MPT ANALYSIS USE CASES

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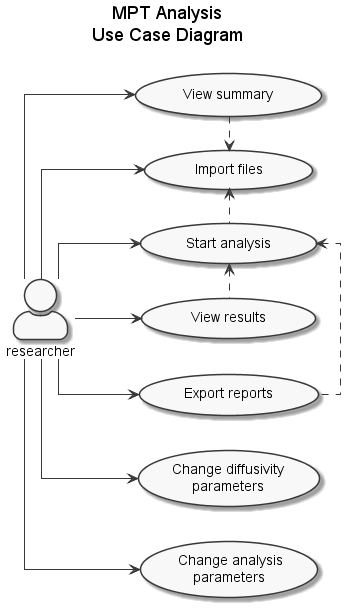
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# Introduction

The Use Case Document is a business document which provides a story of how a system, and its actors, will be utilized to achieve a specific goal. An effective Use Case should provide a detailed step-by-step description of how the system will be used by its actors to achieve the planned outcome. The purpose of the Use Case is to tie the business needs of the system to the design parameters of the system to ensure that the completed system achieves the goals established by the business requirements. The level of detail in Use Cases may vary greatly depending on the size and complexity of the system being designed. This Use Case template provides you with everything you need to develop your Use Case Document.

## Example:

This Use Case has been developed for ABC Corporation’s new system for ordering material based on the design team’s gathering of business and functional area requirements. The Material Ordering System will replace the manual material ordering processes currently utilized by ABC Corp. ABC Corp. has identified business needs for reducing man hours for material ordering and leveraging existing software platforms (i.e. SAP) to help manage material ordering and inventory management. The new Material Ordering System will be designed to meet these business needs and improve ABC Corp.’s overall business strategy.



## Explanation of Use Case Contents

Use Case formats and contents may vary based on system requirements, organizational standards, or unique situations. However, a majority of Use Cases consist of some fundamental contents which may be applied across a wide range of system types. This section will provide explanations for each section of the Use Case.

**Name of Use Case**: Provide a short name for the use case which should lend itself to the objective of the system.

**Description**: This section should provide a description of both the reason for using the use case and the expected outcome of the use case.

**Actors**: Actors may be primary or secondary. Primary actors are the people who will be initiating the system described in the use case. Secondary actors are those will participate in the completion of the use case.

**Precondition**: This section should describe any conditions that must be true or activities that must be completed prior to executing the use case.

**Postcondition**: This section should describe the state of the system at the conclusion of the use case. Postconditions may include conditions for both successful and unsuccessful execution of the use case.

**Flow**: This section should describe all actions of the user and the expected system responses for planned normal execution of the use case. The description should be sequential and provide adequate detail to understand all user actions and system responses.

**Alternative Flows**: Many use cases have varying or special extensions or conditions which are separate from the main flow but also necessary. Alternative flows are usually the result of options or exceptions built into the use case which may alter the primary flow.

**Exceptions**: When use cases are executed, there may be various conditions which result in errors. This section should describe any errors that may result during use case execution and how the system will react or respond to those errors.

**Requirements**: This section should describe any non-functional or special requirements for the system as the use case is executed. These requirements may consist of legal or regulatory requirements, quality standards, or organizational requirements that are outside of the functional requirements the system is expected to perform.

