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No	**SP23 BSE 020**

Fully Dressed uses cases:

1. Student Living

Use Case ID:	UC-SL-001
Use Case Name:	Student Living
Primary Actor:	Student
Trigger:	System sends a notification or when a student moves in.

Preconditions:

- The student is enrolled at a university or college.
- The student has access to the student housing system (online portal or office).
- Available student accommodations exist for the student's location.

Postconditions:

- The student is successfully placed in a suitable accommodation.
- The housing office has updated records of student housing assignments. ☐ Payment and contracts are successfully handled through the system.

Basic Flow (Main Success Scenario): 1.

Student logs into the Housing Portal:

- o The student enters their login credentials (username and password) into the housing portal.
- o The system verifies the student's identity based on their university ID.
- o The system presents available housing options based on the student's academic year, preferences, and budget.

2. **Student searches for accommodations**:
- o The student filters available housing based on criteria like:
  - ▪ Price range
  - ▪ Room type (single, shared, suite, etc.)
  - ▪ Location (on-campus or off-campus)
  - ▪ Amenities (Wi-Fi, study spaces, gym access, etc.) o The system returns a list of accommodations matching the student's filters.

3. **Student selects a housing option**:
- o The student selects a suitable accommodation from the list.
- o The system provides detailed information about the accommodation, including:
  - ▪ Rent price and payment schedule
  - ▪ Lease terms and duration
  - ▪ Photos or virtual tour
  - ▪ Reviews from other students

4. **Student applies for the accommodation**:
- o The student submits an application for the chosen accommodation. o The system requires the student to enter personal information (e.g., emergency contact, ID verification) and possibly a deposit. o The student can opt to pay an application fee through the portal if required.

5. **Housing Office reviews and approves the application**:
- o The housing office receives the student's application.
- o The system notifies the housing office of new applications. o The housing office reviews the application and confirms that the student meets eligibility criteria. o The housing office approves the student's application for housing.

6. **Student signs the housing contract**:
- o The system generates an electronic lease agreement with terms and conditions. o The student reviews and digitally signs the agreement through the portal. o The system updates the housing office's records, confirming the student's housing assignment.

7. **Payment process**:
- o The system generates a payment schedule for the student, outlining the rent and due dates.
- o The student makes an initial payment through the housing portal (this may include a deposit, first month's rent, etc.). o The system confirms the payment and updates the housing records.

8. **Student moves into accommodation**:
- o The system sends an email or app notification to the student with the move-in date, room number, and instructions for key collection.
- o The student moves into the accommodation on the designated date. o The system logs the student's move-in date and updates housing occupancy records.

Alternative Flows:

1. Application Denied:

- If the housing office denies the student's application (due to eligibility issues, missing documents, or other reasons), the system notifies the student.
- The student may be offered alternative accommodations or given the option to reapply or appeal.

2. Payment Failure:

- If the student's payment fails (due to issues like insufficient funds or incorrect payment information), the system notifies the student immediately.
- The student is prompted to retry the payment or select a different payment method.

3. Student Cancels Application: □ If the student decides to cancel the application after

submission, the system allows the student to withdraw the application.

- The housing office is notified of the cancellation, and the accommodation becomes available to other students.

Extensions:

1. Student requests a Room Change: □ If the student faces issues with the

accommodation (e.g., noise, maintenance), they can request a room change through the

housing portal.

- The housing office receives the request and processes it according to availability and student needs.

2. Student Requests Maintenance: □   The student can submit a maintenance request through the portal for issues like plumbing or heating problems.

- The system notifies the housing office or facilities team, who will schedule repairs.

Non-Functional Requirements:

- **Usability**: The system must have a user-friendly interface, especially since many students are unfamiliar with complex systems.
- **Performance**: The system should be able to handle high traffic, especially during peak housing application seasons (beginning and end of the academic year).
- **Security**: Sensitive student data such as personal identification, payment details, and housing preferences must be encrypted and stored securely.

Frequency of Use:

- **High Frequency**: During housing application periods at the beginning of each semester or academic year.
- **Occasional Use**: Maintenance requests, contract renewals, or payment scheduling.

