

# Property Management System

## Deliverable 7: Testing Document

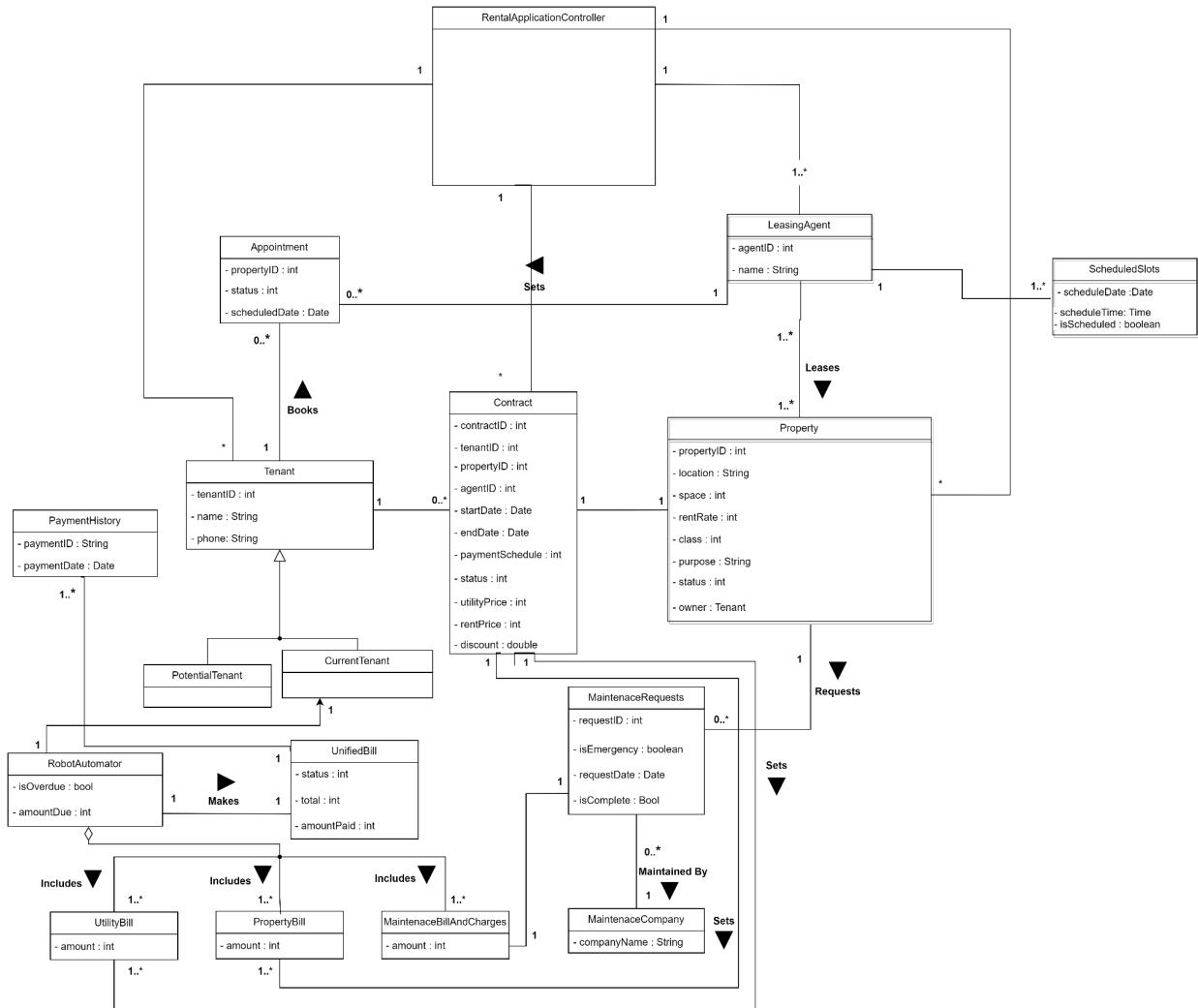
**COE 420 Software Engineering**  
