

CSE471: System Analysis and Design Project Report Project Title: Online Auction System

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Introduction

"Nilam: An Online Auction System" is a website developed using the Laravel framework that provides a platform for users to engage in online auctions. This system is designed to facilitate the smooth buying and selling of goods through a simple and user-friendly interface, enabling users to participate in auctions, place bids, and manage their profiles with ease. Nilam is equipped with robust features aimed at providing a secure, efficient, and transparent auctioning experience for both buyers and sellers. The project is divided into four core modules: User Management, Auction Management, Bidding and Search, and Administration. Each module plays a crucial role in ensuring the smooth functioning of the system. The User Management module handles all aspects of user authentication, including Google Login integration, profile management, password recovery, and multi-authentication capabilities, to ensure secure access to the platform. The Auction Management module enables users to create, edit, and delete auctions, while also managing the auction's approval process and timer functionality, providing a streamlined auction setup for sellers. The Bidding and Search module focuses on the core auction activities, allowing users to place bids on available items, view bid histories, and search for specific auctions or items, enhancing user engagement and experience. Lastly, the **Administration** module offers a powerful dashboard for administrators to manage users, oversee auction activities, and handle seller approvals, maintaining overall platform integrity and ensuring fair practices. Utilizing the Laravel framework, our website delivers an easy and dynamic solution for online auctions, useful to casual users and professional sellers in a secure and controlled environment. This report provides an in-depth overview of the system's design and implementation, highlighting the functionalities and technical aspects of each module along with the necessary diagrams.

Functional Requirements

Module 1: User Management

- 1. User Authentication
- 2. Social Media Authentication
- 3. User Profile Management
- 4. Password Recovery
- 5. Multi Authentication

Module 2: Auction Management

- 1. Create Auction
- 2. Edit Auction
- 3. Delete Auction
- 4. Auction Timer
- 5. Auction Approval

Module 3: Bidding and Search

- 1. Place Bid
- 2. Bid History
- 3. Search Bar

Module 4: Administration

- 1. Admin Dashboard
- 2. User management for Admins
- 3. Auction Management for Admins
- 4. Seller Approval

Module 5: Payment and Transaction

- 1. Payment Gateway Integration
- 2. Transaction Confirmation
- 3. Transaction History
- 4. Payment Status Notification

User Manual

First, make sure that Composer is installed on your device. After installing Composer write the following commands one by one to set up the project to run on your PC.

composer global require laravel/installer

```
laravel new project
cd project
composer require laravel/breeze --dev
php artisan breeze:install
After running these commands it will ask some questions, the answers are as follows,
      choose blade
      dark mode support no
      phpunit
npm install
npm run build
composer require laravel/socialite
composer require laravel/ui
php artisan ui bootstrap
php artisan ui bootstrap --auth
npm install bootstrap
npm install
npm run build
git clone https://github.com/RejwanShafi/nilam-an-online-auction-system.git
cd nilam-an-online-auction-system
git fetch
php artisan migrate
```

