Name & ID

Md Nafiul Alam Chowdhury ID: 2231774642

Jubayed Ahmed Sahel ID: 2221173642

Md Shadman Shihab ID: 2231639642

Role-Based Interactions in the CRM System

Below is a detailed breakdown of the interactions each user role can have within the CRM system. This is derived from the provided role descriptions and mapped to the core requirements (sections A–D). Interactions are categorized by section for clarity, focusing on what users can view, create, edit, delete, or manage based on their permissions. Assumptions are made to align with standard CRM practices while adhering strictly to the given descriptions (e.g., no role has access beyond what's explicitly stated or implied). Roles are hierarchical where logical: Vendor > Super Admin > Manager > Sales/Marketing Reps.

Vendor

The Vendor acts as the top-level tenant owner, responsible for subscription management and high-level oversight. They have broad access to company-wide details, can assign roles, and oversee the entire organization without deep operational involvement in daily sales/marketing tasks.

A. Tenant and User Management

- Can initiate and manage the organization's subscription plan, including purchasing/upgrading products and viewing billing details (ties to multi-tenant isolation).
- Can create and manage tenant accounts, including setting up isolated environments for the organization.
- Full access to sign-in/sign-up processes for the organization, including inviting administrators (e.g., Super Admins).
- Can view, edit, and manage comprehensive profiles for the organization (tenant) and all employees, including historical changes.
- Can assign roles to employees across the organization.

B. Access and Roles

- Can categorize employees into roles and assign them to specific categories (e.g., product lines or service areas).
- Full RBAC oversight: Can view and enforce access controls for all roles, including auditing permissions.

C. Customer and Deal Management

- Overview access only: Can view high-level summaries of prospects, contacts, sales pipelines, and performance reports for the entire company (no direct creation/editing).
- Can monitor lead/prospect data, contact statuses, pipeline stages, and revenue metrics without altering them.

D. Activity Tracking

- Overview access: Can view logged customer interactions and activities across all channels for the entire company (e.g., aggregate reports on calls, emails, meetings) without creating or editing entries.
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Super Admin

The Super Admin has comprehensive access to all features, can create and assign roles (except creating another Super Admin), and oversees the system's administrative functions. They act as the operational guardian of the tenant's environment.

A. Tenant and User Management

- Can manage tenant environments, including configuring isolation settings and viewing multi-tenant overviews (but cannot purchase subscriptions—that's Vendor-only).
- Full control over user authentication: Can set up, reset, and monitor sign-in/sign-up for administrators and employees, including multi-factor authentication enforcement.
- Can create, view, edit, and delete profiles for the organization and all individual employees, including custom fields.

B. Access and Roles

- Can create new roles and customize their permissions (e.g., defining new categories like "enterprise sales" or "regional services").
- Can assign roles to employees and manage categorizations (e.g., linking a user to a specific product line).
- Full RBAC management: Can define, enforce, audit, and modify access controls for all users, ensuring compliance with role-based restrictions.

C. Customer and Deal Management

- Full access: Can create, view, edit, and delete prospect records, track leads from entry to qualification.
- Can manage contact segmentation, including dynamically categorizing contacts (e.g., moving from lead to opportunity).
- Can design and customize the sales pipeline, define stages, set up automated transitions, and manage deals.
- Can generate, view, and export detailed performance reports on sales records, revenue, and conversion rates.

D. Activity Tracking

- Full access: Can log, view, edit, and delete customer interactions across all channels (manual/automated).
- Can create, track, and analyze activities per customer (e.g., scheduling calls, sending emails, logging meetings), including bulk operations.

Manager

The Manager has supervisory access to sales and marketing operations, including viewing activities of Sales Reps and Marketing Reps. They can only view (not create or edit) in these areas and have no access to analytics/insights or role management.

A. Tenant and User Management

- Limited view-only access: Can view basic tenant overviews and employee profiles within their supervised teams (e.g., sales/marketing staff), but cannot create, edit, or manage accounts/authentication/profiles.

