

De La Salle University

College of Computer Studies

Software Technology Department

**Casa Acaling Dormitory System (CADS)**

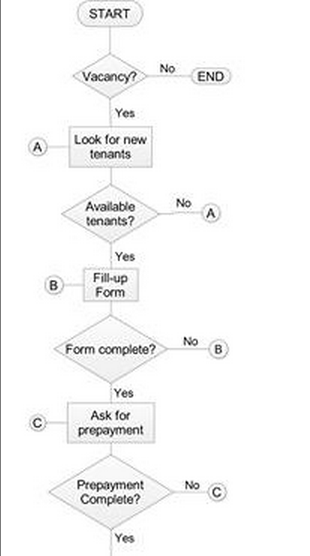
PROBLEM ANALYSIS

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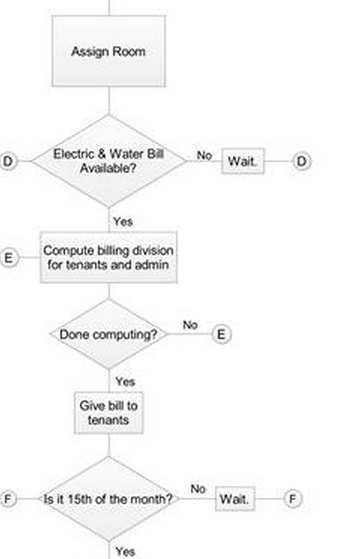
1. **Executive Summary**

*Casa Acaling is a privately owned co-ed dormitory located in Banga, Aklan. It’s a three building dorm which has a total of 55 rooms. Amenities like a common kitchen, a dining area, and a receiving area for guests are also available. It is a safe place for students to live in because it is well guarded. It is an ideal place for students from the Province of Aklan or from other provinces as well because it is located just across Aklan State University. All of the rooms cater to the needs of the students that are living independently and are on a budget.*

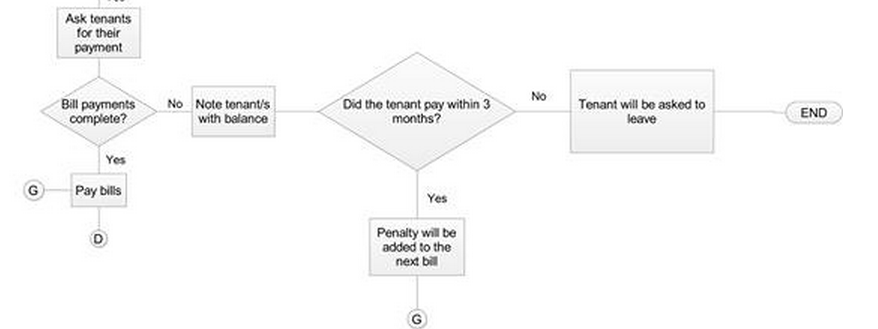
*It is a home away from home for its dormers. The environment is very family oriented. Annual activities like Welcoming and Christmas parties are held so that the dormers would feel like they never left their homes. The management ensures the best stay that they can give to their dormers.*

1. **Overview of the Business Process**

Continuation:



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1. **Problem Analysis**

| **ID** | **Description** | **Cause** | **Symptoms** | **Impact** |
| --- | --- | --- | --- | --- |
| # | What’s the problem? | What causes the problem? | How do we know the problem exists? | Why is this important? What are the consequences? |
| *1* | *Miscalculated Bills* | *Lack of bill computing system that would be able to compute the bills without error.* | *The bills received by the tenants do not match the readings of their respective meters.* | *Loss of Revenue* |
| *2* | *Owner is unsure whether the dormer is in or out of the dormitory* | *Lack of Attendance Logging System* | *Whenever there are calls, the owner has to go directly to the dormer’s room just to check if he/she’s there or not* | *Maximum security of the dormers is not met.* |
| *3* | *Disorganized Room Assignment* | *Admin assigns dormers to rooms that are already occupied because there are too many physical forms to look at.*  *Process of searching for vacant rooms is slow.* | *Over accepting of tenants*  *Over assignment of tenants into dorms* | *Loss of the revenue and customers* |
| *4* | *Information about the tenant is difficult to retrieve. (Contact number, address, course, year of graduation)* | *Lack of Organized System*  *Documents are paper based.* | *Admin cannot find the information of the tenants needed in the business process* | *Slow Service*  *Unreliable Information* |