# Use cases

## Use case 1: Import data

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Use Case:** | **Import data** | | |
| **Created by:** | **Leandro Gabriel** | **Last updated by:** | **Leandro Gabriel** |
| **Date created:** | **2021/02/23** | **Last revision date:** | **2021/02/23** |
| **Description:** | ABC Corp. buyer submits material order to one of a pre-approved list of material vendors | | |
| **Actors:** | Researcher | | |
| **Preconditions:** | 1. Researcher has acquired the video files from microscope. 2. The video analysis was performed in ImageJ, using the Mosaic plugin. 3. The researcher has exported the video analysis results in CSV format. | | |
| **Postconditions:** | 1. Researcher is led to the summary page. 2. Researcher can perform analysis. | | |
| **Flow:** | 1. Researcher clicks the “Import data” button. 2. The system presents a dialog window for the researcher to select the file(s) to import. 3. The researcher selects one or more files. 4. The researcher clicks the “Ok” button on the dialog window. 5. The system reads the filename list provided by the dialog window. 6. The system imports all files, one by one. 7. The systems summarize the total trajectories and valid trajectories for each imported file. 8. The system redirects the researcher to the summary page. 9. The system presents the summary information to the researcher. | | |
| **Alternative flows:** | In step 6 of the normal flow, if any file has been already imported:  1. The system adds the new file(s) to the already imported files.  2. The systems computes the new summary. | | |
| **Exceptions:** | In step 6 of the normal flow, if any file is already imported, it should be ignored.  1. The system verifies that the file was already imported.  2. The systems skips the existent file.  In step 6 of the normal flow, if any file is in the wrong format, it should be ignored.  1. The system verifies that the file has the right format.  2. The systems skips the wrong file. | | |
| **Requirements:** | The following requirements must be met before execution of the use case:  N/A | | |

## Use case 2: View summary

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Use Case:** | **View summary** | | |
| **Created by:** | **Leandro Gabriel** | **Last updated by:** | **Leandro Gabriel** |
| **Date created:** | **2021/02/23** | **Last revision date:** | **2021/02/23** |
| **Description:** | ABC Corp. buyer submits material order to one of a pre-approved list of material vendors | | |
| **Actors:** | Researcher | | |
| **Preconditions:** | 1. Researcher has acquired the video files from microscope. 2. The video analysis was performed in ImageJ, using the Mosaic plugin. 3. The researcher has exported the video analysis results in CSV format. | | |
| **Postconditions:** | 1. Researcher is led to the summary page. 2. Researcher can perform analysis. | | |
| **Flow:** | 1. Researcher clicks the “Import data” button. 2. The system presents a dialog window for the researcher to select the file(s) to import. 3. The researcher selects one or more files. 4. The researcher clicks the “Ok” button on the dialog window. 5. The system reads the filename list provided by the dialog window. 6. The system imports all files, one by one. 7. The systems summarize the total trajectories and valid trajectories for each imported file. 8. The system redirects the researcher to the summary page. 9. The system presents the summary information to the researcher. | | |
| **Alternative flows:** | In step 6 of the normal flow, if any file has been already imported:  1. The system adds the new file(s) to the already imported files.  2. The systems computes the new summary. | | |
| **Exceptions:** | In step 6 of the normal flow, if any file is already imported, it should be ignored.  1. The system verifies that the file was already imported.  2. The systems skips the existent file.  In step 6 of the normal flow, if any file is in the wrong format, it should be ignored.  1. The system verifies that the file has the right format.  2. The systems skips the wrong file. | | |
| **Requirements:** | The following requirements must be met before execution of the use case:  N/A | | |

## Use case 3: Start analysis

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| --- | --- | --- | --- |
| **Name of Use Case:** | **Start analysis** | | |
| **Created by:** | **Leandro Gabriel** | **Last updated by:** | **Leandro Gabriel** |
| **Date created:** | **2021/02/23** | **Last revision date:** | **2021/02/23** |
| **Description:** | ABC Corp. buyer submits material order to one of a pre-approved list of material vendors | | |
| **Actors:** | Researcher | | |
| **Preconditions:** | 1. Researcher has acquired the video files from microscope. 2. The video analysis was performed in ImageJ, using the Mosaic plugin. 3. The researcher has exported the video analysis results in CSV format. | | |
| **Postconditions:** | 1. Researcher is led to the summary page. 2. Researcher can perform analysis. | | |
| **Flow:** | 1. Researcher clicks the “Import data” button. 2. The system presents a dialog window for the researcher to select the file(s) to import. 3. The researcher selects one or more files. 4. The researcher clicks the “Ok” button on the dialog window. 5. The system reads the filename list provided by the dialog window. 6. The system imports all files, one by one. 7. The systems summarize the total trajectories and valid trajectories for each imported file. 8. The system redirects the researcher to the summary page. 9. The system presents the summary information to the researcher. | | |
| **Alternative flows:** | In step 6 of the normal flow, if any file has been already imported:  1. The system adds the new file(s) to the already imported files.  2. The systems computes the new summary. | | |
| **Exceptions:** | In step 6 of the normal flow, if any file is already imported, it should be ignored.  1. The system verifies that the file was already imported.  2. The systems skips the existent file.  In step 6 of the normal flow, if any file is in the wrong format, it should be ignored.  1. The system verifies that the file has the right format.  2. The systems skips the wrong file. | | |
| **Requirements:** | The following requirements must be met before execution of the use case:  N/A | | |

