

Diagrama ER do Sistema ‘Simple’

Este diagrama representa as relações entre as entidades do sistema de gestão de serviços municipais.

```
erDiagram
    ROLES {
        int id PK
        varchar name
        text description
        timestamp created_at
        timestamp updated_at
    }

    USERS {
        uuid id PK
        varchar username
        varchar password
        varchar email
        varchar full_name
        varchar cpf
        varchar phone
        int role_id FK
        boolean is_active
        timestamp last_login
        timestamp created_at
        timestamp updated_at
    }

    DEPARTMENTS {
        int id PK
        varchar name
        text description
        boolean is_active
        timestamp created_at
        timestamp updated_at
    }

    USER_DEPARTMENTS {
        uuid user_id PK,FK
        int department_id PK,FK
        boolean is_manager
        timestamp created_at
    }

    PROCESS_TYPES {
```

```

    int id PK
    varchar name
    text description
    int estimated_days
    int department_id FK
    boolean is_active
    boolean requires_payment
    timestamp created_at
    timestamp updated_at
}

PROCESS_STAGES {
    int id PK
    int process_type_id FK
    varchar name
    text description
    int sequence_order
    int estimated_days
    int department_id FK
    boolean requires_approval
    boolean requires_payment
    timestamp created_at
    timestamp updated_at
}

DOCUMENT_TYPES {
    int id PK
    varchar name
    text description
    boolean is_required
    timestamp created_at
    timestamp updated_at
}

PROCESS_REQUIRED_DOCUMENTS {
    int process_type_id PK,FK
    int document_type_id PK,FK
    boolean is_required
    int stage_id FK
    timestamp created_at
}

PROCESS_STATUS {
    int id PK
    varchar name
    text description

```

```

        boolean is_final
        varchar color
        timestamp created_at
        timestamp updated_at
    }

    REQUESTS {
        uuid id PK
        varchar protocol_number
        int process_type_id FK
        uuid requester_id FK
        int current_stage_id FK
        int current_status_id FK
        uuid assigned_to FK
        varchar title
        text description
        text property_address
        varchar property_registration
        boolean is_digital
        boolean is_priority
        text priority_reason
        date expected_completion_date
        timestamp completed_date
        timestamp created_at
        timestamp updated_at
    }

    REQUEST_STATUS_HISTORY {
        int id PK
        uuid request_id FK
        int status_id FK
        int stage_id FK
        uuid user_id FK
        text comments
        timestamp created_at
    }

    DOCUMENTS {
        uuid id PK
        uuid request_id FK
        int document_type_id FK
        varchar file_name
        varchar file_path
        int file_size
        varchar mime_type
        uuid uploaded_by FK
    }

```

```

        boolean is_approved
        uuid approved_by FK
        timestamp approval_date
        text rejection_reason
        timestamp created_at
        timestamp updated_at
    }

    TRACKING_CODES {
        uuid id PK
        uuid request_id FK
        varchar code
        boolean is_active
        timestamp expiration_date
        timestamp created_at
    }

    PAYMENT_TYPES {
        int id PK
        varchar name
        text description
        boolean is_active
        timestamp created_at
        timestamp updated_at
    }

    PAYMENT_STATUS {
        int id PK
        varchar name
        text description
        timestamp created_at
        timestamp updated_at
    }

    PAYMENTS {
        uuid id PK
        uuid request_id FK
        int payment_type_id FK
        int status_id FK
        text description
        decimal amount
        int installments
        date due_date
        timestamp payment_date
        varchar receipt_number
        varchar receipt_file_path
    }

```

```

        uuid created_by FK
        timestamp created_at
        timestamp updated_at
    }

    PAYMENT_INSTALLMENTS {
        int id PK
        uuid payment_id FK
        int installment_number
        decimal amount
        date due_date
        timestamp payment_date
        int status_id FK
        varchar receipt_number
        timestamp created_at
        timestamp updated_at
    }

    INSPECTIONS {
        uuid id PK
        uuid request_id FK
        uuid inspector_id FK
        timestamp scheduled_date
        timestamp completed_date
        varchar status
        text report
        boolean is_approved
        text rejection_reason
        timestamp created_at
        timestamp updated_at
    }

    INSPECTION_DOCUMENTS {
        uuid id PK
        uuid inspection_id FK
        varchar file_name
        varchar file_path
        int file_size
        varchar mime_type
        uuid uploaded_by FK
        timestamp created_at
    }

    DISPATCHES {
        uuid id PK
        uuid request_id FK