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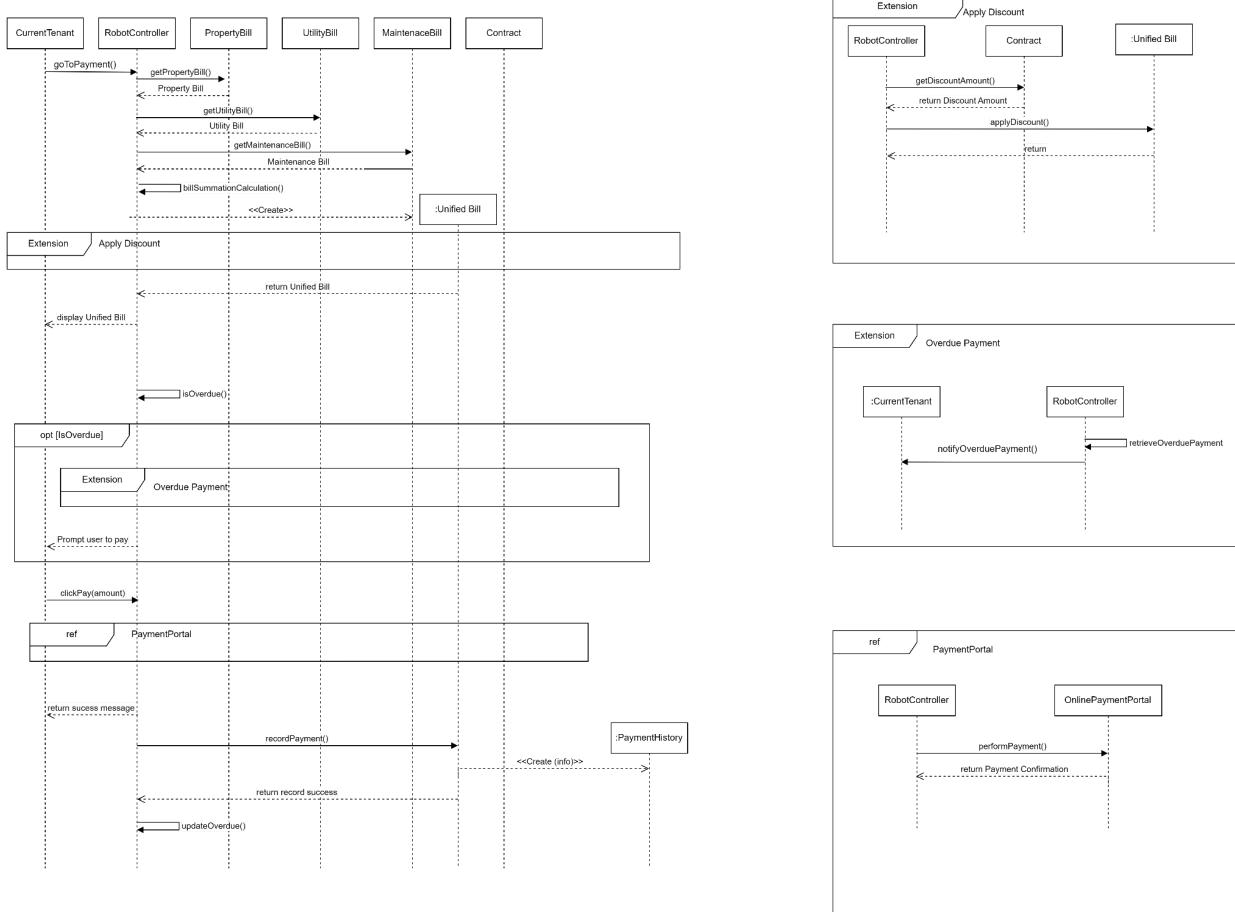
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## Updated Domain Model