## Use case 4: View results

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Use Case:** | **View results** | | |
| **Created by:** | **Leandro Gabriel** | **Last updated by:** | **Leandro Gabriel** |
| **Date created:** | **2021/02/23** | **Last revision date:** | **2021/02/23** |
| **Description:** | ABC Corp. buyer submits material order to one of a pre-approved list of material vendors | | |
| **Actors:** | Researcher | | |
| **Preconditions:** | 1. Researcher has acquired the video files from microscope. 2. The video analysis was performed in ImageJ, using the Mosaic plugin. 3. The researcher has exported the video analysis results in CSV format. | | |
| **Postconditions:** | 1. Researcher is led to the summary page. 2. Researcher can perform analysis. | | |
| **Flow:** | 1. Researcher clicks the “Import data” button. 2. The system presents a dialog window for the researcher to select the file(s) to import. 3. The researcher selects one or more files. 4. The researcher clicks the “Ok” button on the dialog window. 5. The system reads the filename list provided by the dialog window. 6. The system imports all files, one by one. 7. The systems summarize the total trajectories and valid trajectories for each imported file. 8. The system redirects the researcher to the summary page. 9. The system presents the summary information to the researcher. | | |
| **Alternative flows:** | In step 6 of the normal flow, if any file has been already imported:  1. The system adds the new file(s) to the already imported files.  2. The systems computes the new summary. | | |
| **Exceptions:** | In step 6 of the normal flow, if any file is already imported, it should be ignored.  1. The system verifies that the file was already imported.  2. The systems skips the existent file.  In step 6 of the normal flow, if any file is in the wrong format, it should be ignored.  1. The system verifies that the file has the right format.  2. The systems skips the wrong file. | | |
| **Requirements:** | The following requirements must be met before execution of the use case:  N/A | | |

## Use case 5: Export results

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| --- | --- | --- | --- |
| **Name of Use Case:** | **Export results** | | |
| **Created by:** | **Leandro Gabriel** | **Last updated by:** | **Leandro Gabriel** |
| **Date created:** | **2021/02/23** | **Last revision date:** | **2021/02/23** |
| **Description:** | ABC Corp. buyer submits material order to one of a pre-approved list of material vendors | | |
| **Actors:** | Researcher | | |
| **Preconditions:** | 1. Researcher has acquired the video files from microscope. 2. The video analysis was performed in ImageJ, using the Mosaic plugin. 3. The researcher has exported the video analysis results in CSV format. | | |
| **Postconditions:** | 1. Researcher is led to the summary page. 2. Researcher can perform analysis. | | |
| **Flow:** | 1. Researcher clicks the “Import data” button. 2. The system presents a dialog window for the researcher to select the file(s) to import. 3. The researcher selects one or more files. 4. The researcher clicks the “Ok” button on the dialog window. 5. The system reads the filename list provided by the dialog window. 6. The system imports all files, one by one. 7. The systems summarize the total trajectories and valid trajectories for each imported file. 8. The system redirects the researcher to the summary page. 9. The system presents the summary information to the researcher. | | |
| **Alternative flows:** | In step 6 of the normal flow, if any file has been already imported:  1. The system adds the new file(s) to the already imported files.  2. The systems computes the new summary. | | |
| **Exceptions:** | In step 6 of the normal flow, if any file is already imported, it should be ignored.  1. The system verifies that the file was already imported.  2. The systems skips the existent file.  In step 6 of the normal flow, if any file is in the wrong format, it should be ignored.  1. The system verifies that the file has the right format.  2. The systems skips the wrong file. | | |
| **Requirements:** | The following requirements must be met before execution of the use case:  N/A | | |