```

```

        int stage_id FK
        uuid user_id FK
        text content
        boolean is_approved
        timestamp decision_date
        uuid decision_by FK
        timestamp created_at
        timestamp updated_at
    }

    CONTRACTS {
        uuid id PK
        uuid request_id FK
        varchar contract_number
        varchar title
        text content
        date start_date
        date end_date
        boolean is_signed
        timestamp signed_date
        uuid signed_by FK
        varchar file_path
        uuid created_by FK
        timestamp created_at
        timestamp updated_at
    }

    CERTIFICATES {
        uuid id PK
        uuid request_id FK
        varchar certificate_number
        varchar title
        text content
        date issue_date
        date expiry_date
        varchar file_path
        uuid issued_by FK
        timestamp created_at
        timestamp updated_at
    }

    BLUEPRINTS {
        uuid id PK
        uuid request_id FK
        varchar blueprint_number
        varchar title

```

```

        text description
        date issue_date
        varchar file_path
        uuid issued_by FK
        timestamp created_at
        timestamp updated_at
    }

    LICENSES {
        uuid id PK
        uuid request_id FK
        varchar license_number
        varchar license_type
        varchar title
        text description
        date issue_date
        date expiry_date
        boolean is_renewal
        uuid previous_license_id FK
        varchar file_path
        uuid issued_by FK
        timestamp created_at
        timestamp updated_at
    }

    COMMENTS {
        uuid id PK
        uuid request_id FK
        uuid user_id FK
        text content
        boolean is_internal
        timestamp created_at
        timestamp updated_at
    }

    NOTIFICATIONS {
        uuid id PK
        uuid user_id FK
        varchar title
        text content
        boolean is_read
        timestamp read_at
        varchar notification_type
        uuid reference_id
        timestamp created_at
    }

```

```

FAVORITES {
    int id PK
    uuid user_id FK
    int process_type_id FK
    timestamp created_at
}

MOST_USED_SERVICES {
    int id PK
    int process_type_id FK
    int count
    timestamp last_used
    timestamp created_at
    timestamp updated_at
}

SYSTEM_LOGS {
    int id PK
    uuid user_id FK
    varchar action
    varchar entity_type
    varchar entity_id
    jsonb details
    varchar ip_address
    text user_agent
    timestamp created_at
}

SYSTEM_SETTINGS {
    int id PK
    varchar setting_key
    text setting_value
    text description
    boolean is_public
    timestamp created_at
    timestamp updated_at
}

ROLES ||--o{ USERS : "tem"
USERS ||--o{ USER_DEPARTMENTS : "pertence"
DEPARTMENTS ||--o{ USER_DEPARTMENTS : "contém"
DEPARTMENTS ||--o{ PROCESS_TYPES : "gerencia"
DEPARTMENTS ||--o{ PROCESS_STAGES : "responsável"
PROCESS_TYPES ||--o{ PROCESS_STAGES : "contém"
PROCESS_TYPES ||--o{ PROCESS_REQUIRED_DOCUMENTS : "requer"