*The client’s problem is generally because of manual recording. The client does not have a virtual copy of the records, thus making it difficult for the management to retrieve the data when time calls for it. The software will be able to store data for future access. This data can be further used to automatically compute the bills and track the available slots. The results will offer better reliability.*

1. **Software Objectives**

*The Casa Acaling Dormitory System aims to assist the administrator in managing the dormitory. It stores the necessary information about the tenants. It helps the administrator in room assignments and computing the electrical, water and rental bills for each room. It checks whether the tenant is in or out of the dormitory. And it generates reports like the projection of possible availability of rooms and outstanding balances of the tenants. Basically, the software’s goal is to ease the administrator’s work and make the business process centralized and automated.*

*The specific objectives of the software are as follows:*

* *To store the data about the tenants, rooms and bills in a database system. So that the information will be centralized.*
* *To be able to view the information of the tenant*
* *To assign tenants to rooms*
* *To keep track of room assignments*
* *To compute the bill of each room.*
* *To monitor tenant/s' status if in or out of the dormitory.*
* *To inform the administrator if a tenant has paid or not.*
* *To monitor vacancy of room for new tenant/s.*

1. **Requirement Specification**

**5.1 User Stories, Tasks, and Scenarios**

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| **User Story 1:** The admin adds the information of the tenants so that they can retrieve the information that they need. | |
| Estimate (Days): 6 | Priority: 180 |
| Scenarios:  Preconditions:   * The admin is on the tenant module of the system. * The admin has already chosen to add the tenant  1. The admin inputs the information that the tenants wrote on the information sheet into the system. 2. The admin submits the information to the system. 3. The system validates the information. 4. The system verifies if the information that is written is correct. 5. The admin confirms the information of the tenant. 6. The system stores the information to the database.   Post conditions:   * The system now contains the information of the tenant. | |
| Acceptance Criteria:   1. Test if the system will only accept the correct information that is placed by the admin. 2. Test if the system verifies the information. 3. Test if the system successfully stores the information of the tenant. | |

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| **User Story 2:** The admin can view the contact information of the tenant’s guardian so that the admin knows whom to contact if something happened. | |
| Estimate (Days): 2 | Priority: 155 |
| Scenarios:  Preconditions:   * The system contains the guardians’ contact information. * The admin is in the tenant module of the system.  1. The admin searches the name of the tenant. 2. The system shows the name of tenant 3. The admin selects the view complete details button 4. The system shows the complete information of the tenant   Post conditions:   * Admin can access the contact information of the contact person. | |
| Acceptance Criteria:   1. Test if the system shows the correct information of the tenant’s guardian 2. Test if the system successfully searches for the name of the tenant. 3. Test if the system successfully displays the information. | |

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| **User Story 3:** The admin can edit the information of the tenants so that they can alter any information if needed. | |
| Estimate (Days): 4 | Priority: 160 |
| Scenarios:  Preconditions:   * The admin is in the tenant module of the system. * The information is already stored in the system.  1. The admin searches the tenant. 2. The admin select the tenant. 3. The admin edits the information of the tenant. 4. The admin submits the information to the system. 5. The system validates the information. 6. The system stores the information to the database.   Post conditions:  The system will now have the updated information of the tenant. | |
| Acceptance Criteria:   1. Test if the system accepts the correct input from the admin. 2. Test if the system verifies the information of the tenant. 3. Test if the system successfully stores the edited information of the tenant. 4. Test if the system successfully conducts the search. 5. Test if the system shows the edited information of the tenant | |

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| **User Story 4:** The admin assigns tenants to a room so that the admin can start the tenants’ bill cycle. | |
| Estimate (Days): 2 | Priority: 150 |
| Scenarios:  Preconditions:   * The information of the tenants is already stored in the database. * The admin is in the Room Module of the system.  1. The admin selects the name of the tenant 2. The system shows the available rooms in the dormitory. 3. The admin selects the room. 4. The system stores the room assignment.   Post conditions:   * The system now contains the room assignments of the tenants. | |
| Acceptance Criteria:   1. Check if the system will only show available rooms. 2. Check if the system has assigned the correct room to a tenant. 3. Check if the system verifies the room assignments. | |

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| **User Story 5:** The admin can view the list of tenants with their room assignments to be able to know who stays in what room. | |
| Estimate (Days): 1 | Priority: 140 |
| Scenarios:  Preconditions:   * The admin is in the tenant module of the system. * The system already contains the room assignment information.  1. The admin searches the name of the tenant. 2. The admin selects the name of the tenant. 3. The system shows the information about the tenant including the guardian’s contact number.   Post conditions:   * The admin would be able to see the list of who stays in what room. | |
| Acceptance Criteria:   1. Check if the system shows the correct room assignments | |

