

No Code - College Hostel Leave Permission System

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- Subject - No Code Platform & Google Sheets
- Academic Year - 2025-2029

1. Problem Statement / Case Background

The manual process for leave management faces several challenges:

- **Information Slices:** Wardens often don't know who is currently out of campus without checking physical registers.
- **Communication Delays:** Parents are not always informed immediately when a student's leave is approved.
- **Data Integrity:** Difficulty in tracking long-term leave trends or identifying students who overstay their leave.

2. Methods & Algorithms Technology Applied

The implementation utilizes **No-Code Development Platforms (NCDP)**. The following technical logic is applied:

- **Data Filtering (Slicing):** Row-level filtering logic to create subset views (e.g., filtering only "Pending" rows).
- **Conditional Formatting:** Visual cues based on record status.
- **Event-Driven Automation:** Triggers that execute actions (sending SMS) based on data changes (Status = "Approved").
- **CRUD Operations:** Create, Read, Update, and Delete actions for managing student records and leave logs.

3. Implementation Details

The system is implemented through the following configurations:

Slices (Data Logic)

Slices act as virtual tables filtered by specific conditions:

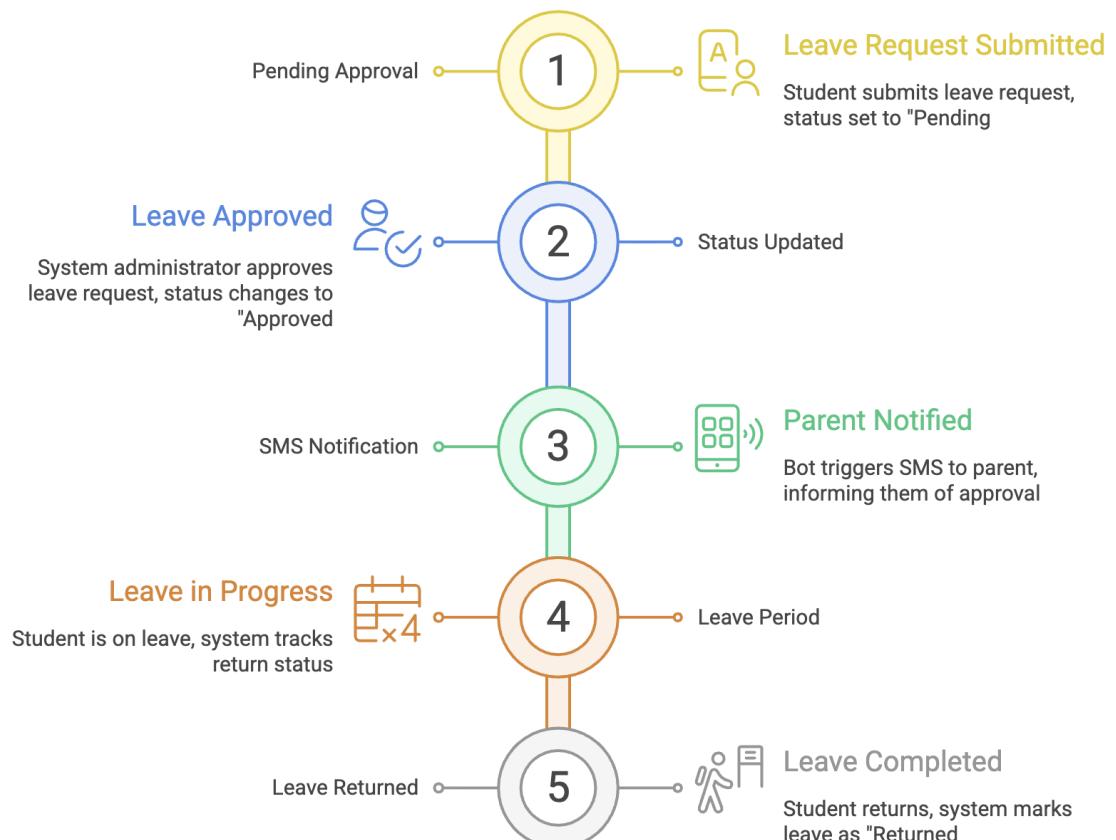
- **PendingApprovalSlice:** [Status] = "Pending"
- **OutOfCampusSlice:** [ReturnStatus] = "Not Returned"
- **LongLeaveSlice:** [DaysRequested] > 7

Action & Format Rules

- **Actions:** **Approve Leave**, **Reject Leave**, and **Mark Returned** update specific columns. **Call Student** uses system URI to initiate a phone call.
- **Format Rules:** **Yellow:** Highlights pending items to indicate "Wait."
 - **Red:** Highlights long leaves to flag potential security or academic concerns.
 - **Green:** Indicates a completed process (Returned).

