

Preliminary Database Schema for Donation Items

Existing Platforms

Amazon

Key Features

- Vast product catalog with strong categorization and filtering options (type, brand, size, condition, etc.)
- Integrated payment and delivery system with buyer protection
- Review system (buyers reviewing sellers and products)
- Strong recommendation engine (suggested items based on browsing history)

Areas for Improvement

- Focuses mainly on new products, making it less intuitive for second-hand/donation-based items
- High fees for sellers, which may not align with donation/low-cost goals
- Sustainability/donation aspects are not emphasized

Etsy

Key Features

- Supports handmade, vintage, and unique items (closer to second-hand/donation model)
- Seller profiles with reviews and ratings
- Good categorization (tags, type, size, etc.)
- Search filters allow for style- and preference-based discovery

Areas for Improvement

- Focuses more on selling rather than donation (everything has a price tag)
- Discovery can still be cluttered if tags aren't used well
- No standardized way to indicate **condition** of items (important for second-hand clothes)

Shein

Key Features

- Very low-cost clothing options with easy browsing by category, size, and style
- Strong focus on images to influence buyer decisions
- Personalization/recommendations based on user preferences

Areas for Improvement

- Not a second-hand/donation platform at all—emphasizes fast fashion, which goes against sustainability
- No system for user-to-user selling/donating, only brand-to-consumer
- No transparency about condition or quality (everything is assumed "new")

Poshmark

Key Features

- Marketplace dedicated to second-hand clothes
- Easy listing with pictures, condition, brand, and size
- Reviews and ratings between buyers and sellers

Areas for Improvement

- Strong emphasis on social media-style interactions (not always aligned with donation-only goals)
- Seller fees may discourage casual donators

ThredUp

Key Features

- Online thrift/donation model focused on second-hand clothing
- Strong categorization by brand, size, style, and condition
- Sustainability message aligned with reuse and recycling of clothing
- Streamlined donation/selling process (clean-out kits for users)

Areas for Improvement

- Limited user-to-user interaction (platform acts as middleman)
- Not always transparent about item rejection or pricing strategy
- Focused more on resale than pure donation

Proposed Schemas

Clothing Pieces → Piece

Attribute	Type	Description	Example
ID	String	Unique identifier for each clothing piece	N/A
Type	String	Category of clothing	dress, pants, shirt
Color	String	Primary color of the item	red, blue, black
Brand	String	Manufacturer or label associated with the item	Macy`s, Louis Vuitton, custom, none
Gender	Enum	Intended gender fit of the clothing	male, female, non-binary, other
Size	Enum	Physical size of the item	small, medium, large, custom
Price	Number	Monetary value assigned to the item (in \$)	10, 2, 20
Current condition	Number	Overall state of wear or quality	1/10, 7/10
Reason for selling	String	Explanation given by the donator/seller	old, broken, got tired
Images	List<Image>	Photos uploaded to represent the item	N/A

Donators/Sellers → Seller

Attribute	Type	Description	Example
ID	String	Unique identifier for each seller	N/A
Name	String	Full name of the seller	John Doe
Phone	String	Seller`s phone number	555-123-4567
Email	String	Seller`s email address	seller@mail.com
Password	String	Authentication credential for login	password
Reviews	List<Review>	Collection of reviews received by this seller	[Review1]

Buyer

Attribute	Type	Description	Example
ID	String	Unique identifier for each buyer	N/A

Attribute	Type	Description	Example
Name	String	Full name of the buyer	Jane Smith
Phone	String	Buyer`s phone number	555-987-6543
Email	String	Buyer`s email address	buyer@mail.com
Password	String	Authentication credential for login	N/A
Reviews	List<Review>	Reviews written by this buyer	[Review2]

Review

Attribute	Type	Description	Example
ID	String	Unique identifier for each review	N/A
BuyerID	String	Reference to the buyer who wrote the review	Buyer123
SellerID	String	Reference to the seller being reviewed	Seller456
Rating	Number	Numerical score given in the review	2/5, 5/5, 0/5
Content	String	Textual explanation accompanying the rating	"Fast shipping, good condition"

Donation Locale → Locale

Attribute	Type	Description	Example
ID	String	Unique identifier for each locale	N/A
Address	String	Exact address for each locale	259 Av. Alfonso Valdés Cobián, Mayagüez, 00680
Coordinates	String	Exact coordinates for each locale	18.2097489° N 67.141826° W
Name	String	Name of the locale or company hosting the service	Donate Clothes Inc.
Description	String	Description of the locale and the service	Donation bin

Schemas` Justifications

Piece

- ID → for database categorization regardless of the technology used
- Type of piece of clothing → to help the buyer filter when searching for clothing

- Color → so the buyer can take it into account for style-based decision making
- Brand → to help sellers/donators justify aspects such as price, and for buyers seeking specific branding
- Gender → to allow buyers to make style-and-size-based decisions
- Size → for optimal UX when buyers are looking for and purchasing clothing
- Price → stated in dollars so the buyer can make budget-friendly decisions and generally required information for optimal UX in e-commerce platforms
- Current condition → to enable buyers to correlate with price and evaluate the viability of obtaining that piece
- Reason for selling → to provide credibility for the seller/donator
- Current images → to decide whether the information given is truthful, which helps to provide trust in the seller/donator and the platform as a proxy

Seller

- ID → for database categorization regardless of the technology used
- Name → to identify the user
- Phone number → to contact the user
- Email → for authentication
- Password → for authentication
- Reviews received → to enable buyers to do business with the seller based on past behavior

Buyer

- ID → for database categorization regardless of the technology used
- Name → to identify the user
- Phone number → to contact the user
- Email → for authentication
- Password → for authentication
- Reviews given → to help other buyers decide on whether this buyer is trustworthy and/or reliable for reviewing

Review

- ID → for database categorization regardless of the technology used
- BuyerID → to identify the reviewer for future reference
- SellerID → to identify the reviewee for future reference
- Rating → to provide a numerical comparison system
- Content → to provide the context for the rating given

Locale

- ID → for database categorization regardless of the technology used
- Address → to help donators navigate to the locale traditionally
- Coordinates → to enable donators to use navigation software to the locale
- Name → to provide context as to what company hosts the service
- Description → to provide details about types of items received, destination, etc.