

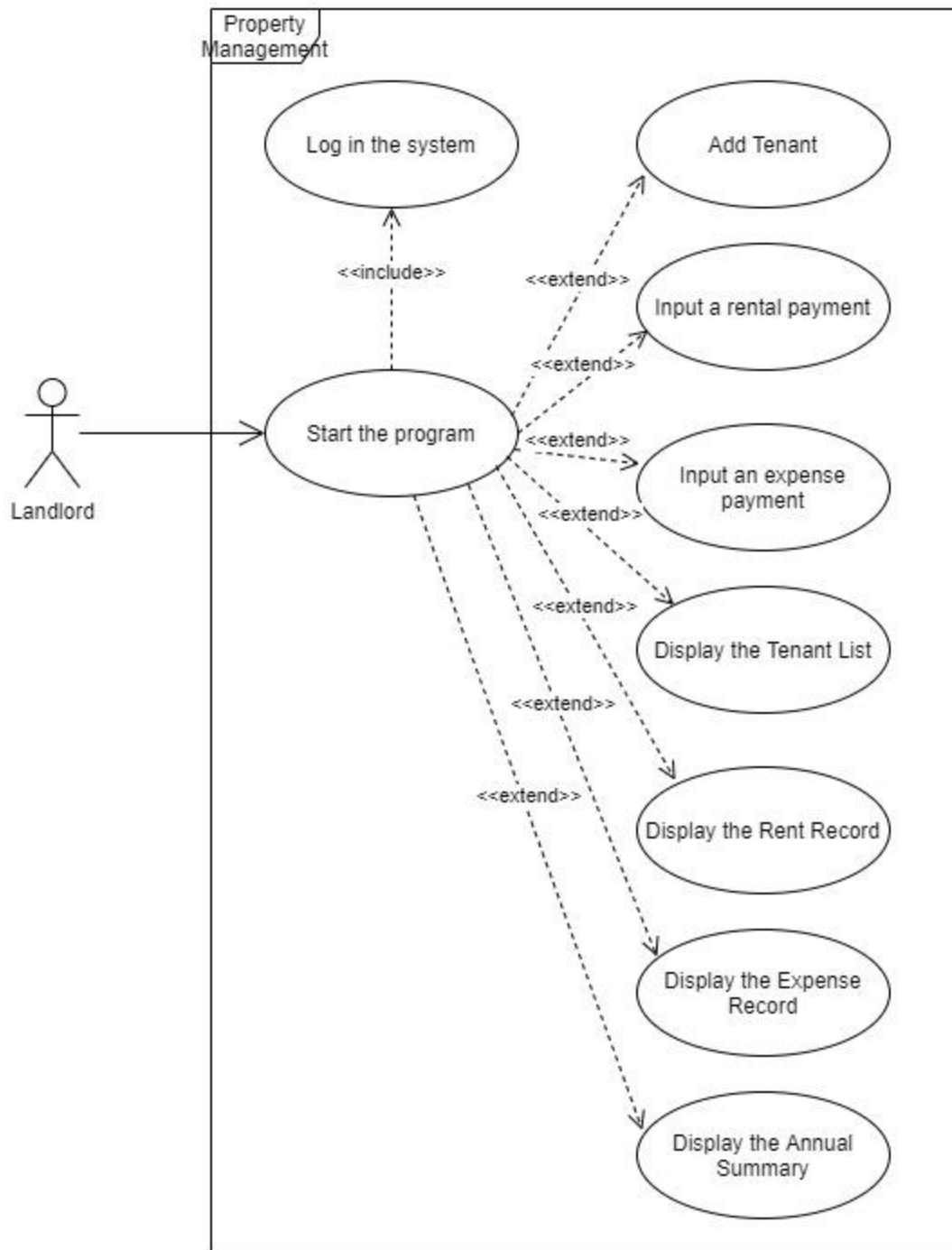
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Activity 2: Use Cases

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Use Case Diagram

Use case number	1
Use case name	Log in the system
Summary	Log in the system provides a basic user interface that allows the landlord to log in to their property management bookkeeping system. This is primarily meant for a landlord to keep a record of all business transactions.
Actor	Landlord
Precondition	<ol style="list-style-type: none"> 1. The landlord started the system. 2. Login Username/Password not officially entered into the system
Scenario	<ol style="list-style-type: none"> 1. The system prompts the landlord for their Username. 2. Landlord enters their Username. 3. The system prompts the landlord for their Password. 4. Landlord enters their Password to validate their Username.
Exception	<ol style="list-style-type: none"> 1. If the landlord enters an invalid Username, the system outputs a message and loops to scenario step 1. 2. If the landlord enters a valid Username with an invalid Password, the system outputs a message and loops to scenario step 1.
Postcondition	<ol style="list-style-type: none"> 1. The system outputs a message confirming successful login. The system advances to use case 2, Start the program.
Non-Functional	<ol style="list-style-type: none"> 1. Login fails if the landlord enters an invalid Username 2. Login fails if the landlord enters an invalid Password 3. The system is not ready if the landlord did not start the system to begin the login process.