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| **User Story 6:** The admin can edit the price of the rooms to be able to update easily the bills of the tenants. | |
| Estimate (Days): 1 | Priority: 120 |
| Scenarios:  Preconditions:   * The admin should know the current price of the rooms and the new price to be implemented. * The admin should be in the Room Module of the system  1. The admin edits the price of the room. 2. The system stores the new price of the rooms.   Post conditions:   * The system now contains the current price of the room. | |
| Acceptance Criteria:   1. Test if the system shows the current price of the rooms. 2. Test if the system verifies the information that was entered. 3. Test if the system has successfully changed the price of the rooms by showing the new list. 4. Test if the system changes only the price of the room. | |

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| **User Story 7:** The admin can compute the bills per room based on the readings of the electricity and water meter to be able to immediately get the final value of the bills per room. | |
| Estimate (Days): 3 | Priority: 145 |
| Scenarios:  Preconditions:   * The admin already set the prices based on the bills given by the electricity and water providers. * The admin should know the total consumption based on the electric and water meter belongs per room. * The admin is in the Billing Feature of the system.  1. The admin chooses the room to bill. 2. The admin inputs the values that are needed. (electric meter reading, water meter reading) 3. The system verifies the information that has been entered. 4. The system computes for the final value of the bills. 5. The system shows the list of rooms with their corresponding bills.   Post conditions:   * Admin will be able to see the list of rooms with their bills that were computed by the system. | |
| Acceptance Criteria:   1. Test if the system will ask for all the values needed for the computation. 2. Check if the system will compute the bills correctly. 3. Check if the system will show the list of rooms with their bills after everything were computed. 4. Test if the system verifies the billing information. | |

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| **User Story 8:** The admin can view the list of tenants to be able to identify those who haven’t paid yet. | |
| Estimate (Days): 2 | Priority: 130 |
| Scenarios:  Preconditions:   * The bills have been computed already. * The system should contain the list of tenants who haven’t paid yet. * The admin is in the Report Module of the system.  1. The system shows the list of tenants that have bills due.   Post conditions:   * The admin would be able to see the list of tenants that haven’t paid yet. | |
| Acceptance Criteria:   1. Test if the system shows the correct list of tenants who have not yet paid. 2. Test if the system shows the correct amount and months that have not yet been paid. | |

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| **User Story 10:** The admin can keep track of the bills per person to be able to know which tenant would be billed with a penalty. | |
| Estimated (Days): 2 | Priority: 100 |
| Scenarios:  Preconditions:   * The system stores the list of tenants that have overdue bills. * The admin is in the Bills Module of the system.  1. The system shows the list of tenants and their corresponding balance. 2. The admin views the list of tenants who have a balance. 3. The system adds the penalty to those who haven’t paid.   Post conditions:   * The system contains the updated outstanding balance of the tenant | |
| Acceptance Criteria:   1. Check if the system would compute correctly the total bill per tenant with their surcharge. 2. Check if the system will successfully store the list of tenants with their updated bill. 3. Check if all the surcharges of all overdue tenants are added after the 15th of the month. | |

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| **User Story 11:** The tenants log in and log out so that the admin would know about their whereabouts. | |
| Estimated (Days): 1 | Priority: 70 |
| **Scenario:**  Preconditions:   * The tenant is in the tenant logging module of the system.   1. The system show a form for logging  2. The tenant inputs his Tenant ID and selects the going in or going out button.  5. The system records input of the tenant in the record log.  Post conditions:   * The admin can check the log for tenant’s presence in the dorm | |
| Acceptance Criteria:   1. Check if the system successfully recorded the tenant’s input into the log record. 2. Check if the system has the date and time of the logs 3. Check if the log records are verified and correct. 4. Check if the system stores the records properly. 5. Check if the log can be properly viewed by the admin in chronological order | |

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| **User Story 12:** The admin can view the logs of the tenants so that they could keep track of whether the tenants are in the dorm or not. | |
| Estimated (Days): 1 | Priority: 60 |
| Scenarios:  Preconditions:   * The admin is in the Admin Logging Module of the system * There should be an already existing log record   1. The system generates the list of logs of the tenants within the day  Post conditions:   * The system is displaying the login and logouts of the tenant | |
| Acceptance Criteria:   1. Check if the system displays the tenant logs. | |