## Updated Sequence Diagram



## Blackbox Testing

### Equivalence Partitioning With Boundary Value Analysis (BVA)

<u>Conditions</u>	<u>Valid Partitions</u>	<u>Tags</u>	<u>Invalid Partitions</u>	<u>Tags</u>	<u>Valid boundaries</u>	<u>Tags</u>	<u>Invalid boundaries</u>	<u>Tags</u>
Payment Amount	>0 ≤100000 — Valid characters (double)	V1 V2 V3	≤0 <100000 — Invalid Characters (non-number characters)	X1 X2 X3	1 100000	B1 B2	0 100001	D1 D2
Overdue	True False	V4 V5	Value is null	X4	—	—	—	—

### BlackBox Test Cases

Test Cases	Description	Expected Outcome	Errors	Tags Covered
1	Amount: 5 Overdue: True	Accepted Payment	N/A	V1, V2, V3, V4
2	Amount: 1 Overdue: True	Accepted Payment	N/A	V1, V2, V3, V4, B1
3	Amount: 100000 Overdue: False	Accepted Payment	N/A	V1, V2, V3, V4, B2
4	Amount: -1 Overdue: True	Invalid Amount	Cannot be negative amount	X1, V4
5	Amount: 100001 Overdue: False	Invalid Amount	Cannot be amount greater than 100,000	X2, V5, D2
6	Amount: 0 Overdue: True	Invalid Amount	Amount cannot be 0	X3, V4, D1
7	Amount: 0 Overdue: Null	Invalid Amount	Overdue has an error (value is null)	X4
8	Amount: a Overdue: True	Invalid Amount	Value must be a number	X3, V4

## Whitebox Testing

### Multiple Condition Coverages (MCC):

#### Criterion:

1. Payment Amount
2. Overdue

Test Case Number	Payment Amount	Overdue	Payment Made	Error States
1	Yes	Yes	Yes	No
2	Yes	No	No	Yes
3	No	Yes	No	Yes
4	No	No	No	Yes

Please Note: When Overdue is “Yes”, that implies that it is valid, meaning it could be yes or no. If Overdue is “No”, that means that it is null for a certain reason.



## Entry/Exit Criterion

<u>Entry</u>	<u>Exit</u>
User selects the “Make Payment” Button	User is taken from the Main Menu to the Payment Page
User selects “Pay” Button	User is taken from the Payment Page to the Payment Portal
User enters amount and presses “Pay” Button	Pop shows that the user has successfully filed a payment and the payment history updates
User presses “View Payment History”	A new frame shows all the previous payments done by the user
User presses “Check Overdue”	System checks the current time to see if the payment is overdue or not

## Definitions

### Valid Data:

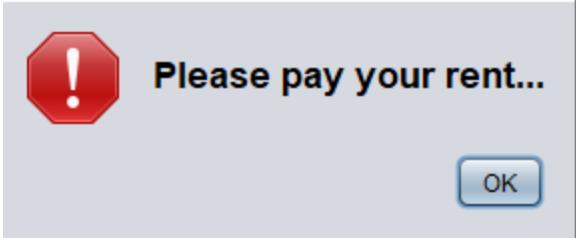
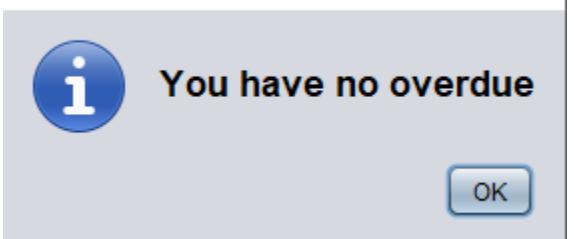
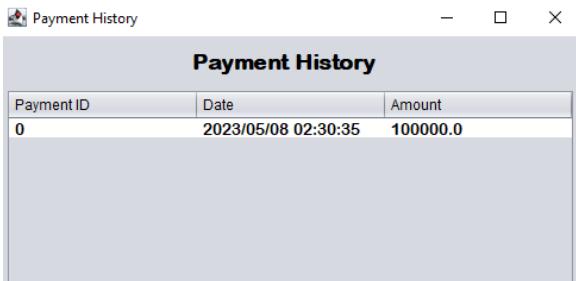
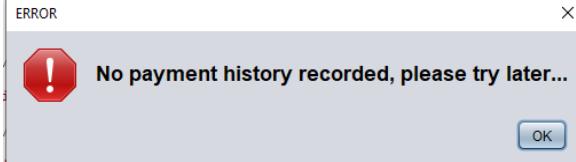
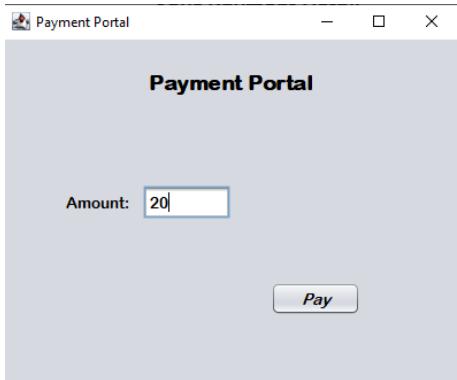
- Input for payment should be between 1 and 100,000.
- Payment History can only be viewed if payment has been previously made
- Overdue status will change to “Overdue” once the current time passes the end Date assigned.