```


DOCUMENT_TYPES ||--o{ PROCESS_REQUIRED_DOCUMENTS : "é requerido por"
PROCESS_STAGES ||--o{ PROCESS_REQUIRED_DOCUMENTS : "requer"
PROCESS_TYPES ||--o{ REQUESTS : "categoriza"
PROCESS_STAGES ||--o{ REQUESTS : "está em"
PROCESS_STATUS ||--o{ REQUESTS : "status atual"
USERS ||--o{ REQUESTS : "solicita"
USERS ||--o{ REQUESTS : "atribuído a"
REQUESTS ||--o{ REQUEST_STATUS_HISTORY : "tem histórico"
PROCESS_STATUS ||--o{ REQUEST_STATUS_HISTORY : "status anterior"
PROCESS_STAGES ||--o{ REQUEST_STATUS_HISTORY : "etapa anterior"
USERS ||--o{ REQUEST_STATUS_HISTORY : "alterado por"
REQUESTS ||--o{ DOCUMENTS : "contém"
DOCUMENT_TYPES ||--o{ DOCUMENTS : "categoriza"
USERS ||--o{ DOCUMENTS : "enviado por"
USERS ||--o{ DOCUMENTS : "aprovado por"
REQUESTS ||--o{ TRACKING_CODES : "tem"
PAYMENT_TYPES ||--o{ PAYMENTS : "tipo"
PAYMENT_STATUS ||--o{ PAYMENTS : "status"
REQUESTS ||--o{ PAYMENTS : "tem"
USERS ||--o{ PAYMENTS : "criado por"
PAYMENTS ||--o{ PAYMENT_INSTALLMENTS : "tem"
PAYMENT_STATUS ||--o{ PAYMENT_INSTALLMENTS : "status"
REQUESTS ||--o{ INSPECTIONS : "tem"
USERS ||--o{ INSPECTIONS : "inspecionado por"
INSPECTIONS ||--o{ INSPECTION_DOCUMENTS : "tem"
USERS ||--o{ INSPECTION_DOCUMENTS : "enviado por"
REQUESTS ||--o{ DISPATCHES : "tem"
PROCESS_STAGES ||--o{ DISPATCHES : "na etapa"
USERS ||--o{ DISPATCHES : "criado por"
USERS ||--o{ DISPATCHES : "decidido por"
REQUESTS ||--o{ CONTRACTS : "tem"
USERS ||--o{ CONTRACTS : "assinado por"
USERS ||--o{ CONTRACTS : "criado por"
REQUESTS ||--o{ CERTIFICATES : "tem"
USERS ||--o{ CERTIFICATES : "emitido por"
REQUESTS ||--o{ BLUEPRINTS : "tem"
USERS ||--o{ BLUEPRINTS : "emitido por"
REQUESTS ||--o{ LICENSES : "tem"
LICENSES ||--o{ LICENSES : "renovação de"
USERS ||--o{ LICENSES : "emitido por"
REQUESTS ||--o{ COMMENTS : "tem"
USERS ||--o{ COMMENTS : "comentado por"
USERS ||--o{ NOTIFICATIONS : "recebe"
USERS ||--o{ FAVORITES : "tem"
PROCESS_TYPES ||--o{ FAVORITES : "favorito"
PROCESS_TYPES ||--o{ MOST_USED_SERVICES : "utilização"

USERS ||--o{ SYSTEM_LOGS : "ação de"

Descrição das Principais Relações

1. **Usuários e Perfis:**
 - Cada usuário possui um perfil (ADMIN, MANAGER, ATTENDANT, TECHNICIAN, CITIZEN)
 - Usuários podem pertencer a departamentos específicos
2. **Processos e Etapas:**
 - Cada tipo de processo (Legalização, Compra de Lote, etc.) possui várias etapas sequenciais
 - Cada etapa pode exigir documentos específicos e ser responsabilidade de um departamento
3. **Pedidos e Status:**
 - Cada pedido está associado a um tipo de processo e possui um status atual
 - O histórico de status registra todas as mudanças de estado do pedido
4. **Documentos:**
 - Documentos são associados a pedidos específicos
 - Cada documento tem um tipo e pode ser aprovado/rejeitado
5. **Pagamentos:**
 - Pagamentos são associados a pedidos
 - Pagamentos podem ser parcelados (tabela de parcelas)
6. **Vistorias:**
 - Vistorias são agendadas para pedidos específicos
 - Vistorias podem ter documentos anexados (fotos, relatórios)
7. **Documentos Finais:**
 - Contratos, Certidões, Plantas e Licenças são documentos finais gerados para pedidos
 - Cada um tem suas próprias características e fluxos
8. **Interações:**
 - Comentários permitem comunicação sobre os pedidos
 - Notificações informam usuários sobre atualizações
 - Favoritos e serviços mais utilizados melhoram a experiência do usuário

Observações sobre o Modelo

- Utilização de UUIDs para identificadores únicos de entidades principais
- Rastreamento de criação/atualização em todas as tabelas
- Suporte a fluxos digitais e manuais
- Histórico completo de alterações de status
- Suporte a diferentes tipos de pagamento e parcelamento