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| **User Story 13:** The admin can see a list of tenants that are going to leave so that she can start advertising to get new tenants | |
| Estimated (Days): 1 | Priority: 90 |
| Scenarios:  Preconditions:   * The admin is in the Report Module of the system   1. The system generates the list of tenants that are expected to leave by the end of the term/year.  Post conditions:   * The admin will be able to see a list of graduating students and the total number of leaving tenants. | |
| Acceptance Criteria:   1. Check if the system gets the correct list of graduating tenants for the current academic term/year. 2. Test that the system properly informs the admin if there are no graduating tenants. | |

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| **User Story 14:** The admin can renew the contract of the user so that the tenant can extend his/her stay in the dormitory. | |
| Estimated (Days): 1 | Priority: 90 |
| Scenarios:  Preconditions:   * The admin is in the Report Module of the system  1. The system generates the list of tenants that are expected to leave by the end of the term/year. 2. The admin selects the tenant and renews their contract 3. The systems renews the contract of the tenant   Post conditions:   * The tenant’s contract is renewed. | |
| Acceptance Criteria:   1. Check if the system gets the correct list of graduating tenants for the current academic term/year. 2. Test if the system successfully renews the contract of the tenant. | |

**Appendix A – Interview Transcript**

**Date of Interview: June 17, 2014**

**Time: 8:30-10:00pm**

**Interviewee: Mrs. Lea Acaling Coloma, Owner of Casa Acaling**

**Venue: Coloma Residence**

*Group: Good Afternoon!*

*Lea: Hello! Good Afternoon!*

*Group: To start things off, can you describe what you business is?*

*Lea: Okay! Basically, it a dormitory located in Aklan. Para siya sa mga students ng Aklan State University kasi across the street lang yung dormitory so very accessible siya.*

*Group: Oh ok. So paano nammanage yung business kasi diba you live here in manila?*

*Lea: Yeah meron akong taong nagmmanage dun and nandoon din yung sister ko.*

*Group: So hindi ba mahirap yung pag-manage kahit malayo ka from the dormitory?*

*Lea: Hindi naman.*

*Group: Ok ok.*

*Lea: Oh so whats your question?*

*Group: Hahaha! Ok sige, what are the features that you want for the system?*

*Lea: Una, personal information ng mga dormers.*

*Group: Like what?*

*Lea: Like yung name, address, contact person - kung sino tatawagan incase na may mangyari or for whatever purpose. Yung course nila para malaman or ma-project kung how many number of years yung stay nila in the dorm, and year – kung what year na sila sa college.*

*Group: Okay.*

*Lea: And other information na you think na kailangan.*

*Group: Are there other information that you think na makakatulong sa inyo sa dorm?*

*Lea: Aside from that kung meron na rin kayo maiisaip na pwede ilagay. Kung ano ba dapat kailangan ko. Kayo mag-aautomate eh. So kayo ?*

*Group: Okay.*

*Lea: For me, yun lang naiisip ko. So help me kung meron pa kailangan na pwede for the system.*

*Group: Okay, sige. So there, as of now ito lang yung kailngan mo. Ito yung mga basic information about the dormer.*

*Lea: Pwede din ilagay diyan yung room number and others.*

*Group: Okay, sige. So yun yung first feauture na gusto mo. So yun second feature is?*

*Lea: Yung room assignment, diba pagopen ko palang ng program mapapakita na kung ano yung room number ng mga dormer.*

*Group: So yung sa room assignment, meron bang kinds – kung ilan sila sa room?*

*Lea: Yeah meron. Singe bed or may specification kung ilan gusto niya.*

*Group: Depende sa kanila kung ilan sila per room right?*

*Lea: Yes, basta in one room maximum 4. basta ang rate per room 4000. So bahala yung dormer kung mag-isa, or dalawa sila, or tatlo sila. So dapat macapture mo yung information na yan. Basta ang concern ko is dapat 4 thousand per room.*

*Group: Basta iddivide sa kanila yung 4000.*

*Lea: Yes.*

*Group: Paano inaasign yung room?*

*Lea: Iffill out muna ng mga single bed dormers ang isang room then If ever meron magrequest na gusto niya lang 2 per room. Iccheck pa kung meron din iba na may gusto na two per room.*

*Group: Okay. What’s the next feature that you want?*

*Lea: Yung billing system. Kasama doon yung water, electricity, and rent.*

*Group: How do you divide the bill? Kasi diba one bill lang naman dumadating for the whole dorm?*

