

Group Members

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Repository link: <https://github.com/Davis-Okumu/Database-Systems-Groupwork>

Affordable Housing Allocation System

Project Idea Definition

The Affordable Housing Allocation System is designed to manage applications for affordable housing projects in urban areas of Kenya. The system will ensure fair and equitable distribution of housing units to eligible applicants, prioritizing those with the greatest need. This will contribute to the United Nations Sustainable Development Goal (SDG) 11: **Sustainable Cities and Communities**, which aims to provide access to safe, affordable housing for all.

In Kenya, rapid urbanization has led to a shortage of affordable housing, forcing many low-income families into informal settlements. The government has initiated various affordable housing projects to address this issue. However, the application and allocation process often lacks transparency and efficiency. This system will streamline the application, evaluation, and allocation of housing units, ensuring fair distribution and effective management.

By using a centralized database, stakeholders can monitor the progress of applications, maintain tenant records, track housing availability, and generate reports for informed decision-making.

Project Scope and Objectives

Scope:

- Design and implement a relational database system to manage affordable housing applications, tenant records, and housing project data.
- Develop modules for application management, eligibility verification, unit allocation, and reporting.

- Ensure data security and provide role-based access for various stakeholders.

Objectives:

1. **Efficient Application Management:** Streamline the application process by capturing applicant details, verifying eligibility, and tracking application status.
2. **Fair Allocation of Housing:** Implement a transparent algorithm for housing allocation based on priority needs.
3. **Data Management:** Maintain accurate records of tenants, units, and financial transactions.
4. **Reporting and Analytics:** Provide stakeholders with reports on occupancy rates, financial data, and community impact.
5. **Scalability and Flexibility:** Design the database to accommodate multiple housing projects and future expansions.

Key Functionalities:

- Application submission and tracking.
- Eligibility verification and approval.
- Housing unit allocation and occupancy management.
- Payment tracking for rent and subsidies.
- Maintenance request management.
- Report generation and analytics.

Project Stakeholders

1. **Government Housing Authorities:** ○ Manage and oversee the implementation of affordable housing projects.
 - Access reports on application status, allocation rates, and project performance.
2. **Applicants and Tenants:** ○ Submit applications for housing units.
 - Track application status and receive notifications.
 - Report maintenance issues.
3. **Community Organizations and NGOs:** ○ Monitor and support fair housing allocation.