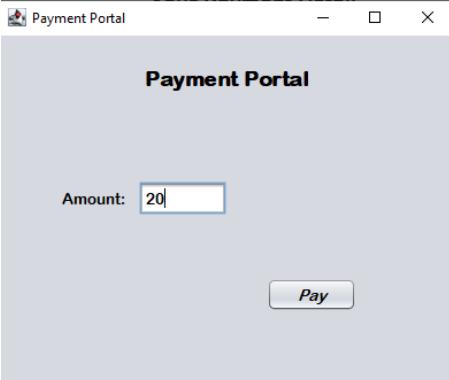
## Component/Interface Testing

<u>Components</u>	<u>Testing</u>	<u>Reason</u>
“Make Payment” JButton	Valid	Leads to Payment Frame
“Pay” JButton	Valid	Leads to Payment Portal
“Check Overdue” JButton	Valid	DIsplays Overdue JMessage _____ Display Not Overdue JMessage
“Show Payment History” JButton	Valid	Displays Payment History Page _____ Displays error message if empty
“Pay” Confirmation JButton	Valid	Displays confirmation message
AmountPaid Text Field	Valid	Confirmation Message _____ Incorrect Input

Please Note: Test Cases can be seen in Figures Below

Test Case	Component Test / Description	Testing for Expected Outcome (Interface)																
“Make Payment” JButton	<p style="text-align: center;"><b>Main Menu</b></p> <p>Welcome, Bing</p> <p style="text-align: center;"><b>Make Payment</b></p>	<p style="text-align: center;"><b>Your Payment Detail</b></p> <p>Your dues:</p> <table> <tbody> <tr><td>Utility fees:</td><td>400</td></tr> <tr><td>Maintenance fees:</td><td>150</td></tr> <tr><td>Property fees:</td><td>20000</td></tr> <tr><td>Discount:</td><td>0.9</td></tr> <tr><td>Total:</td><td>20550.0</td></tr> <tr><td>Total (with discount):</td><td>18550.0</td></tr> <tr><td>AmountPaid:</td><td>0.0</td></tr> <tr><td>AmountDue:</td><td>18550.0</td></tr> </tbody> </table> <p style="text-align: center;"><b>Check Overdue</b></p> <p style="text-align: center;"><b>Show Payment History</b>      <b>Pay</b></p>	Utility fees:	400	Maintenance fees:	150	Property fees:	20000	Discount:	0.9	Total:	20550.0	Total (with discount):	18550.0	AmountPaid:	0.0	AmountDue:	18550.0
Utility fees:	400																	
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Total:	20550.0																	
Total (with discount):	18550.0																	
AmountPaid:	0.0																	
AmountDue:	18550.0																	
“Pay” JButton	<p style="text-align: center;"><b>Your Payment Detail</b></p> <p>Your dues:</p> <table> <tbody> <tr><td>Utility fees:</td><td>400</td></tr> <tr><td>Maintenance fees:</td><td>150</td></tr> <tr><td>Property fees:</td><td>20000</td></tr> <tr><td>Discount:</td><td>0.9</td></tr> <tr><td>Total:</td><td>20550.0</td></tr> <tr><td>Total (with discount):</td><td>18550.0</td></tr> <tr><td>AmountPaid:</td><td>0.0</td></tr> <tr><td>AmountDue:</td><td>18550.0</td></tr> </tbody> </table> <p style="text-align: center;"><b>Check Overdue</b></p> <p style="text-align: center;"><b>Show Payment History</b>      <b>Pay</b></p>	Utility fees:	400	Maintenance fees:	150	Property fees:	20000	Discount:	0.9	Total:	20550.0	Total (with discount):	18550.0	AmountPaid:	0.0	AmountDue:	18550.0	<p style="text-align: center;"><b>Payment Portal</b></p> <p>Amount: <input type="text"/></p> <p style="text-align: center;"><b>Pay</b></p>