## Use case 6: Change diffusivity parameters

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| --- | --- | --- | --- |
| **Name of Use Case:** | **Change diffusivity parameters** | | |
| **Created by:** | **Leandro Gabriel** | **Last updated by:** | **Leandro Gabriel** |
| **Date created:** | **2021/02/23** | **Last revision date:** | **2021/02/23** |
| **Description:** | ABC Corp. buyer submits material order to one of a pre-approved list of material vendors | | |
| **Actors:** | Researcher | | |
| **Preconditions:** | 1. Researcher has acquired the video files from microscope. 2. The video analysis was performed in ImageJ, using the Mosaic plugin. 3. The researcher has exported the video analysis results in CSV format. | | |
| **Postconditions:** | 1. Researcher is led to the summary page. 2. Researcher can perform analysis. | | |
| **Flow:** | 1. Researcher clicks the “Import data” button. 2. The system presents a dialog window for the researcher to select the file(s) to import. 3. The researcher selects one or more files. 4. The researcher clicks the “Ok” button on the dialog window. 5. The system reads the filename list provided by the dialog window. 6. The system imports all files, one by one. 7. The systems summarize the total trajectories and valid trajectories for each imported file. 8. The system redirects the researcher to the summary page. 9. The system presents the summary information to the researcher. | | |
| **Alternative flows:** | In step 6 of the normal flow, if any file has been already imported:  1. The system adds the new file(s) to the already imported files.  2. The systems computes the new summary. | | |
| **Exceptions:** | In step 6 of the normal flow, if any file is already imported, it should be ignored.  1. The system verifies that the file was already imported.  2. The systems skips the existent file.  In step 6 of the normal flow, if any file is in the wrong format, it should be ignored.  1. The system verifies that the file has the right format.  2. The systems skips the wrong file. | | |
| **Requirements:** | The following requirements must be met before execution of the use case:  N/A | | |

## Use case 7: Change analysis parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Use Case:** | **Change analysis parameters** | | |
| **Created by:** | **Leandro Gabriel** | **Last updated by:** | **Leandro Gabriel** |
| **Date created:** | **2021/02/23** | **Last revision date:** | **2021/02/23** |
| **Description:** | ABC Corp. buyer submits material order to one of a pre-approved list of material vendors | | |
| **Actors:** | Researcher | | |
| **Preconditions:** | 1. Researcher has acquired the video files from microscope. 2. The video analysis was performed in ImageJ, using the Mosaic plugin. 3. The researcher has exported the video analysis results in CSV format. | | |
| **Postconditions:** | 1. Researcher is led to the summary page. 2. Researcher can perform analysis. | | |
| **Flow:** | 1. Researcher clicks the “Import data” button. 2. The system presents a dialog window for the researcher to select the file(s) to import. 3. The researcher selects one or more files. 4. The researcher clicks the “Ok” button on the dialog window. 5. The system reads the filename list provided by the dialog window. 6. The system imports all files, one by one. 7. The systems summarize the total trajectories and valid trajectories for each imported file. 8. The system redirects the researcher to the summary page. 9. The system presents the summary information to the researcher. | | |
| **Alternative flows:** | In step 6 of the normal flow, if any file has been already imported:  1. The system adds the new file(s) to the already imported files.  2. The systems computes the new summary. | | |
| **Exceptions:** | In step 6 of the normal flow, if any file is already imported, it should be ignored.  1. The system verifies that the file was already imported.  2. The systems skips the existent file.  In step 6 of the normal flow, if any file is in the wrong format, it should be ignored.  1. The system verifies that the file has the right format.  2. The systems skips the wrong file. | | |
| **Requirements:** | The following requirements must be met before execution of the use case:  N/A | | |