# T.I. 3 APO

# Requirements Specification

### Functional Requirement 1

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| --- | --- | --- | --- |
| **Name or Identifier** | R1: Generate list with available mini rooms | | |
| **Summary** | The system should generate a list indicating the information of every available mini room in the Data Center. | | |
| **Inputs** | **Name of Input** | **Data type** | **Condition for selection or repetition** |
| N/A | N/A | N/A |
| **General Activities** | 1. Go over the data center matrix verifying the availability of the mini rooms. 2. Get the String value of every available mini room and join it in a String. 3. Return the list String to the User Interface and print it | | |
| **Result or Postcondition** | A list indicating the available mini rooms | | |
| **Outputs** | **Name of output** | **Data type** | **Condition for selection or repetition** |
| List of available mini rooms | String | If there are any available mini rooms |

### Functional Requirement 2

|  |  |  |  |
| --- | --- | --- | --- |
| **Name or Identifier** | R2: Rent a mini room | | |
| **Summary** | The system should allow the user to rent a mini room according to given data. | | |
| **Inputs** | **Name of Input** | **Data type** | **Condition for selection or repetition** |
| Location of mini room | String |  |
| Date of rent | LocalDate |  |
| Company name | String | If a regular company is the one renting the mini room |
| Company NIT | String | If a regular company is the one renting the mini room |
| Project number | String | If a mini room is rented with investigation purposes |
| Number servers to use | int |  |
| Cache memory of the server(s) | double |  |
| RAM of the server(s) | double |  |
| Number of processors of the server(s) | int |  |
| Number of disks of the server(s) | int |  |
| Total disk capacity of the server(s) in TeraBytes | double |  |
| Selection of the processor brand for the server(s) | int |  |
| **General Activities** | 1. Check that the data introduced by the user is complete and has no errors. 2. Check that the target mini room exists and is available for rent. 3. Determine if the rent value gets to have a recharge for server underutilization. 4. Store the mini room general information in the data center. 5. Ask for the server data and check that it is complete and has no errors. 6. Store the data of the servers according to the desired quantity. | | |
| **Result or Postcondition** | A rented mini room | | |
| **Outputs** | **Name of output** | **Data type** | **Condition for selection or repetition** |
| A rented mini room | MiniRoom | If it is available and the mini room location is valid |

### Functional Requirement 3

|  |  |  |  |
| --- | --- | --- | --- |
| **Name or Identifier** | R3: Cancel mini room rent | | |
| **Summary** | The system should allow the user to cancel the rent of a mini room that is already rented or cancel the rent of all the mini rooms. | | |
| **Inputs** | **Name of Input** | **Data type** | **Condition for selection or repetition** |
| Location of the mini room | String | N/A |
| **General Activities** | 1. Ask if the user wants to cancel the rent of a specific mini room, or for all the mini rooms. 2. According to the user’s decision, ask for the location of the mini room that is going to be rented and check its existence and if it is not rented. 3. Display the processing capacity of the mini room before cancelling the rent. 4. Cancel the rent of the mini room(s). | | |
| **Result or Postcondition** | A mini room or all the mini rooms with cancelled rent. | | |
| **Outputs** | **Name of output** | **Data type** | **Condition for selection or repetition** |
| Mini room(s) with cancelled rent | MiniRoom | If the user indicated an existent mini room or one that was already rented |

### Functional Requirement 4

|  |  |  |  |
| --- | --- | --- | --- |
| **Name or Identifier** | R4: Show data center map | | |
| **Summary** | The system should be able to show the map of the data center indicating the power state of the mini rooms. | | |
| **Inputs** | **Name of Input** | **Data type** | **Condition for selection or repetition** |
| N/A | N/A | N/A |
| **General Activities** | 1. Identify if the data center map to show will be the one of the power protocols or the regular one. 2. Print the data center map. | | |
| **Result or Postcondition** | The printed data center map. | | |
| **Outputs** | **Name of output** | **Data type** | **Condition for selection or repetition** |
| Map of the data center | String | N/A |

### Functional Requirement 5

|  |  |  |  |
| --- | --- | --- | --- |
| **Name or Identifier** | R5: Simulate the power on protocols of the data center | | |
| **Summary** | The system should simulate the powering on of the mini rooms disregarding the availability of the mini rooms. | | |
| **Inputs** | **Name of Input** | **Data type** | **Condition for selection or repetition** |
| N/A | N/A | N/A |
| **General Activities** | 1. Power all the mini rooms in a test matrix, on. | | |
| **Result or Postcondition** | Mini rooms in a test matrix powered on. | | |
| **Outputs** | **Name of output** | **Data type** | **Condition for selection or repetition** |
| N/A | N/A | N/A |

### Functional Requirement 6

|  |  |  |  |
| --- | --- | --- | --- |
| **Name or Identifier** | R6: Simulate the power off protocols of the data center | | |
| **Summary** | The system should simulate the powering off, of the mini rooms according to an input of the user. | | |
| **Inputs** | **Name of Input** | **Data type** | **Condition for selection or repetition** |
| Letter of pattern | char |  |
| Number of row or column | int | If the user selected a “M” or “P” protocol |
| **General Activities** | 1. Identify the pattern defined by the introduced letter. 2. Go over the matrix defining the selected pattern by powering certain rooms off. | | |
| **Result or Postcondition** | Mini rooms in a test matrix powered off in a certain way. | | |
| **Outputs** | **Name of output** | **Data type** | **Condition for selection or repetition** |
| N/A | N/A | N/A |