Utility fees:	400																	
Maintenance fees:	150																	
Property fees:	20000																	
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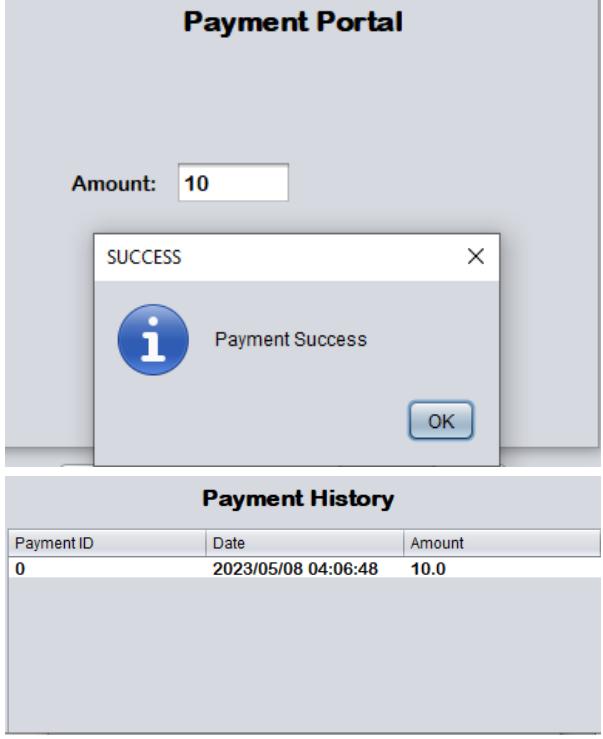
<p>“Check Overdue” JButton</p>	<p><b>Your Payment Detail</b></p> <p>Your dues:</p> <table border="0"> <tr><td>Utility fees:</td><td>400</td></tr> <tr><td>Maintenance fees:</td><td>150</td></tr> <tr><td>Property fees:</td><td>20000</td></tr> <tr><td>Discount:</td><td>0.9</td></tr> <tr><td>Total:</td><td>20550.0</td></tr> <tr><td>Total (with discount):</td><td>18550.0</td></tr> <tr><td>AmountPaid:</td><td>0.0</td></tr> <tr><td>AmountDue:</td><td>18550.0</td></tr> </table> <p><b>Check Overdue</b>      <b>Show Payment History</b>      <b>Pay</b></p>	Utility fees:	400	Maintenance fees:	150	Property fees:	20000	Discount:	0.9	Total:	20550.0	Total (with discount):	18550.0	AmountPaid:	0.0	AmountDue:	18550.0	<p>Overdue</p>  <p>Congrats</p> 
Utility fees:	400																	
Maintenance fees:	150																	
Property fees:	20000																	
Discount:	0.9																	
Total:	20550.0																	
Total (with discount):	18550.0																	
AmountPaid:	0.0																	
AmountDue:	18550.0																	
<p>“Show Payment History” JButton</p>	<p><b>Your Payment Detail</b></p> <p>Your dues:</p> <table border="0"> <tr><td>Utility fees:</td><td>400</td></tr> <tr><td>Maintenance fees:</td><td>150</td></tr> <tr><td>Property fees:</td><td>20000</td></tr> <tr><td>Discount:</td><td>0.9</td></tr> <tr><td>Total:</td><td>20550.0</td></tr> <tr><td>Total (with discount):</td><td>18550.0</td></tr> <tr><td>AmountPaid:</td><td>0.0</td></tr> <tr><td>AmountDue:</td><td>18550.0</td></tr> </table> <p><b>Check Overdue</b>      <b>Show Payment History</b>      <b>Pay</b></p>	Utility fees:	400	Maintenance fees:	150	Property fees:	20000	Discount:	0.9	Total:	20550.0	Total (with discount):	18550.0	AmountPaid:	0.0	AmountDue:	18550.0	 <p>ERROR</p> 
Utility fees:	400																	
Maintenance fees:	150																	
Property fees:	20000																	
Discount:	0.9																	
Total:	20550.0																	
Total (with discount):	18550.0																	
AmountPaid:	0.0																	
AmountDue:	18550.0																	
<p>“Pay” Confirmation JButton</p>		<p>SUCCESS</p> 																

