## Ecommerce Rails Project – Planning Phase\_Rui\_Yin

### 1. Description of the E-commerce Site

**Store Name:** **Second Spark Tools**

**Business Background:**  
Second Spark Tools is a small business specializing in selling refurbished and used power tools. The store was established 3 years ago and currently has a team of 5 employees: two technicians, one logistics manager, one customer service representative, and the owner.

Currently, sales are made through Facebook Marketplace, Kijiji, and word-of-mouth advertising. Customers often contact the store via Messenger to inquire about available tools and prices. All transactions are handled manually, with inventory tracked in spreadsheets and payments processed by e-transfer or cash on pickup.

**Products Sold:**

* Power drills
* Impact drivers
* Circular saws
* Sanders
* Batteries and chargers
* Refurbished tool kits

**Target Customers:**

* DIY enthusiasts
* Small construction contractors
* Tradespeople looking for affordable equipment
* Budget-conscious homeowners
* Newcomers and young workers starting in skilled trades

**Why Build This Site:**  
The goal of building a full-featured e-commerce site is to improve operational efficiency and expand customer reach beyond social media platforms. Customers will be able to browse products, view availability, and place orders online, while the store can better track inventory and manage orders digitally.

### 2. Database Structure Description

This application will include the following tables:

#### ****Users Table****

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Constraints** | **Description** |
| id | integer | Primary key, Auto increment | Unique ID for each user |
| name | varchar |  | User's name |
| email | varchar | Unique | User's email address |
| password\_digest | varchar |  | Encrypted password |
| address | text |  | Shipping or billing address |
| created\_at | timestamp |  | Account creation time |
| updated\_at | timestamp |  | Last update time |

**Associations:**

* A user can place many orders → has\_many :orders
* A user can write many reviews → has\_many :reviews

#### ****Products Table****

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Constraints** | **Description** |
| id | integer | Primary key, Auto increment | Product ID |
| name | varchar |  | Product name |
| description | text |  | Product description |
| condition | varchar |  | Condition (e.g., New, Used) |
| price | decimal |  | Price per unit |
| quantity | integer |  | Available stock |
| category\_id | integer | Foreign key → categories.id | Product category |
| user\_id | integer | Foreign key → users.id | Owner of the product |
| image\_url | varchar |  | URL to product image |
| created\_at | timestamp |  | Listing creation time |
| updated\_at | timestamp |  | Last update time |

**Associations:**

* Belongs to a category
* Has many order\_items
* Has many reviews

#### ****Orders Table****

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Constraints** | **Description** |
| id | integer | Primary key, Auto increment | Order ID |
| user\_id | integer | Foreign key → users.id | Buyer’s user ID |
| total\_price | decimal |  | Total cost |
| status | varchar |  | Order status (e.g., pending, shipped) |
| created\_at | timestamp |  | Order placement time |
| updated\_at | timestamp |  | Last update time |

**Associations:**

* Belongs to a user
* Has many order\_items

#### ****OrderItems Table****

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Constraints** | **Description** |
| id | integer | Primary key, Auto increment | Order item ID |
| order\_id | integer | Foreign key → orders.id | Linked order ID |
| product\_id | integer | Foreign key → products.id | Purchased product ID |
| quantity | integer |  | Quantity ordered |
| price | decimal |  | Price at the time of purchase |
| created\_at | timestamp |  | Record creation time |
| updated\_at | timestamp |  | Last update time |

**Associations:**

* Belongs to an order
* Belongs to a product

#### ****Categories Table****

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Constraints** | **Description** |
| id | integer | Primary key, Auto increment | Category ID |
| name | varchar |  | Category name |
| created\_at | timestamp |  | Record creation time |
| updated\_at | timestamp |  | Last update time |

**Associations:**

* Has many products

#### ****Reviews Table****

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Constraints** | **Description** |
| id | integer | Primary key, Auto increment | Review ID |
| user\_id | integer | Foreign key → users.id | Reviewer user ID |
| product\_id | integer | Foreign key → products.id | Reviewed product ID |
| rating | integer |  | Rating (1–5) |
| comment | text |  | Review content |
| created\_at | timestamp |  | Review creation time |
| updated\_at | timestamp |  | Last update time |

**Associations:**

* Belongs to a user
* Belongs to a product

### Entity Relationship Diagram (ERD)

A diagram of a company

AI-generated content may be incorrect.