Assumptions:

- Students have internet access and basic computer skills.
- The housing system integrates with the university's student records system to verify enrollment status.
- The system supports various payment methods (credit/debit card, bank transfer, etc.).

SSD:

SDA Project

Student   Housing Office   Housing System

═══════════════ **Step 1: Student Logs into the Housing Portal** ═══════════════

enterCredentials(username, password) ─────────────────────────►

                                                          verifyIdentity()
                                                          ◄─┐

◄───────────── displayAvailableOptions()

═══════════════ **Step 2: Student Searches for Accommodations** ═══════════════

searchAccommodations(filters: price, type, location, amenities) ──►

◄───────────── returnAvailableAccommodations(matchingFilters)

═══════════════ **Step 3: Student Selects a Housing Option** ═══════════════

selectAccommodation(id) ─────────────────────────────►

◄───────────── showAccommodationDetails(price, leaseTerms, photos, reviews)

═══════════════ **Step 4: Student Applies for the Accommodation** ═══════════════

submitApplication(personalInfo, deposit) ─────────────►

◄───────────── confirmApplicationSubmission()

═══════════════ **Step 5: Housing Office Reviews and Approves the Application** ═══════════════

◄───── notifyNewApplication(applicationDetails)

reviewApplication(applicationDetails) ─────────►

◄───── notifyApproval(status: approved/denied)

═══════════════ **Step 6: Student Signs the Housing Contract** ═══════════════

signContract(digitalSignature) ─────────────────────►
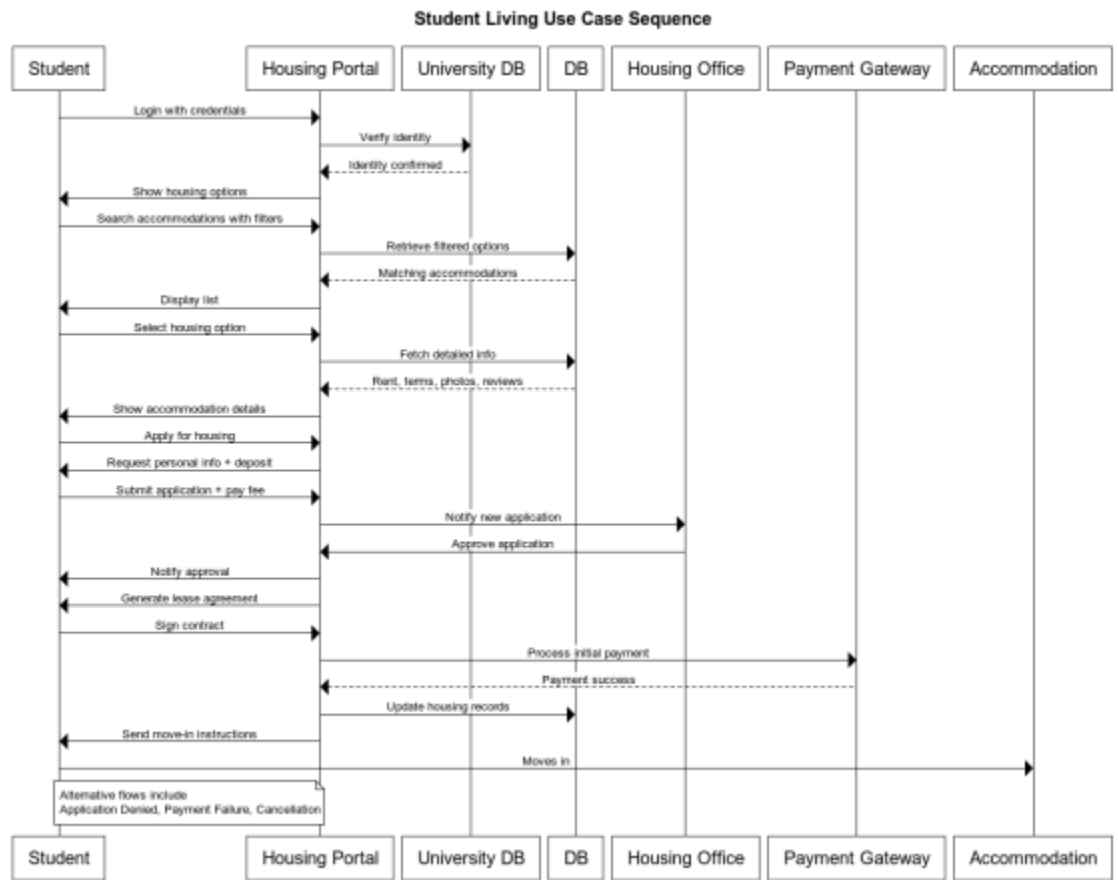
◄───── updateHousingRecord(assignedAccommodation)

