks were easily tracked. While some issues were assigned to individuals, some issues were resolved by collaborative work.



During the project, various branches opened for different features were worked on. Everyone opened a new branch with their own name from the branch that was opened for the feature they were working on, and after the work was completed, it was merged into the develop branch. At the end of the project, we merged the develop branch with the main branch. Throughout the project, 285 commits were made and 65 branches were created.



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Merge pull request #76 from BBM384-2021/bug\_fix\_tugce  
 cshtml files are formatted.  
 Merge pull request #75 from BBM384-2021/bug\_fix  
 Merge pull request #74 from BBM384-2021/bug\_fix\_tugce  
 update and delete post bug is fixed  
 Merge pull request #73 from BBM384-2021/bug\_fixes\_murat  
 bugs of administration panel fixed  
 Merge pull request #71 from BBM384-2021/bug\_fixes\_mert  
 password minLength check has been done  
 title section fixed  
 Merge pull request #70 from BBM384-2021/bug\_fixes\_murat  
 Merge branch 'develop' into bug\_fixes\_murat  
 Merge pull request #68 from BBM384-2021/report\_user  
 Merge pull request #67 from BBM384-2021/report\_user\_murat  
 ignore session.  
 Merge pull request #66 from BBM384-2021/report\_user\_murat  
 report page and administration report control panel version 1 created.  
 develop/report\_user branch create  
 Merge pull request #64 from BBM384-2021/post\_announcement  
 Merge pull request #63 from BBM384-2021/post\_announcement\_tugce  
 share and comment buttons are shown  
 Merge pull request #61 from BBM384-2021/post\_announcement\_tugce  
 post ordering is corrected  
 Merge pull request #60 from BBM384-2021/develop  
 Session bug fixed.  
 Merge pull request #59 from BBM384-2021/profile  
 Merge pull request #58 from BBM384-2021/profile\_tugce  
 posts are added to the profile  
 Merge pull request #54 from BBM384-2021/admin  
 Merge pull request #53 from BBM384-2021/admin-tugce  
 admin panel added and verify account function is working  
 Merge pull request #52 from BBM384-2021/post\_announcement  
 Merge pull request #51 from BBM384-2021/post\_announcement\_tugce  
 update announcement gui - center title and update button  
 Merge pull request #50 from BBM384-2021/post\_announcement  
 Merge pull request #49 from BBM384-2021/post\_announcement\_tugce  
 Modifications done on update and create post, announcement gui  
 some bugs are fixed for edit and view profile  
 privacy link is updated.  
 Merge pull request #40 from BBM384-2021/add\_profile\_picture/meryem  
 Merge branch 'develop' into add\_profile\_picture/meryem  
 Merge pull request #42 from BBM384-2021/welcome\_privacy\_page\_design  
 Merge pull request #41 from BBM384-2021/welcome\_privacy\_page\_design\_tugce  
 welcome and privacy page are added.

b21946352	4/15/2022...	f7cabb7b
Tugce Kizi...	4/15/2022...	2439017d
b21946352	4/15/2022...	7e8d7f48
b21946352	4/15/2022...	61565083
Tugce Kizi...	4/15/2022...	0330c330
Mert Doğr...	4/15/2022...	9f8d706e
muratcelik	4/15/2022...	4e20860f
Murat Celik	4/14/2022...	9fd3b9cf
b21946055	4/14/2022...	a99e3909
b21946055	4/14/2022...	53a0dbe9
Murat Celik	4/14/2022...	b6230344
Murat Celik	4/14/2022...	8ecf10fe
Mert Doğr...	4/14/2022...	c94c71ce
Murat Celik	4/14/2022...	1d777d84
muratcelik	4/14/2022...	c9f87988
Mert Doğr...	4/14/2022...	56885fa8
muratcelik	4/14/2022...	f67584f7
muratcelik	4/14/2022...	b7d18ecd
b21946352	4/14/2022...	3055d99c
b21946352	4/14/2022...	db57c18a
Tugce Kizi...	4/14/2022...	72d284d7
b21946352	4/14/2022...	fa140b48
Tugce Kizi...	4/14/2022...	e6012bcb
b21946352	4/14/2022...	662ea79c
muratcelik	4/14/2022...	2aecd892
b21946352	4/14/2022...	f7f72f8b
b21946352	4/14/2022...	1b5a27c0
Tugce Kizi...	4/14/2022...	270d1c77
b21946352	4/14/2022...	4b05deb3
b21946352	4/14/2022...	718bb184
Tugce Kizi...	4/14/2022...	e250021a
b21946352	4/14/2022...	96ca1738
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Tugce Kizi...	4/14/2022...	4544ab2b
b21946352	4/14/2022...	1c2ec135
b21946352	4/14/2022...	60254f5c
Tugce Kizi...	4/14/2022...	e20db3c6
Meryem T...	4/14/2022...	9a64c1e5
Tugce Kizi...	4/14/2022...	fad9f44
Meryem T...	4/14/2022...	63cfedd
Meryem T...	4/14/2022...	d1d92d49
b21946352	4/14/2022...	e6ca275a
b21946352	4/14/2022...	4f08ffe4
Tugce Kizi...	4/14/2022...	e50044e8

develop 65 branches 1 tag  
 Go to file Add file Code  
 This branch is 88 commits ahead, 1 commit behind main. Contribute  
 b21827263 Merge branch 'develop' of https://github.com/BBM384-2021/bbm384-20... 6e8c1bc 1 hour ago 285 commits

## Distribution of Tasks

This document was prepared primarily in collaboration with Software Configuration Manager (Murat Çelik) and Software Analyst (Humeyra Uçar), with contributions from the entire team.