AmountP aid Text Field	 <p>Payment Portal</p> <p>Payment Portal</p> <p>Amount: <input type="text" value="20"/></p> <p><b>Pay</b></p>	<p>SUCCESS</p> <p> Payment Success</p> <p><b>OK</b></p> <p>ERROR</p> <p> Error: Amount must be Decimal or Integer Value..</p> <p><b>OK</b></p> <p>ERROR</p> <p> Error: Amount must be within the limit of 1 and 100,000..</p> <p><b>OK</b></p>
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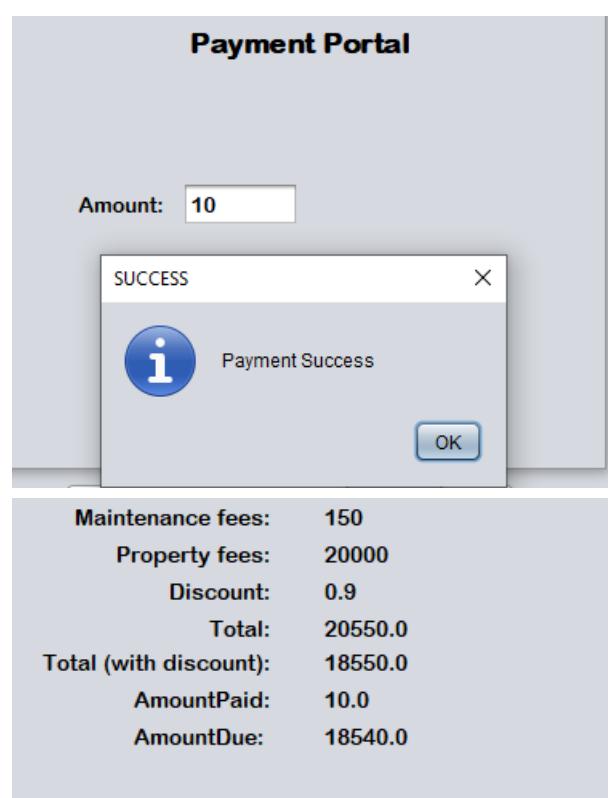
## Integration Testing

Communication	Relationship
Payment Confirm Button and Payment History	Once the Payment Confirm Button is pressed, then it will be recorded and saved in Payment History
Payment Confirm Button and AmountDue / AmountPaid	Once Payment Confirm Button is pressed, the AmountDue and AmountPaid will be updated
Payment Confirm Button and Overdue	Once Payment Confirm Button is pressed, Overdue status will be updated

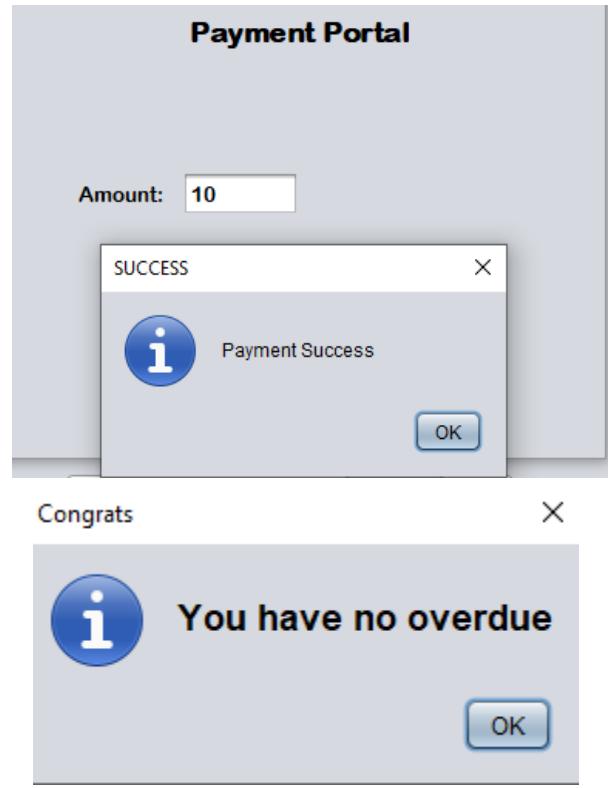
Please Note: Test Cases can be seen in Figures Below

Communication Test Case	Testing for Expected Outcome (Interface)						
Payment Confirm Button and Payment History	 <p>The screenshot shows a 'Payment Portal' window. At the top, there is a text input field labeled 'Amount:' containing the value '10'. A modal dialog box is displayed, titled 'SUCCESS' with a blue information icon, stating 'Payment Success'. There is an 'OK' button at the bottom right of the modal. Below the portal window, there is a separate 'Payment History' section with a table:</p> <table border="1"> <thead> <tr> <th>Payment ID</th> <th>Date</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2023/05/08 04:06:48</td> <td>10.0</td> </tr> </tbody> </table>	Payment ID	Date	Amount	0	2023/05/08 04:06:48	10.0
Payment ID	Date	Amount					
0	2023/05/08 04:06:48	10.0					