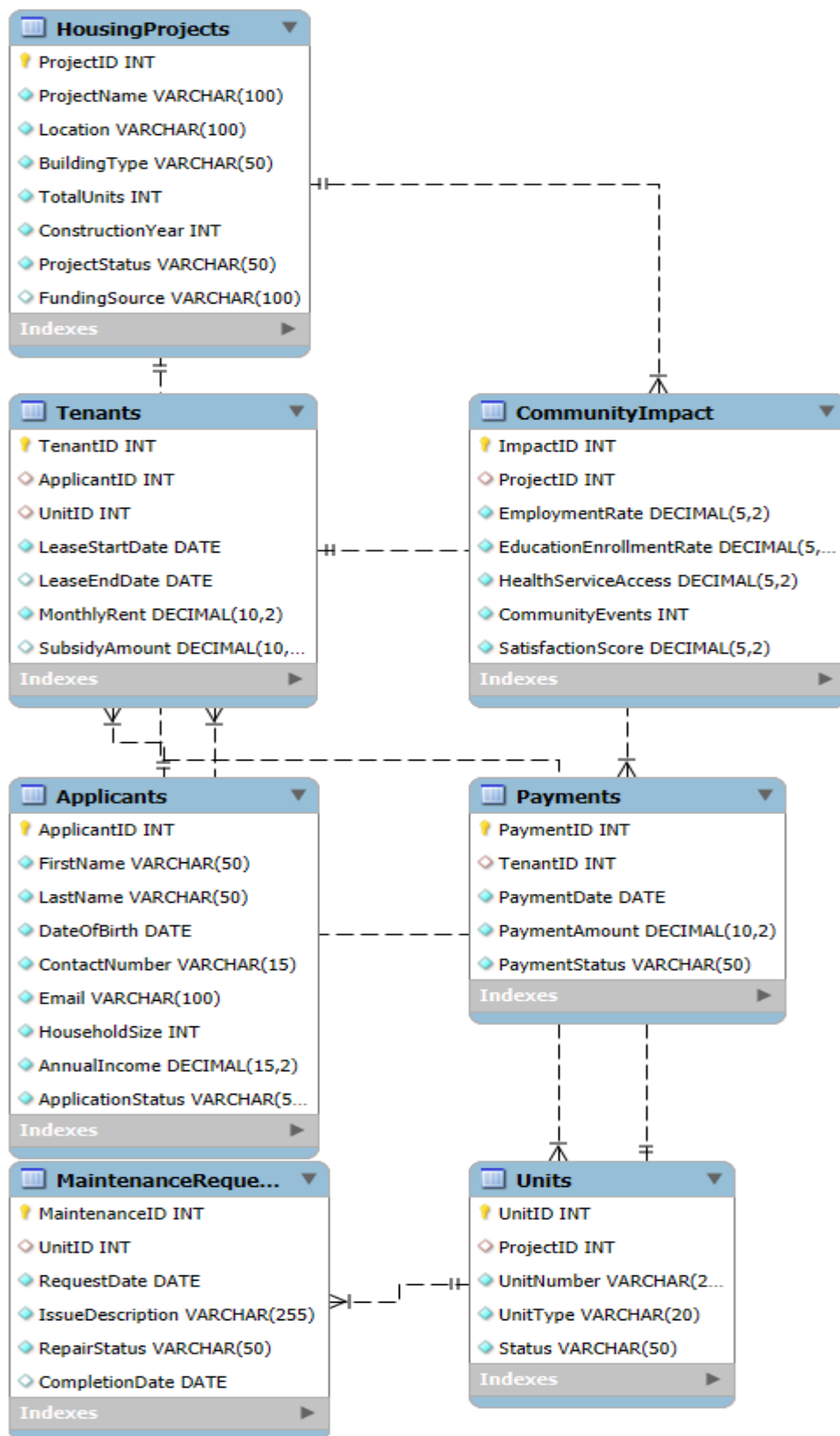
- Provide input on community needs and impact.
- 4. **Financial Institutions and Donors:** ○ Track subsidy distribution and fund utilization.
- Access financial reports.
- 5. **Maintenance and Facility Managers:** ○ Manage repair requests and ensure timely maintenance.
- Track maintenance expenses and schedules.
- 6. **Database Administrators and Developers:** ○ Maintain the database system.
- Ensure data security and perform backups.

This system will ensure transparency, fairness, and efficiency in the management of affordable housing projects, contributing to the improvement of urban living conditions in Kenya.

ENTITIES AND ATTRIBUTES

1. **HousingProjects:** ProjectID (Primary Key), ProjectName, Location, BuildingType, TotalUnits, ConstructionYear, ProjectStatus, FundingSource
2. **Applicants:** ApplicantID (Primary Key), FirstName, LastName, DateOfBirth, ContactNumber, Email, HouseholdSize, AnnualIncome, ApplicationStatus
3. **Units:** UnitID (Primary Key), ProjectID (Foreign Key), UnitNumber, UnitType, Status
4. **Tenants:** TenantID (Primary Key), ApplicantID (Foreign Key), UnitID (Foreign Key), LeaseStartDate, LeaseEndDate, MonthlyRent, SubsidyAmount
5. **Payments:** PaymentID (Primary Key), TenantID (Foreign Key), PaymentDate, PaymentAmount, PaymentStatus
6. **MaintenanceRequests:** MaintenanceID (Primary Key), UnitID (Foreign Key), RequestDate, IssueDescription, RepairStatus, CompletionDate
7. **CommunityImpact:** ImpactID (Primary Key), ProjectID (Foreign Key), EmploymentRate, EducationEnrollmentRate, HealthServiceAccess, CommunityEvents, SatisfactionScore

Database Schema



ERD