B. Access and Roles

- No assignment or creation capabilities.
- View-only: Can see role categorizations and access controls for supervised employees (e.g., confirming a Sales Rep's product line assignment), but cannot modify them.

C. Customer and Deal Management

- View-only for sales/marketing: Can monitor prospect records and tracking (e.g., seeing lead qualification progress).
- Can view contact segmentation and statuses without changes.
- Can observe the sales pipeline, including stages and deals created by Sales Reps, but cannot design, customize, or automate it.
- Can view basic performance reports on sales/marketing metrics (e.g., conversion rates for their team), excluding advanced analytics/insights.

D. Activity Tracking

- View-only: Can monitor customer interactions logged by reps across channels.
- Can review activity logs per customer (e.g., seeing emails or meetings handled by reps), but cannot create, edit, or delete entries.

Sales Representative

The Sales Rep focuses on customer-facing operations, handling deals, pipelines, and issue resolution. They cannot assign roles and have no access to broader management or analytics.

A. Tenant and User Management

- Self-service only: Can view and edit their own employee profile; limited view of organizational profile.

- Can use authentication features for personal sign-in but cannot manage others.

B. Access and Roles

- No capabilities: Cannot assign, create, or manage roles/categorizations. Access is strictly limited to their own role's permissions (e.g., specific product lines they are assigned to).

C. Customer and Deal Management

- Full operational access: Can create, view, edit, and manage prospect records, tracking leads from entry through qualification.
- Can segment contacts dynamically based on pipeline status (e.g., tagging as opportunity or customer).
- Can create and manage deals, customize their own sales pipeline views, advance stages (with automated transitions if set up), and handle issue resolution (e.g., updating deal notes for problems).
- View-only for performance: Can see their own sales records and metrics (e.g., personal revenue/conversion rates), but not team-wide reports.

D. Activity Tracking

- Full access for their customers: Can log and track interactions across channels (e.g., manual entry for calls, automated email logging).
- Can create, view, edit, and manage activities per customer (e.g., scheduling meetings, resolving issues via text messages).

Marketing Representative

The Marketing Rep handles potential customer tracking and activity creation, focusing on lead generation. They cannot assign roles and have limited scope compared to Sales Reps.

A. Tenant and User Management

- Self-service only: Can view and edit their own employee profile; limited view of organizational profile.
- Can use authentication features for personal sign-in but cannot manage others.

B. Access and Roles

- No capabilities: Cannot assign, create, or manage roles/categorizations. Access is strictly limited to their own role's permissions (e.g., specific service areas they are assigned to).

C. Customer and Deal Management

- Focused on prospects: Can create, view, edit, and track potential customer (lead/prospect) data from initial entry through qualification.
- Can perform contact segmentation for early-stage contacts (e.g., lead to opportunity, but not beyond to customer/churned).
- Limited pipeline involvement: Can view sales pipelines related to their leads but cannot create deals or manage stages.
- View-only for performance: Can see metrics related to their own lead tracking (e.g., conversion rates for prospects), but not full reports.

D. Activity Tracking

- Full access for prospects: Can log and track interactions across channels (e.g., automated email campaigns, manual follow-ups).
- Can create, view, edit, and manage activities per potential customer (e.g., phone calls, texts, meetings focused on lead nurturing).

Role-Based UI Interactions in the CRM System

Vendor

As the top-level tenant owner, the Vendor's UI emphasizes high-level oversight and setup, with a streamlined dashboard showing company-wide summaries. Navigation is simple, starting from a "Company Overview" homepage that aggregates key metrics in customizable widgets.

A. Tenant and User Management

- From the homepage, click the "Subscription" widget to open a dedicated management page with a clear pricing tier selector; intuitively upgrade by selecting a plan and confirming via a one-click payment form.
- Access the "Tenants" sidebar menu to create new accounts.
- In the "Users" section, invite admins by clicking an "Invite" button that pops up an email form; the interface auto-suggests roles during invitation for quick setup.
- Navigate to "Profiles" via search bar; view or edit tenant/employee profiles in a card-based layout—click a card to expand into an editable form with fields for details, photos, and history logs shown in a scrollable timeline.
- Assign roles by selecting from a dropdown in the profile editor for seamless categorization.