Use case number	2
Use case name	Start the program
Summary	Start the program is the primary system user interface that outputs the main menu and prompts the landlord to choose a task to perform.
Actor	Landlord
Precondition	<ol style="list-style-type: none"> 1. The landlord must enter valid login information to pass use case 1 before accessing the main menu.
Scenario	<ol style="list-style-type: none"> 1. The system displays a menu list of possible inputs to the landlord. 2. The landlord types a specified input if they want to enter data, or 3. The landlord types a specified input if they want to output data, or 4. The landlord types a specified input to log out.
Exception	<ol style="list-style-type: none"> 1. The landlord chooses an invalid choice after being given the list of valid options. The system outputs an error message to try again and returns to scenario step 2.
Postcondition	<ol style="list-style-type: none"> 1. If the landlord selects Add new tenant, go to use case 3 2. If the landlord selects Input a rental payment, go to use case 4 3. If the landlord selects Input an expense payment, go to use case 9 4. If the landlord selects Display the Tenant List, go to use case 5 5. If the landlord selects Display the Rent Record, go to use case 6 6. If the landlord selects Display the Expense Record, go to use case 7 7. If the landlord selects Display the Annual Summary, go to the use case 8. 8. If the landlord selects Logout, the system logs out and goes back to use case 1.
Non-Functional	<ol style="list-style-type: none"> 1. This use case is non-functional only when the landlord enters an invalid input into the console.

Use case number	3
Use case name	Add new tenant
Summary	The system provides a user interface for adding a new tenant and maintains a Tenant List automatically sorted by apartment number.
Actor	Landlord
Precondition	A new tenant has signed a lease and paid their security deposit.
Scenario	<ol style="list-style-type: none"> 1. The system prompts the landlord to enter the tenant's name. 2. The system prompts the landlord to enter the apartment number. 3. If the apartment is occupied, the system outputs the current tenant's name and prompts the landlord to confirm they want to replace them. If not, the system returns to use case 2, Start the program. 4. The system outputs the new tenant's name and apartment number.
Exception	<ol style="list-style-type: none"> 1. No tenant name entered. The system returns to use case 2, Start the program. 2. No apartment number entered. The system returns to use case 2, Start the program. 3. Invalid apartment number entered. The system outputs an error message, displays a sorted list of valid apartment numbers, then re-prompts the Landlord.
Postcondition	<ol style="list-style-type: none"> 1. The system adds the new tenant and apartment number to the Tenant List automatically sorted by apartment number. 2. The system returns to use case 2, Start the program.
Non-Functional	This use case is always functional.

Use case number	4
Use case name	Input a rental payment
Summary	The system prompts the landlord to enter a rental payment with a month date for a specific tenant. The system records this data in the Rent Record.
Actor	Landlord
Precondition	The landlord added at least one tenant to the Tenant List with use case 3, Add new tenant.
Scenario	<ol style="list-style-type: none"> 1. The system prompts the landlord to enter the tenant's name. 2. The system prompts the landlord to enter the amount paid. 3. The system prompts the landlord to enter the rent month (1-12).
Exception	<ol style="list-style-type: none"> 1. The landlord already entered a rent payment for the same tenant and month. The system will output a message and prompt the landlord to overwrite the payment. If the landlord declines, the system returns to use case 2, Start the program.
Postcondition	<ol style="list-style-type: none"> 1. The system records the payment in the Rent Record. 2. The system returns to use case 2, Start the program.
Non-Functional	<ol style="list-style-type: none"> 1. Possibility of receiving no payment. 2. A payment may be overdue.