═══════════════ **Step 7: Payment Process** ═══════════════

◄───── generatePaymentSchedule(dueDates, amount)

makePayment(amount, paymentMethod) ─────────────────►

◄───── confirmPayment(paymentStatus)

                                      updateHousingRecords(paymentConfirmed)
                                      ◄─┐

═══════════════ **Step 8: Student Moves into Accommodation** ═══════════════

◄───── sendMoveInInstructions(moveInDate, roomNumber, keyCollection)

confirmMoveIn(moveInDate) ─────────────────────────►

◄───── updateMoveInRecords(studentID)

Student   Housing Office   Housing System

SDD:

Student Living Use Case Sequence

Student	Housing Portal	University DB	DB	Housing Office	Payment Gateway	Accommodation

Login with credentials

Verify identity

Identity confirmed

Show housing options

Search accommodations with filters

Retrieve filtered options

Matching accommodations

Display list

Select housing option

Fetch detailed info

Rent, terms, photos, reviews

Show accommodation details

Apply for housing

Request personal info + deposit

Submit application + pay fee

Notify new application

Approve application

Notify approval

Generate lease agreement

Sign contract

Process initial payment

Payment success

Update housing records

Send move-in instructions

Moves in

Alternative flows include
Application Denied, Payment Failure, Cancellation

Student	Housing Portal	University DB	DB	Housing Office	Payment Gateway	Accommodation

www.websequencediagrams.com

Fully Dressed uses cases:

2. Student Leaving

Use Case ID: UC-SL-002

Use Case Name: Student Leaving

Primary Actor: Student

Trigger: The student receives an **email notification**

from the housing system, reminding them
that their housing contract will end in one week

Preconditions:

- The student has received permission or is obligated to leave the accommodation (end of semester, graduation, etc.).
- The student is aware of the move-out date and related deadlines.
- The housing portal is accessible to the student for processing their move-out details.

Postconditions:

- The student has successfully vacated the accommodation.
- The housing office has completed the move-out procedures and updated the housing records.
- Any outstanding payments or damages have been resolved or accounted for. ☐ The accommodation is available for new tenants.

Basic Flow (Main Success Scenario):

1. **Student Logs into Housing Portal**:
     - o   The student logs into the housing portal using their student credentials. o The system verifies the student's identity and shows the current housing assignment.
2. **Student Initiates Move-Out Process**:
     - o   The student clicks on the "Move-Out" button or tab within the portal.

o   The system prompts the student with move-out instructions and deadlines (e.g., return keys, clean the room, etc.). o

3. **System Notifies Student of Requirements**:
  - o   The system provides the student with a checklist for vacating the accommodation, including:
    - ▪ Cleaning instructions (e.g., vacuuming, trash removal).
    - ▪ A move-out inspection date.
    - ▪ Key return process.
    - ▪ A reminder to settle any unpaid rent or fees.
    - ▪ An option to submit a maintenance request if there are any issues with the room (e.g., broken furniture, plumbing issues).

4. **Student Schedules Move-Out Inspection**:
  - o   The student schedules a move-out inspection with the housing office or property management through the portal, selecting a time that fits their schedule. o   The system confirms the inspection appointment and sends a reminder to the student.

5. **Student Prepares for Move-Out**:
  - o   The student packs their belongings and cleans the room, following the provided guidelines. o   The student ensures that all furniture and appliances are in good condition or submits a maintenance request if necessary.

6. **Move-Out Inspection Occurs**:
  - o   The housing office or property manager conducts a room inspection.
  - o   The system generates an inspection checklist that is reviewed during the inspection.
  - o   If the room is in good condition, the inspection is marked as "Passed." o   If damages are found, the system generates a report and an estimate for repairs.
  - o   The system records the findings and sends a notification to the student with the inspection results.