*Lea: Yes, meron submeter per room para malaman kung magkano macconsume per room. Then the balance will go to the admin. That’s for the common areas. Like CR, hallway, eating area.*

*Group: Ah so kunwari 200 yung total tapos room A – 50 kilowatts, room B - 10 kilowatts..*

*Lea: Kunwari ang total consumption ng mga room is 190 kilowatts. So yung 10 kilowatts goes to the admin.*

*Group: Ah ok ok.*

*Lea: Yun yung common area usage*

*Group: Sa dorm ba mang gagaling yung price ng electricity?*

*Lea: What do you mean?*

*Group: Yung magkano yung price ng electricity. Like yung per kilowatts?*

*Lea: Ah! kasi diba yun habang lumalaki yung bill tumataas yug rate. Yung basis nun is yung meralco bill. yung total amount iddivide mo sa total.*

*Group: Total kilowatts na naconsume?*

*Lea: Oo para makuha yun how much per kilowatts. Kunwari sa room 1, 50 kilowatts siya so immultiply mo para makuha yung electricity bill for that room. Fair siya sa lahat . hindi ka lugi and hindi siya maoover charge.*

*Group: So yun total bill divded by the toatal kilowatts. Yung rice nay un yung immultiplty sa na consume na kilowatts per room? Sa tapos yun na yung mabbill sa kanila?*

*Lea: Yes, ganun na rin sa water. Same lang yung pagdivide*

*Group: So yung sa bills how do you divide it?*

*Lea: Depende sa preference ng per room. Meron dalawang kinds. First, they want na iddivide sa per dormer ng each room. Second, the whole bill yung ibibigay sa kanila tapos sila na bahal mag divide.*

*Group: Oh ok ok.*

*Lea: Yung cut off is every fifth of the month, kung lumampas siya doon. Masasama siya sa report or list. Tapos may penalty na rin siya. Madadagdagan yung amount ng bill niya automatically.*

*Group: Ok. Just to clarify, para macompute yung bill per room gagamitin yung meralco bill. Iddivide kung how much yun bill sa total kilowatts na consume para makuha ang rate per kilowatts.*

*Lea; Okay*

*Group: So yung price nay un immultiply sa na consume nila which is makikita sa submeter per room.*

*Lea: Yes.*

*Group: Okay okay. So the next feauture that you want is?*

*Lea: Yung parang time in and time out?*

*Group: Ah so parang logging?*

*Lea: Yeah parang ganun. Gusto ko lang malaman at anytime kung in or out siya – yung dormer.*

*Group: Okay.*

*Lea: Kasi like tumawag ang parent. “Nandyan ba si ano..” parang tatawagan nalang siya sa intercom na parang “ah you have a call”. Bababa siya. Alam mo na out siya like nasa school or wala siya. May monitoring dapat.*

*Group: Meron ba silang IDs for the dorm?*

*Lea: Wala*

*Group: Oh okay okay. So next na..*

*Lea: Uhmm ano pa ba?*

*Group: Reports?*

*Lea: Yung lang yun diba? Oo more or less yun na yun. Yung billing yung pinakacritical kasi doon nahihirapan. Ahh!! Sabi ko may report na mapproject na at the end of the year. How many students ang kulang na.*

*Group: Parang kung sino na aalis? Kung sino mavvacant. Kung what room mavvacant?*

*Lea: Vacant. Oo. Based from the course nila. Pero hindi ka naman sure, kasi pwede*

*Group: Magextend?*

*Lea: No, sometimes lang yun mangyari. Basta, yung mga ggraduate. Pero ang gusto ko is projection based sa course. Kung ilan yung graduatuing for that year. Para if ever na may vacant na makapagadvertise or makarecruit na ng bagong borders for the following year. Pwede ka na magaccept kasi minsan nagoover accept dahil hindi namin alam kung ilan ang kailangan.*

*Group: Okay okay. So yung report basically shows kung may mavvacant na room*

*Lea: Or Kahit hindi room. Kahit bed lang.*

*Group: Basta may magooen na slot. Okay!*

*Lea: Maffinalize mo lang yun at the end of the year but based from the year ng graduation.*

*Group: End of the school year diba?*

*Lea: Yung final nun. Pero like anytime pwede ko makita yun report na yun. Ilan kaya yung kakailanganin ko na borders next year? Pwede ko yun tiganan eh.*

