

# 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:

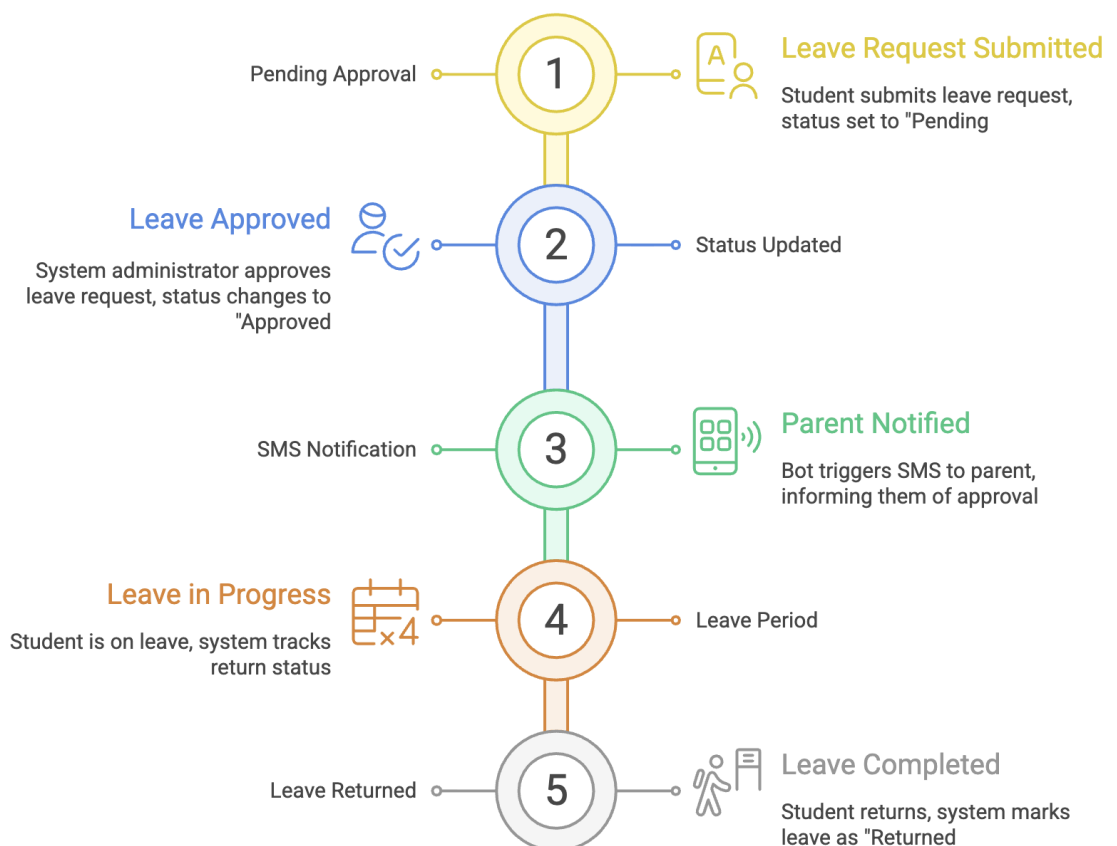
- **PendingApprovalSlice:** `[Status] = "Pending"`
- **OutOfCampusSlice:** `[ReturnStatus] = "Not Returned"`
- **LongLeaveSlice:** `[DaysRequested] > 7`

## 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 infoFile Edit View Insert Format Data Tools Extensions Help

100%123Calibri11

	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

StudentsLeave RequestsWarden Approvals

Leave requested

Hostel infoFile Edit View Insert Format Data Tools Extensions Help

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	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														
23														
24														
25														
26														
27														
28														

Convert to table

StudentsLeave RequestsWarden Approvals

Student

Hostel info

File Edit View Insert Format Data Tools Extensions Help

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	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									
22														
23														
24														
25														
26														
27														
28														

Students Leave Requests Warden Approvals

Appsheet Images:

1. Slices

Hostel

SAVE 2

Data

Leave Requests

long leave

out of campus

Students

Warden Approvals

approval

OPTIONS

User settings

Table: Warden Approvals

View data source

Source: hostel... Qualifier: Warden Ap... Data Source: g... Source Type: S... Columns: 11

	NAME	TYPE	KEY?	LABEL?	FORMU
1	_RowNumber	Number			=
2	ApprovalID	Text	<input checked="" type="checkbox"/>		=
3	LeaveID	Text			=
4	WardenName	Name		<input checked="" type="checkbox"/>	=
5	DecisionDate	Date			=
6	Decision	Enum			=
7	Column_6	Show			=
8	Approve leave	Text			=
9	Reject Leave	Text			=
10	Mark Returned	Text			=
11	Call return	Text			=

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

Warden approval

Students

Leave Requests

DashBoard

Preview app as

2025.kartikw@isu.ac.in

Apply

View: Warden approval | Table: Warden Approvals

## 2. Views

The 'Views' configuration screen for the 'Students' table in the 'Hostel' application. The sidebar on the left shows the 'Views' section with options for 'PRIMARY NAVIGATION', 'Students', 'Leave Requests', 'DashBoard', 'MENU NAVIGATION', and 'REFERENCE VIEWS'. The main configuration area includes fields for 'View name' (Students), 'For this data' (Students), 'View type' (table), 'Position' (middle), and 'View Options' (Sort by Name, Ascending). A preview of the resulting app is shown on the right, displaying a table with columns 'WardenName', 'ApprovalID', and 'LeaveID'.