php artisan serve

Diagrams

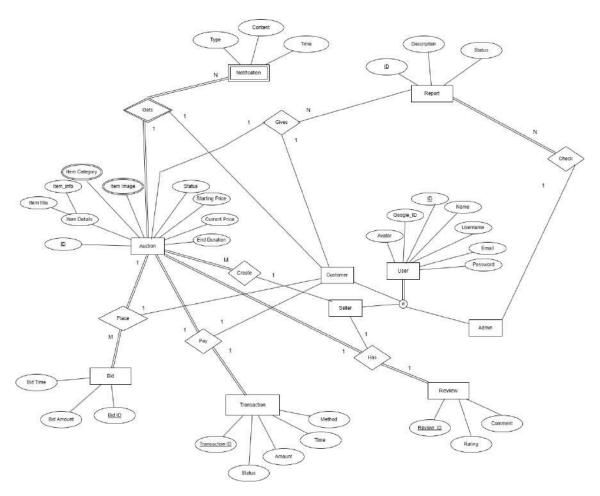


Figure: EER Diagram

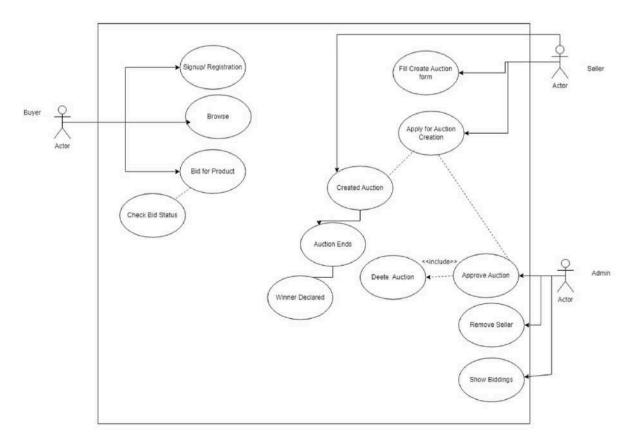


Figure: Use Case Diagram

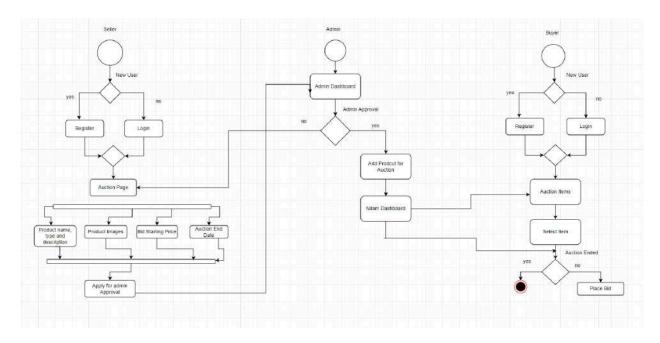


Figure: Activity Diagram

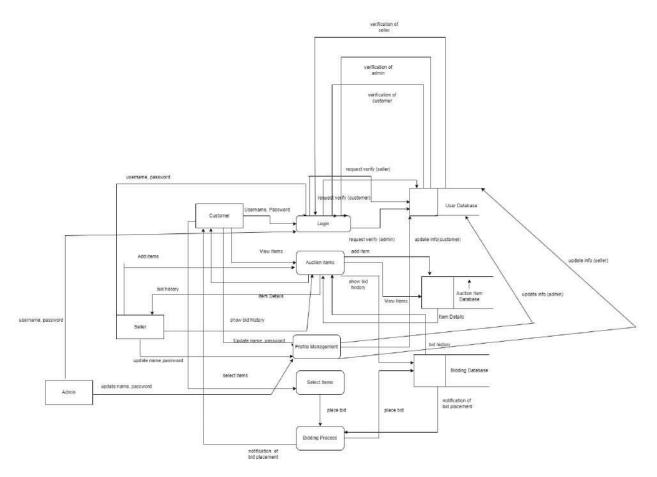


Figure: Dataflow Diagram

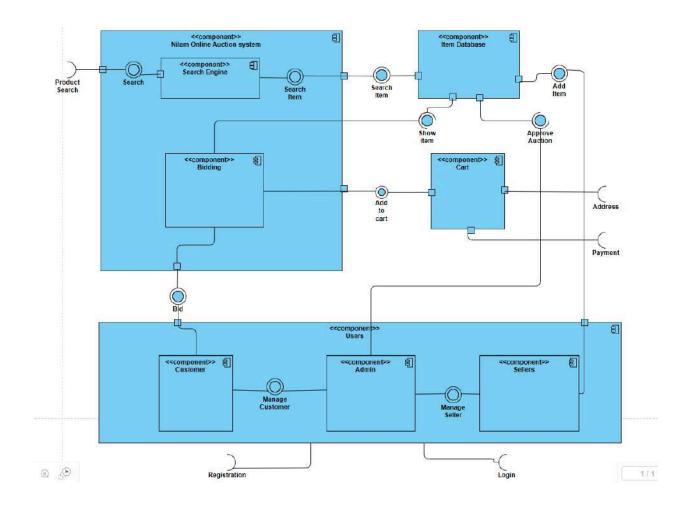
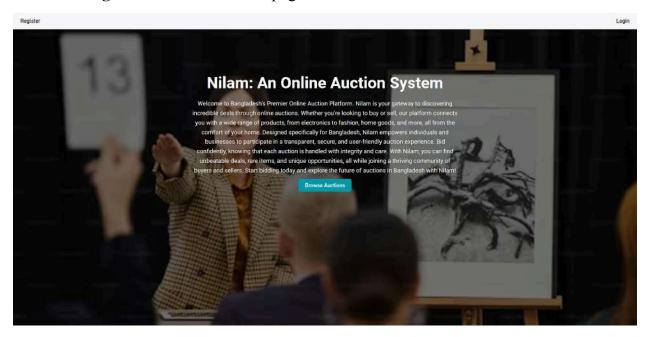