B. Access and Roles

- Under "Roles & Access" in the sidebar, categorize employees using a drag-and-drop board—move users between category columns (e.g., "Product Line A" or "Service Area B").
- Audit permissions via an interactive RBAC matrix: hover over grid cells to see access details, and toggle enforcement with simple checkboxes, accompanied by a search filter for quick role lookups.

C. Customer and Deal Management

- The homepage includes an "Overview Dashboard" with summarized widgets for prospects, contacts, pipelines, and reports—click any widget to drill down into read-only charts (e.g., pie charts for contact statuses or funnel visualizations for pipelines).
- Monitor data without edits: Use filters and search bars to explore leads, statuses, stages, and metrics in a read-only table view, with hover tooltips providing quick insights like revenue breakdowns.

D. Activity Tracking

- From the "Activities Overview" widget on the homepage, view aggregate reports in interactive charts (e.g., bar graphs for interaction types like calls vs. emails); filter by channel or date range using intuitive sliders, but no edit buttons appear to prevent changes.

Super Admin

The Super Admin's UI is comprehensive and administrative, with a "Admin Console" homepage featuring advanced tools and search-driven navigation for efficient oversight. Elements like bulk actions and customization panels make complex tasks feel straightforward.

A. Tenant and User Management

- Control authentication from the "Security" tab

B. Access and Roles

- Access "Roles" via sidebar to create new ones: Use a template selector and permission checkboxes in an intuitive builder interface, defining categories with tag inputs (e.g., "enterprise sales").
- Assign roles and categorizations in a user directory view—select multiple users for bulk assignment via checkboxes, then link to categories using autocomplete search fields.
- Manage RBAC in a dedicated "Access Control" page: Define rules with if-then logic builders, audit via searchable logs, and modify with inline editing, ensuring changes apply with a "Save & Apply" button that previews impact.

C. Customer and Deal Management

- From the "Customers" dashboard, create prospects with a "New Lead" form that auto-populates from integrations.
- Segment contacts in a dynamic table: Drag rows between status columns (e.g., "Lead" to "Opportunity") or use bulk tagging buttons for quick categorization.
- Design pipelines in a visual editor under "Pipelines": Drag stages into sequence, set automations with rule-based triggers (e.g., dropdown for conditions), and manage deals by clicking cards to open detail modals with editable fields.
- Generate reports from the "Reports" tab: Select metrics via filters, view in customizable charts (e.g., line graphs for revenue), and export with one-click buttons to PDF/CSV.

D. Activity Tracking

- Log interactions in the "Activities" module: Choose from channel icons (e.g., phone, email) to open context-aware forms; bulk operations allow selecting multiple customers for simultaneous logging.
- Track and analyze per customer via a timeline view—scroll through entries, edit in line with pencil icons, delete with trash buttons, and filter by type/date with intuitive dropdowns.

Manager

The Manager's UI is supervisory and view-focused, with a "Team Oversight" homepage displaying read-only dashboards tailored to sales/marketing. Simple filters and visualizations make monitoring feel effortless without overwhelming options.

A. Tenant and User Management

- View tenant overviews and team profiles from the homepage widgets: Click to expand into read-only summaries, with search bars to filter by supervised staff, but no edit forms or management buttons visible.

B. Access and Roles

- No creation tools; instead, view categorizations in a static "Team Roles" list—hover for details on assignments (e.g., a Sales Rep's product line), with filters to narrow by employee.

C. Customer and Deal Management

- Monitor prospects in a read-only "Prospects" table: Sort and filter columns to track progress, with progress bars showing qualification status.
- View contact segmentation in categorized tabs (e.g., "Leads," "Opportunities"), using search to find statuses without any edit icons.
- Observe pipelines via a funnel chart in the "Sales Pipeline" section: Zoom into stages for deal details created by reps, with tooltips for quick info, but no customization tools.
- Access basic reports through simple metric cards on the dashboard (e.g., team conversion rates in gauges), excluding deeper analytics tabs.