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

## 3. Format Rules

The 'Format rules' configuration screen for the 'Pending' rule in the 'Hostel' application. The sidebar on the left shows the 'Format rules' section with options for 'Long Leave', 'Pending', and 'Returned'. The main configuration area includes fields for 'Rule name' (Pending), 'For this data' (Leave Requests), 'If this condition is true' ([ToDate] = "Pending"), 'Format these columns and actions' (.\_RowNumber, LeaveID, StudentID, FromDate, ToDate), and 'Visual Format' (Icon). A preview of the resulting app is shown on the right, displaying a table with columns 'WardenName', 'ApprovalID', and 'LeaveID'.

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

## 4. Actions

The screenshot displays the 'Hostel' app interface. On the left, a sidebar lists various actions under categories like 'Leave Requests (5)', 'Students (5)', and 'Warden Approvals (4)'. The 'Reject Leave' action is selected. The main panel shows the configuration for this action, including its name, the table it applies to ('Leave Requests'), and the action type ('Data: set the values of some columns in this row'). The 'Set these columns' section shows 'Status' set to 'Rejected'. The 'Position' is set to 'Prominent'. The right panel shows a preview of the 'Warden Approvals' table with columns 'WardenName', 'ApprovalID', and 'LeavelID'. The table lists 11 entries for Wardens 1 through 4. A 'Preview app as' section shows a user email '2025.kartikw@isu.ac.in' and an 'Apply' button.

WardenName	ApprovalID	LeavelID
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 displays the 'Hostel' app interface for configuring a new automation bot. The left sidebar shows the 'Bots' section with 'New Bot' selected. The main panel shows the 'New Bot' configuration, including the event 'Leave Approval SMS Bot' and the process 'Sends SMS to parent when leave is approved'. The right panel shows the 'Settings' for this bot, including the table 'Leave Requests', the channel '\_Custom\_Twilio\_SMS', and the Twilio Account SID and Auth Token fields. The 'Country Codes' section is also visible.

**Settings**

Table: **Leave Requests**  
Table that this task works with. This is set in the process or determined by the event.

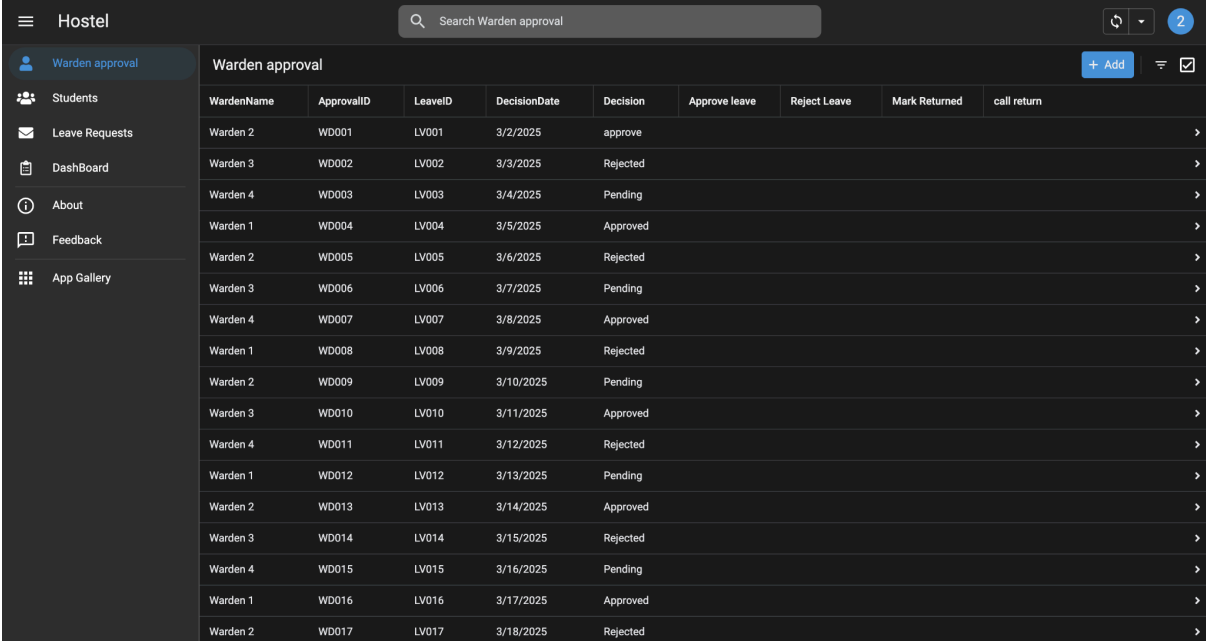
**Via channel**  
The messaging channel to use.  
\_Custom\_Twilio\_SMS

**Twilio Account SID**

**Twilio Auth Token**

**Country Codes**  
Two-letter ISO 3166-1 country codes to allow  
Add

## Final Preview of the App:



The screenshot displays the 'Hostel' app interface. On the left is a sidebar menu with options: Warden approval (selected), Students, Leave Requests, Dashboard, About, Feedback, and App Gallery. The main area shows a 'Warden approval' table with columns: WardenName, ApprovallID, LeaveID, DecisionDate, Decision, Approve leave, Reject Leave, Mark Returned, and call return. The table contains 17 rows of data. At the top right of the table area, there is a '+ Add' button and a checkbox icon. A search bar at the top of the app contains the text 'Search Warden approval'.

WardenName	ApprovallID	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.