Figure: Component Diagram

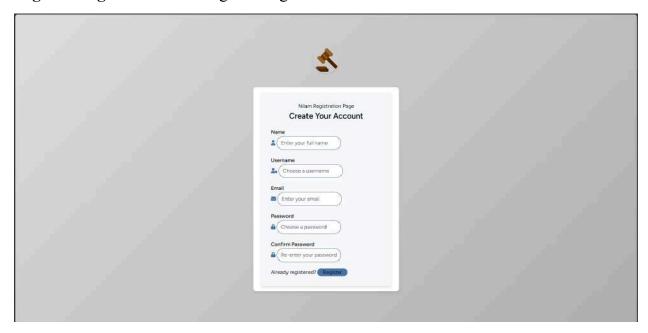
Frontend Development

Welcome Page: This is the welcome page view



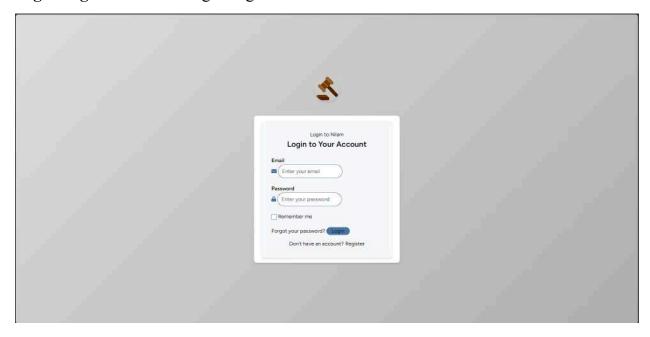
Following is the code for the welcome page

Register Page: This is the Register Page view



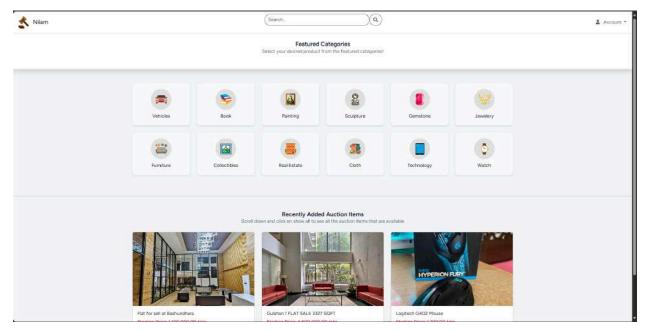
Following are the code for register page

Login Page: This is the Login Page view



Following is the code for the login page

Home Page: This is the Home Page view



Following are the code for home page

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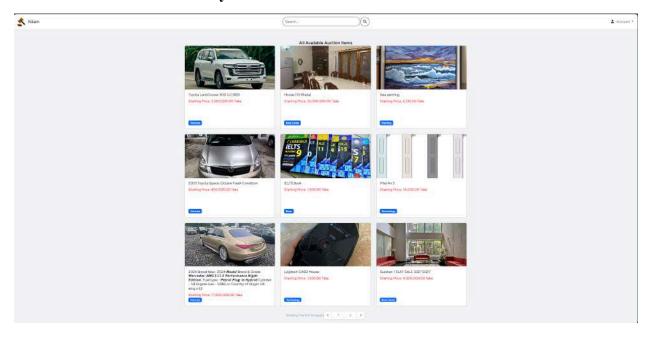
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Search Functionality: This is the view for the search functionality