*Group: Okay. Hindi na kailangan ng names right?*

*Lea: Hindi na. yun projected number lang ng aalis.*

*Group: Okay so yung features na gusto mo is yung personal information ng dormers*

*Lea: Yes*

*Group: Ilalagay din ditto yung nakaasign sa kanya na room. And kung gusto mo pwede narin ilangay yung outstanding balance niya.*

*Lea: Yeah okay pwede din yun.*

*Group: You want that?*

*Lea: Yes pagchineck ko yng name niya, kunwari Juan Paolo Coloma. Ah hindi pa nagbbayad to for may. Hindi ibig sabihin dun sa report na yun one moth lang siya ha? Possible yan minsan 2 months 3 months. Not necesaarily na 1 month.*

*Group: Basta yun naaccumulate na hindi pa nabayaran. Basta pending amount dito.*

*Lea: Tapos ipapakita mo kung anong mga month.*

*Group: Okay so month and amount. Okay so next is room assignment. Kung ilan silang magrrent per room.*

*Lea: Ittag mo lang doon kung bed or whole room. Paano mo ba maaindicate na isang room yung irrent nila? Not necessarily per room isa lang siya.*

*Group: When someone goes to you kunwari bed ikaw naman yun magaasign diba?*

*Lea: Oo tayo na magaasign.*

*Group: So baka pwede gawin is. Sa application niya palang is bed lang yun gusto niya.*

*Lea: Yeah, oo.*

*Group: So basically yun yung room assignment. Kung individual or whole room.*

*Lea: Yes.*

*Group: Yun next is bills. Kasama na yung water electricity, and rent*

*Lea: Kung meron kayong naisip na maimprove sa hinihingi ko na ito based sa pagpprogram niyo or sa pagddesign niyo iinform niyo lang ako baka kailangan ko talaga yun.*

*Group: Okay sige*

*Lea: Isama niyo narin kasi sayang naman.*

*Group: Okay. So yung sa bills yung pagdivide sa water and electricity bills , and rent nga. Basta meron din report dun kung sino hindi pa nagbbayad and may penalty. Okay yung last is yung login – timein timout. Which is basically yun nga login logout everytime they go out and they go in. Tapos yung last is yung report kung ilan yung pwedeng maging vacant by the end of the year.*

*Lea: Oo parang projection lang.*

*Group: Projection. Sige. Okay.*

*Lea: Yeah. Okay sige yun lang if ever meron ittawag niyo nalang kung may maisip pa kayo*

*Group: Okay. Saka first interview palang naman ito*

*Lea: Makakaisip pa talaga. At least from there makakasimula na kayo*

*Group: Okay, thanks!*

*Lea: Okay!*

***Date of Interview: June 22, 2014***

***Time: 9:00-9:30pm***

***Interviewee: Mrs. Lea Acaling Coloma, Owner of Casa Acaling***

***Venue: Coloma Residence***

*Jao: We have follow up questions for the project. We just want to clarify things out.*

*Lea: Okay sige*

*Jao: Sa room assignment ba pwede halo yung boys and yung girls?*

*Lea: No, hindi pwede. Dati pwede pero nagkaincident kami na may nabuntis na tenant.*

*Jao: Ah okay. Next question is still about room assignment.*

*Lea: Okay sige*

*Jao: Pwede ba lumipat lipat ng room yung tenant. For example, meron vacant sa isang room tapos gusto lumipat doon ng tenant, pwede ba siya lumipat anytime.*

*Lea: No pwede lang lumipat ng room at the end of their contract. Kung saan sila nakaassign doon na sila for their whole contract.*

*Jao:Ok! Got it.*

*Lea: Meron ka pang gusto tanungin?*

*Jao: Uhmm wait lang*

*Lea: Ah about pala sa billing, kapag yung tenant pala hindi nakabayad sa cutoff meron penalty.*

*Jao: kalian yun cut-off?*

*Lea: 15th of the month*

*Jao: Magkano yung iccharge sa tenant. Ibbase ba sa total bill niya?*

*Lea: No, hindi. Constant lang yung binibill namin. 50 pesos lang a month.*

*Jao: Bakit parang ang liit.*

*Lea: Sa province kasi eh. Kapag taasan baka lumipat pa sila ng dorm.*

*Jao: Oo nga naman. Yun lang naman yung questions ko. I’ll ask you nalang ulit if ever we any*

*Lea: Okay sige. Galinga niyo ha!*

*Jao: Okay!*