Payment Confirm Button and AmountDue /  
AmountPaid



Payment Confirm Button and Overdue

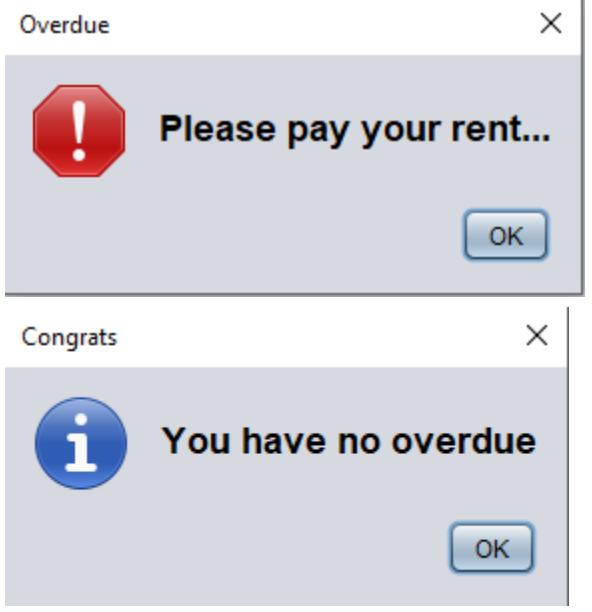
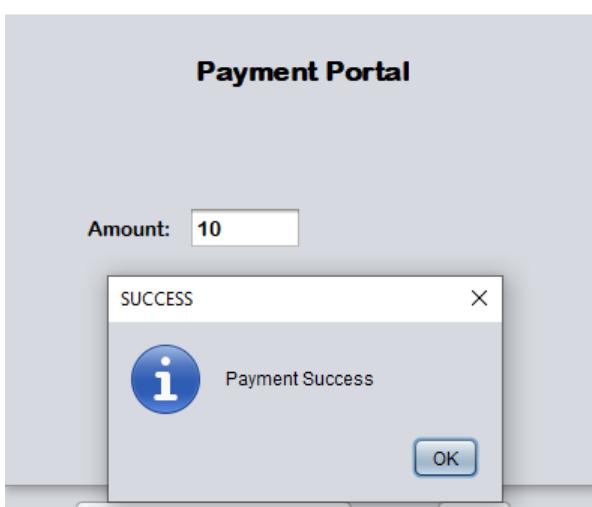


## System Testing

Case	Functional / Non-Functional
Viewing Unified Bill	Functional
Viewing Overdue Status on Payment	Functional
Making Payment	Functional
Preventing out of bounds payment	Non-Functional

Please Note: Test Cases can be seen in Figures Below

Test Case	Testing for Expected Outcome (Interface)																
Viewing Unified Bill	<p style="text-align: center;"><b>Your Payment Detail</b></p> <p>Your dues:</p> <table> <tbody> <tr> <td>Utility fees:</td> <td>400</td> </tr> <tr> <td>Maintenance fees:</td> <td>150</td> </tr> <tr> <td>Property fees:</td> <td>20000</td> </tr> <tr> <td>Discount:</td> <td>0.9</td> </tr> <tr> <td>Total:</td> <td>20550.0</td> </tr> <tr> <td>Total (with discount):</td> <td>18550.0</td> </tr> <tr> <td>AmountPaid:</td> <td>0.0</td> </tr> <tr> <td>AmountDue:</td> <td>18550.0</td> </tr> </tbody> </table> <p style="text-align: center;"> <input type="button" value="Check Overdue"/>           <input type="button" value="Show Payment History"/>           <input type="button" value="Pay"/> </p>	Utility fees:	400	Maintenance fees:	150	Property fees:	20000	Discount:	0.9	Total:	20550.0	Total (with discount):	18550.0	AmountPaid:	0.0	AmountDue:	18550.0
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Viewing Overdue Status on Payment	
Making Payment	
Preventing out of bounds payment	