D. Activity Tracking

- Monitor interactions in an aggregated "Activity Feed" timeline: Filter by rep or channel with dropdowns to review logs.
- Review per-customer logs in a searchable list view—click entries for details (e.g., email content previews), but no create/edit/delete options appear.

Sales Representative

The Sales Rep's UI is action-oriented and customer-focused, with a "My Deals" homepage featuring quick-access tools for daily tasks. Intuitive forms and mobile-responsive elements make on-the-go interactions seamless.

A. Tenant and User Management

- Self-edit profile via a personal "Account" dropdown: Open a simple form to update details, with a read-only org profile summary below.
- Use sign-in features like a secure login page with remember-me options, but no access to others' management.

B. Access and Roles

- No UI elements for role management; permissions are transparently enforced, e.g., category filters auto-apply to views (like showing only assigned product lines).

C. Customer and Deal Management

- Create prospects from a "New Prospect" button on the homepage, leading to an auto-complete form; track in a personal kanban board with draggable cards for qualification.
- Segment contacts via tag dropdowns in contact detail views: Easily apply statuses like "Opportunity" with instant updates.
- Manage deals in a customizable pipeline view: Create via forms, advance stages by dragging cards (triggering automations), and resolve issues by adding notes in expandable comment sections.
- View personal performance in a "My Metrics" widget: Simple charts show revenue/conversions, with filters for time periods.

D. Activity Tracking

- Log interactions from customer detail pages: Click channel buttons (e.g., "Log Call") to open quick-entry modals with auto-timestamps.
- Manage activities in a per-customer timeline: Edit entries inline, delete with confirmation prompts, and view/edit with pencil/trash icons for intuitive control.

Marketing Representative

The Marketing Rep's UI prioritizes lead nurturing, with a "My Leads" homepage offering focused tools for tracking and activities. Clean layouts and suggestion prompts make lead generation feel guided and efficient.

A. Tenant and User Management

- Self-edit profile via the "Account" dropdown: Update personal details in a form, with a brief org profile view.
- Personal sign-in page with standard security, no broader management access.

B. Access and Roles

- No management UI; role limits auto-filter views to assigned areas (e.g., service-specific leads).

C. Customer and Deal Management

- Create/track prospects in a dedicated "Leads" board: Use a "New Lead" form with suggestions, drag cards through early qualification stages.
- Segment early contacts via status tags in list views: Apply "Lead to Opportunity" with dropdowns, limited to pre-customer phases.
- View related pipelines in a read-only summary tab: Filter to see only their leads' progress, without deal creation tools.
- Check personal metrics in a "My Performance" card: Gauges for lead conversions, no full report access.

D. Activity Tracking

- Log interactions from lead detail pages: Select from campaign icons (e.g., "Send Email") for automated or manual entry forms.

- Manage activities in a timeline per prospect: Create with quick-add buttons, edit inline, and nurture via suggested follow-up prompts.

Technical Stack:

Component	Technology	Notes
Web Front End	**React JS**	Modern component-based web application interface.
Mobile App	**Kotlin**	Primary language for native Android development.
Database (DB)	**PostgreSQL**	Robust, open-source, relational database management system (RDBMS) for secure data storage.
Backend/API	**Django (Python)**	High-level web framework for rapid, secure API development and business logic.

Providers for Third-Party Integrations:

Functionality	Integration Partner	Notes
Mailing Providers	SendGrid	Transactional and bulk email delivery.

VoIP/SMS	Twilio	Voice calling, SMS, and messaging capabilities.
Telegram Chat	Telegram API	Direct customer chat and conversation logging.
Issue Tracking	Linear	Synchronization for support tickets and feature management.
Telegram Bot	Built with custom scripts/bots leveraging Telegram Bot API	Automated messaging, notifications, and workflow triggers.