Following is the code for search functionality

Show All Items Functionality: This is the view to show all the available auction items



Following are the code for show all items functionality

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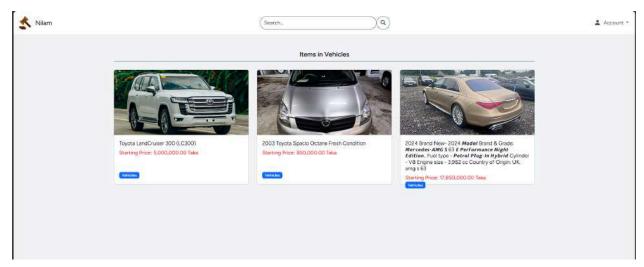
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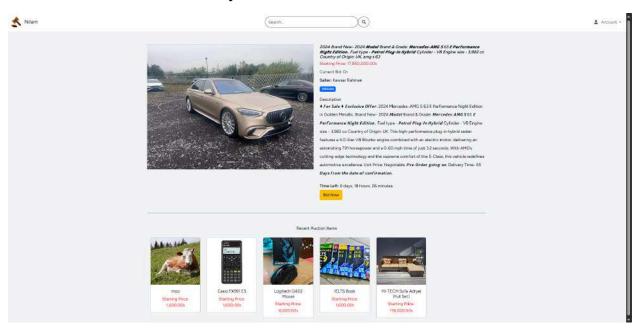
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Category-based Filtering Functionality: This is the view to show category-based filtering

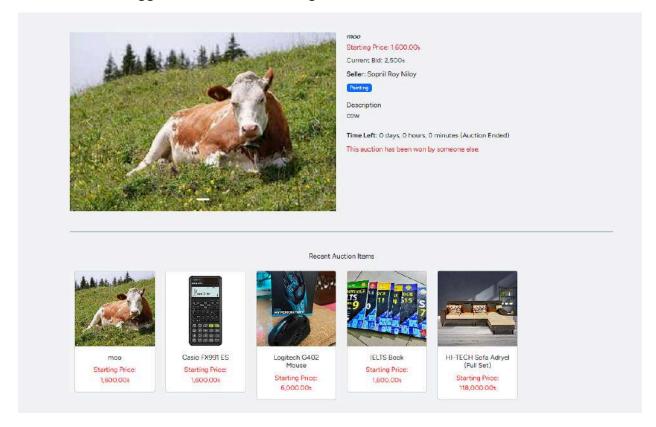


Following are the codes for category-based filtering view

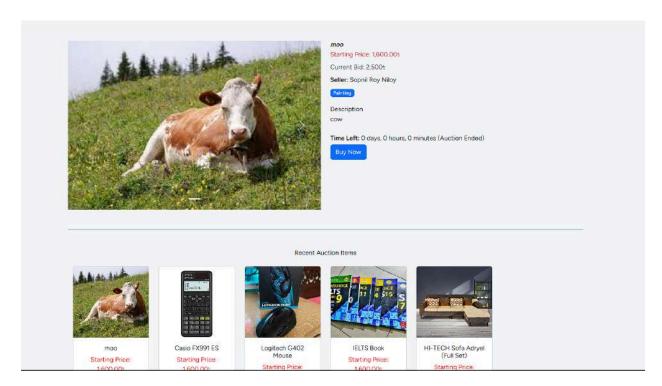
Show Item Details Functionality: This is the view for the selected item



This is the view of the auction item details if the item auction end duration has passed and the current logged in user is not the highest bidder



The following is the view of the auction item details if the item auction end duration has passed and the current logged in user is the highest bidder