Use case number	5
Use case name	Display the Tenant List
Summary	The system outputs the Tenant List ordered by apartment number.
Actor	Landlord
Precondition	The landlord added at least one tenant to the Tenant List with use case 3, Add new tenant.
Scenario	<ol style="list-style-type: none"> 1. If the Tenant List is non-empty, the system outputs a header line, then a numbered Tenant List. Each row of the Tenant List contains an apartment number and the tenant's name. It is sorted by apartment number.
Exception	<ol style="list-style-type: none"> 1. If the Tenant List is empty, the system outputs a message to inform the Landlord.
Postcondition	<ol style="list-style-type: none"> 1. System returns to use case 2, Start the program.
Non-Functional	This use case is non-functional when the Tenant List is empty.

Use case number	6
Use case name	Display the Rent Record
Summary	The system outputs all of the rental records containing an apartment number and the amount paid by the tenant for each month. All information displayed will be based on Use Case 4.
Actor	Landlord
Precondition	The landlord has a clean slate record and must input records to show that a tenant has paid. Otherwise, the program will return 0 for each month.
Scenario	<ol style="list-style-type: none"> 1. If the payment list for any specific tenant has information inputted, the system will print out all information regarding a tenant based on their apartment number and display each payment, each separated by month
Exception	<ol style="list-style-type: none"> 1. Only exception is if a specified tenant does not exist or no tenants in the apartment. Therefore there will be no records of anything
Postcondition	<ol style="list-style-type: none"> 1. System prints apartment numbers and monthly payments from January-December. 2. System returns to Use Case 2, Start the Program
Non-Functional	The use case is non-functional when the tenant list is empty.

Use case number	7
Use case name	Display the Expense Record
Summary	The system outputs all of the expense records containing the month, day, payee, amount, and budget category in their respective rows.
Actor	Landlord
Precondition	The landlord has at least one payee in the system with all necessary information. Otherwise, the system will return 0.
Scenario	<ol style="list-style-type: none"> 1. Landlord selects 'Display Expense Record'. 2. If there is at least one payee with the necessary information, the system will print the expense record (month, day, payee, amount, budget category) in respective rows. Multiple payees will have their own columns.
Exception	<ol style="list-style-type: none"> 1. Exception if there are no payees in the system, then the system returns 0
Postcondition	<ol style="list-style-type: none"> 1. System prints Expense record (month, day, payee, amount, budget category) 2. System returns to use case 2, Start the Program
Non-Functional	The use case is non-functional when the expense record (payee list) is empty.

Use case number	8
Use case name	Display the Annual Summary
Summary	The system will output a report that shows the annual summary across the sum of all rents paid for the year to date, a list of expenses for each budget category, and a resulting balance.
Actor	Landlord
Precondition	All necessary records are available to display for the year to date.
Scenario	<ol style="list-style-type: none"> 1. Landlord selected 'Display Annual Summary' 2. The system will display the annual summary <ol style="list-style-type: none"> a. Starting with the sum of all rents b. List of expenses c. Resulting balance
Exception	<ol style="list-style-type: none"> 1. No dates outside the year to date are included.
Postcondition	<ol style="list-style-type: none"> 1. The landlord receives an annual summary report to date of rents, expenses, and the resulting balance of the apartment(s). 2. System returns to use case 2, Start the program.
Non-Functional	This use case is always functional.

Use case number	9
Use case name	Input an expense payment
Summary	The system provides a user interface for inputting an expense payment and maintains an Expense Record automatically sorted by month then day.
Actor	Landlord
Precondition	The landlord has a new paid expense to input into the system.
Scenario	<ol style="list-style-type: none"> 1. The system prompts the landlord to enter the payment month (1-12). 2. The system prompts the landlord to enter the payment day (1 to the number of days in the payment month, assuming the current year). 3. The system prompts the landlord to enter the payee's name. 4. The system prompts the landlord to enter the payment amount. 5. The system prompts the landlord to enter the budget category. 6. The system outputs the information entered by the landlord.
Exception	<ol style="list-style-type: none"> 1. If payment month, payment day, payee name, payment amount, or budget category is not entered, then the system returns to use case 2, Start the program. 2. Invalid payment month, payment day, or payment amount. The system outputs a specific error message, then re-prompts the landlord. 3. Unrecognized budget category entered. The system outputs a sorted list of existing budget categories, then prompts the landlord to select one from the list or add this new category.
Postcondition	<ol style="list-style-type: none"> 1. The system adds the payment month, payment day, payee name, payment amount, and budget category to the Expense Record automatically sorted by payment month then payment day. 2. System returns to use case 2, Start the program.
Non-Functional	This use case is always functional.