Automation (The "Bot")

A bot is configured with a **Wait for Change** trigger. When [Status] is updated to "Approved," the system invokes an SMS API or native provider to message the parent's phone number stored in the student record.



Warden Approvals

Hostel info

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ApprovalID ApprovalID LeaveID WardenName DecisionDate Decision

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	ApprovalID	LeaveID	WardenName	DecisionDate	Decision									
2	WD001	LV001	Warden 2	2025-03-02	Approved									
3	WD002	LV002	Warden 3	2025-03-03	Rejected									
4	WD003	LV003	Warden 4	2025-03-04	Pending									
5	WD004	LV004	Warden 1	2025-03-05	Approved									
6	WD005	LV005	Warden 2	2025-03-06	Rejected									
7	WD006	LV006	Warden 3	2025-03-07	Pending									
8	WD007	LV007	Warden 4	2025-03-08	Approved									
9	WD008	LV008	Warden 1	2025-03-09	Rejected									
10	WD009	LV009	Warden 2	2025-03-10	Pending									
11	WD010	LV010	Warden 3	2025-03-11	Approved									
12	WD011	LV011	Warden 4	2025-03-12	Rejected									
13	WD012	LV012	Warden 1	2025-03-13	Pending									
14	WD013	LV013	Warden 2	2025-03-14	Approved									
15	WD014	LV014	Warden 3	2025-03-15	Rejected									
16	WD015	LV015	Warden 4	2025-03-16	Pending									
17	WD016	LV016	Warden 1	2025-03-17	Approved									
18	WD017	LV017	Warden 2	2025-03-18	Rejected									
19	WD018	LV018	Warden 3	2025-03-19	Pending									
20	WD019	LV019	Warden 4	2025-03-20	Approved									
21	WD020	LV020	Warden 1	2025-03-21	Rejected									
22														
23														
24														
25														
26														
27														
28														

Convert to table

Leave requested

Hostel info

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A1 | fx LeaveID

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	LeaveID	StudentID	FromDate	ToDate	Days Requested	Status	ReturnStatus							
2	LV001	ST001	2025-03-02	2025-03-04	2	Approved	Not Returned							
3	LV002	ST002	2025-03-03	2025-03-05	3	Rejected	Not Returned							
4	LV003	ST003	2025-03-04	2025-03-06	4	Pending	Not Returned							
5	LV004	ST004	2025-03-05	2025-03-07	5	Approved	Returned							
6	LV005	ST005	2025-03-06	2025-03-08	6	Rejected	Not Returned							
7	LV006	ST006	2025-03-07	2025-03-09	7	Pending	Not Returned							
8	LV007	ST007	2025-03-08	2025-03-10	8	Approved	Not Returned							
9	LV008	ST008	2025-03-09	2025-03-11	9	Rejected	Returned							
10	LV009	ST009	2025-03-10	2025-03-12	10	Pending	Not Returned							
11	LV010	ST010	2025-03-11	2025-03-13	1	Approved	Not Returned							
12	LV011	ST011	2025-03-12	2025-03-14	2	Rejected	Not Returned							
13	LV012	ST012	2025-03-13	2025-03-15	3	Pending	Returned							
14	LV013	ST013	2025-03-14	2025-03-16	4	Approved	Not Returned							
15	LV014	ST014	2025-03-15	2025-03-17	5	Rejected	Not Returned							
16	LV015	ST015	2025-03-16	2025-03-18	6	Pending	Not Returned							
17	LV016	ST016	2025-03-17	2025-03-19	7	Approved	Returned							
18	LV017	ST017	2025-03-18	2025-03-20	8	Rejected	Not Returned							
19	LV018	ST018	2025-03-19	2025-03-21	9	Pending	Not Returned							
20	LV019	ST019	2025-03-20	2025-03-22	10	Approved	Not Returned							
21	LV020	ST020	2025-03-21	2025-03-23	1	Rejected	Returned							
22														
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Convert to table

Student

The screenshot shows a Google Sheets spreadsheet titled "Hostel info". The data is organized into columns A through N, with rows numbered from 1 to 21. The columns represent StudentID, Name, RoomNo, ParentName, ParentPhone, and various other fields. Row 13 is highlighted in blue, and the cell F13 contains the value "ST012". The bottom navigation bar shows tabs for "Students", "Leave Requests", and "Warden Approvals".