7. **Student Settles Financial Obligations**:
  - o   The system checks if the student has any outstanding payments (e.g., rent, utilities, damage fees).
  - o   If there are any unpaid fees, the system presents the student with the outstanding balance.
  - o   The student makes the final payment for any outstanding charges through the portal. o   The system confirms the payment and updates the student's account.

8. **Key Return Process**:

    o   The system provides the student with instructions on how to return the accommodation keys (e.g., drop-off location, office hours).

    o   The student returns the keys to the designated location.

    o   The system logs the return of the keys and marks the move-out as complete.

9. Student Confirms Move-Out:

o Once the inspection is passed and any fees are settled, the student confirms their departure through the portal. o The system sends a final confirmation message to the student, informing them that their housing contract has ended and their move-out is complete.

10. Accommodation Availability Updated:

- The system updates the housing records, marking the accommodation as available for new tenants.
- The student's record is updated to reflect their move-out status.

Alternative Flows:

1. Damages Detected During Inspection:

- If the housing office or property manager detects damages (e.g., broken furniture, stained carpets), the system generates a damage report and an estimate for repairs.
- The student is notified about the damages, and a charge is applied to their final bill.
- If the student disputes the charges, they can submit a request for further review via the portal.

2. Payment Failure: □ If the student is unable to pay any outstanding fees (e.g., rent or damage charges), the system sends a reminder email.

- The student may be given additional time to pay or offered a payment plan if applicable.
- The housing office may hold the student's security deposit or take other actions to ensure payment.

3. Student Cancels Move-Out:

- If the student changes their mind and decides to stay longer in the accommodation (with approval), they can cancel the move-out process through the portal.
- The system updates the student's housing status and notifies the housing office of the cancellation.

Non-Functional Requirements:

- **Usability**: The portal should have an intuitive user interface for students, ensuring they can easily complete all necessary tasks (move-out, payment, inspection).
- **Performance**: The system must handle peak move-out periods without delays or crashes.
- **Security**: The system must ensure that all student data, especially financial transactions and room inspection details, is kept secure and private.

Frequency of Use:

- **High Frequency**: Typically occurs at the end of each academic term (semester or year), especially during graduation, transfer, or other terminations of housing contracts.
- **Occasional Use**: Student requests for room changes, extensions, or early move-out due to unforeseen circumstances.

Assumptions:

- The student has completed all prior requirements (e.g., rent payment, accommodation contract) before initiating the move-out process.
- The housing office provides adequate information on how to properly vacate the accommodation.
- The student is not leaving mid-term without prior approval.

SDA Project

SSD:

Student   Housing Office   Housing System

Step 1: Student Logs into Housing Portal

enterCredentials(username, password)

verifyIdentity()

displayHousingAssignment()

Step 2: Student Initiates Move-Out Process

clickMoveOutButton()

displayMoveOutInstructionsAndDeadlines()

Step 3: System Notifies Student of Requirements

displayMoveOutChecklist(cleaningInstructions, inspectionDate, keyReturnProcess, unpaidFeesReminder, maintenanceRequestOption)

Step 4: Student Schedules Move-Out Inspection

scheduleMoveOutInspection(time)

confirmInspectionAppointment(time)

sendInspectionReminder(time)

Step 5: Student Prepares for Move-Out

prepareRoom(cleaning, packBelongings, maintenanceRequest)

updateRoomStatus(readyForInspection)

Step 6: Move-Out Inspection Occurs

notifyInspection(time)

conductRoomInspection()

generateInspectionChecklist()

notifyInspectionResults(status: passed/damages)

Step 7: Student Settles Financial Obligations

checkOutstandingFees()

makePayment(amount)

confirmPayment(paymentStatus)

updateStudentAccount()

Step 8: Key Return Process

provideKeyReturnInstructions(location, officeHours)

returnKeys(location)

logKeyReturn()

Step 9: Student Confirms Move-Out

confirmMoveOut()

sendMoveOutConfirmation()

Step 10: Accommodation Availability Updated

updateHousingRecords(availableForNewTenants)

updateStudentRecord(moveOutStatus)

Student   Housing Office   Housing System

SDA Project

SDD:

Student Leaving Sequence Diagram