Attendance Marking Error Fix Applied

Issue Resolved

Error: "Failed to update attendance record: null value in column 'roster_id' of relation 'attendance' violates not-null constraint"

Root Cause

The error occurred because attendance records were being created without including the required `roster_id` field. The database has a NOT NULL constraint on the `roster_id` column, but the application code was not populating this field during attendance marking operations.

Fix Applied

1. Identified All Attendance Insert Operations

Found three locations where attendance records are created:
- `recordAttendance()` function in `attendanceUtils.ts`
- `singleScanAttendance()` function in `attendanceUtils.ts`
- `createFirstCheckIn()` function in `scan.ts` API

2. Added Roster Retrieval Logic

For each function that creates attendance records:
- Added roster lookup to get the employee's active roster
- Added validation to ensure roster exists before proceeding
- Added proper error handling for missing rosters

3. Updated Insert Data Objects

Modified all attendance insert operations to include:

```
const insertData = {
  employee_id: employeeId,
  roster_id: roster.id, // Added to satisfy NOT NULL constraint
  date: currentDate,
  // ... other fields
};
```

Technical Details

Files Modified

1. `src/utils/attendanceUtils.ts`

Function: `recordAttendance()`
- Added roster retrieval using existing `getEmployeeRoster()` function
- Included `roster_id: roster.id` in insertData

Function: `singleScanAttendance()`
- Added roster retrieval using existing `getEmployeeRoster()` function
- Added roster validation with proper error handling
- Included `roster_id: roster.id` in insertData

2. `src/pages/api/attendance/scan.ts`

Function: `createFirstCheckIn()`
- Added roster lookup query to get active roster for employee
- Added roster validation with AttendanceError on failure
- Included `roster_id: roster.id` in insertData

Database Constraint

```
COLUMN roster_id UUID NOT NULL
CONSTRAINT attendance_roster_id_fkey FOREIGN KEY (roster_id)
REFERENCES rosters(id)
```

Error Handling

- **Missing Roster**: Functions now throw descriptive errors when no active roster is found
- **Database Validation**: NOT NULL constraint prevents any future roster_id omissions
- **User Experience**: Clear error messages help identify roster configuration issues

Impact

Before Fix

- Attendance marking would fail with database constraint violation
- Users would see "null value in column 'roster_id'" error
- Operations would be blocked completely

After Fix

- ✅ **Attendance Marking Works**: All attendance operations include required roster_id
- ✅ **Proper Validation**: Clear error messages when roster is missing
- ✅ **Data Integrity**: Database constraints are satisfied
- ✅ **Comprehensive Coverage**: All attendance creation paths fixed

Verification

- ✅ All attendance insert operations now include roster_id
- ✅ Roster validation added with proper error handling
- ✅ Database constraint requirements satisfied
- ✅ No breaking changes to existing functionality

Status

🟢 **FIXED** - The attendance marking error has been completely resolved. All attendance record creation operations now properly include the required roster_id field.

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