F13	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	StudentID	Name	RoomNo	ParentName	ParentPhone									
2	ST001	Student 1	Room 101	Parent 1	9878200001									
3	ST002	Student 2	Room 102	Parent 2	9878200002									
4	ST003	Student 3	Room 103	Parent 3	9878200003									
5	ST004	Student 4	Room 104	Parent 4	9878200004									
6	ST005	Student 5	Room 105	Parent 5	9878200005									
7	ST006	Student 6	Room 106	Parent 6	9878200006									
8	ST007	Student 7	Room 107	Parent 7	9878200007									
9	ST008	Student 8	Room 108	Parent 8	9878200008									
10	ST009	Student 9	Room 109	Parent 9	9878200009									
11	ST010	Student 10	Room 110	Parent 10	9878200010									
12	ST011	Student 11	Room 111	Parent 11	9878200011									
13	ST012	Student 12	Room 112	Parent 12	9878200012									
14	ST013	Student 13	Room 113	Parent 13	9878200013									
15	ST014	Student 14	Room 114	Parent 14	9878200014									
16	ST015	Student 15	Room 115	Parent 15	9878200015									
17	ST016	Student 16	Room 116	Parent 16	9878200016									
18	ST017	Student 17	Room 117	Parent 17	9878200017									
19	ST018	Student 18	Room 118	Parent 18	9878200018									
20	ST019	Student 19	Room 119	Parent 19	9878200019									
21	ST020	Student 20	Room 120	Parent 20	9878200020									
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Appsheet Images:

1. Slices

The screenshot shows the Appsheet interface with the "Warden Approvals" slice selected. On the left, the sidebar shows the data model with tables for "Leave Requests", "Students", and "Warden Approvals". The main area displays the "Table: Warden Approvals" with 11 columns: NAME, TYPE, KEY?, LABEL?, and FORMULA. The data consists of 11 rows of approval records. On the right, there is a preview window showing a list of approvals with columns for WardenName, ApprovalID, and LeaveID. A blue plus button is visible at the bottom right of the preview.

NAME	TYPE	KEY?	LABEL?	FORMULA
_RowNumber	Number	<input type="checkbox"/>	<input type="checkbox"/>	=
ApprovalID	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	=
LeaveID	Text	<input type="checkbox"/>	<input type="checkbox"/>	=
WardenName	Name	<input type="checkbox"/>	<input checked="" type="checkbox"/>	=
DecisionDate	Date	<input type="checkbox"/>	<input type="checkbox"/>	=
Decision	Enum	<input type="checkbox"/>	<input type="checkbox"/>	=
Column_6	Show	<input type="checkbox"/>	<input type="checkbox"/>	=
Approve leave	Text	<input type="checkbox"/>	<input type="checkbox"/>	=
Reject Leave	Text	<input type="checkbox"/>	<input type="checkbox"/>	=
Mark Returned	Text	<input type="checkbox"/>	<input type="checkbox"/>	=
call return	Text	<input type="checkbox"/>	<input type="checkbox"/>	=

WardenName	ApprovalID	LeaveID
Warden 2	WD001	LV001
Warden 3	WD002	LV002
Warden 4	WD003	LV003
Warden 1	WD004	LV004
Warden 2	WD005	LV005
Warden 3	WD006	LV006
Warden 4	WD007	LV007
Warden 1	WD008	LV008
Warden 2	WD009	LV009
Warden 3	WD010	LV010
Warden 4	WD011	LV011

2. Views

The screenshot shows the Hostel application's configuration interface. On the left, the primary navigation includes 'Warden approval', 'Students', 'Leave Requests', 'Dashboard', and 'Menu Navigation'. Under 'Reference Views', there are 'Leave Requests (2)', 'Leave Requests_Detail', 'Leave Requests_Form', 'Students (2)', and 'Warden Approvals (2)'. The main panel displays the configuration for a 'Students' view, which is currently set to display 'Students' from the 'Students' table. It includes sections for 'View name', 'For this data', 'View type' (with options like calendar, deck, table, gallery, detail, map, chart, dashboard, form, and onboarding), 'Position' (middle), and 'View Options' (Sort by Name Ascending). The right side shows a preview of the 'Warden Approvals' table with data rows for Warden 1 through Warden 4. A preview bar at the bottom indicates the app is titled 'Warden approval' and is previewed as '2025.kartikw@isu.ac.in'.

3. Format Rules

The screenshot shows the configuration of a 'Pending' format rule for 'Leave Requests'. The left sidebar lists rules for 'Leave Requests': 'Long Leave', 'Pending' (selected), and 'Returned'. The main panel shows the 'Pending' rule configuration, which applies to 'Leave Requests' and checks if 'ToDate' equals 'Pending'. It includes sections for 'Format these columns and actions' (selecting 'RowNumber', 'LevelID', 'StudentID', 'FromDate', and 'ToDate') and 'Visual Format' (choosing an icon from a grid). The right side shows a preview of the 'Warden Approvals' table with data rows for Warden 1 through Warden 4. A preview bar at the bottom indicates the app is titled 'Warden approval' and is previewed as '2025.kartikw@isu.ac.in'.

4. Actions

The screenshot shows the 'Actions' section of the Hostel app. A new action named 'Reject Leave' is being created. The configuration includes:

- Action name:** Reject Leave
- For a record of this table:** Leave Requests
- Do this:** Data: set the values of some columns in this row
- Set these columns:** Status = Rejected
- Position:** Prominent
- Display:** Primary

On the right, a preview window shows a table of Warden Approvals with one row selected for editing.

WardenName	ApprovID	LeaveID
Warden 2	WD001	LV001
Warden 3	WD002	LV002
Warden 4	WD003	LV003
Warden 1	WD004	LV004
Warden 2	WD005	LV005
Warden 3	WD006	LV006
Warden 4	WD007	LV007
Warden 1	WD008	LV008
Warden 2	WD009	LV009
Warden 3	WD010	LV010
Warden 4	WD011	LV011

5. Automation Bot

The screenshot shows the 'Bots' section of the Hostel app. A new bot named 'New Bot' is being configured. The configuration includes:

- When this EVENT occurs:** Leave Approval SMS Bot (Leave Requests)
- Run this PROCESS:** Sends SMS to parent when leave is approved
- Custom task:** Run a task

On the right, the 'Settings' panel is open, showing options for sending emails, notifications, SMS, HTTP requests, creating files, calling scripts, sending chat messages, and using AI tasks. It also specifies the 'Leave Requests' table and the Twilio messaging channel.

Final Preview of the App:

The screenshot shows a web-based application interface for a Hostel Leave Management System. The top navigation bar includes a 'Hostel' logo, a search bar labeled 'Search Warden approval', and a notification badge indicating 2 new items. On the left, a sidebar menu lists 'Warden approval' (selected), 'Students', 'Leave Requests', 'DashBoard', 'About', 'Feedback', and 'App Gallery'. The main content area is titled 'Warden approval' and displays a table of leave requests. The columns are: WardenName, ApprovalID, LeaveID, DecisionDate, Decision, Approve leave, Reject Leave, Mark Returned, and call return. The data in the table is as follows:

WardenName	ApprovalID	LeaveID	DecisionDate	Decision	Approve leave	Reject Leave	Mark Returned	call return
Warden 2	WD001	LV001	3/2/2025	approve				>
Warden 3	WD002	LV002	3/3/2025	Rejected				>
Warden 4	WD003	LV003	3/4/2025	Pending				>
Warden 1	WD004	LV004	3/5/2025	Approved				>
Warden 2	WD005	LV005	3/6/2025	Rejected				>
Warden 3	WD006	LV006	3/7/2025	Pending				>
Warden 4	WD007	LV007	3/8/2025	Approved				>
Warden 1	WD008	LV008	3/9/2025	Rejected				>
Warden 2	WD009	LV009	3/10/2025	Pending				>
Warden 3	WD010	LV010	3/11/2025	Approved				>
Warden 4	WD011	LV011	3/12/2025	Rejected				>
Warden 1	WD012	LV012	3/13/2025	Pending				>
Warden 2	WD013	LV013	3/14/2025	Approved				>
Warden 3	WD014	LV014	3/15/2025	Rejected				>
Warden 4	WD015	LV015	3/16/2025	Pending				>
Warden 1	WD016	LV016	3/17/2025	Approved				>
Warden 2	WD017	LV017	3/18/2025	Rejected				>

4. Conclusion:

The Hostel Leave Management System demonstrates how no-code tools can rapidly solve operational inefficiencies. By utilizing slices for data organization and automated bots for communication, the institution moves from a reactive to a proactive management style.