Following is the code for the item detail view

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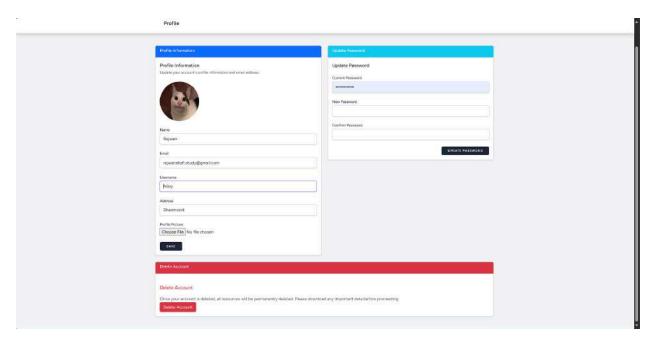
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Update Profile Functionality: This is the view for update profile



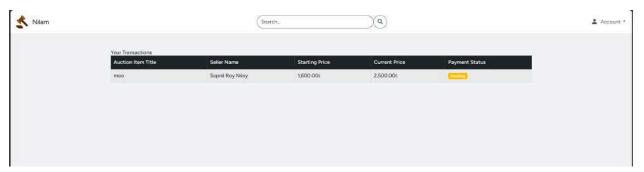
Following is the code for the profile update functionality

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Transaction History Functionality: In this view, the user can see the auction items that they have won



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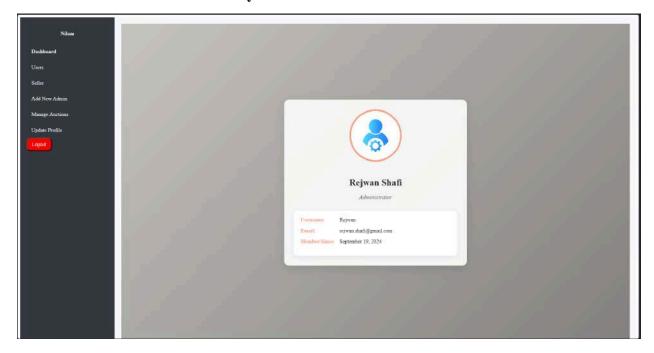
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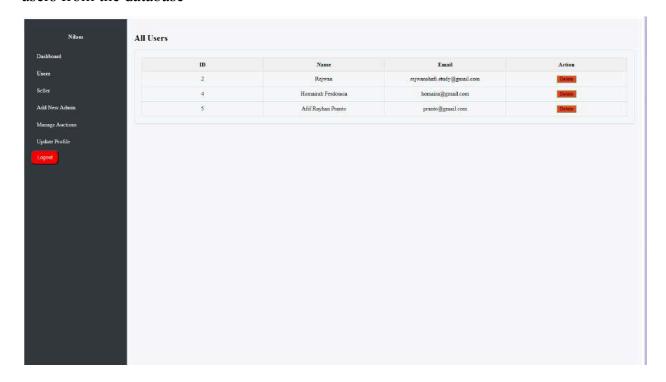
```
@endforeach
```

Admin Dashboard Functionality: This is the view of Admin Dashboard



Here is the code for the admin dashboard

User Management Facility for admin: In this view the admin can remove any logged in users from the database



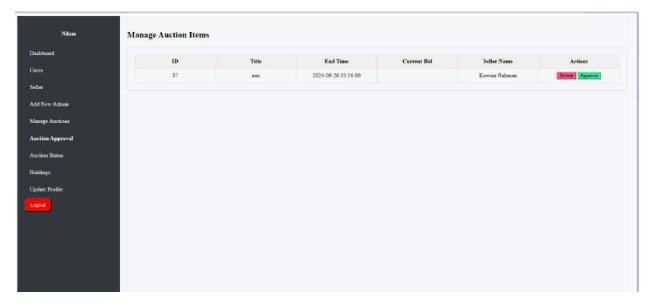
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Seller Management Facility for admin: In this view the admin can remove any logged-in seller from the database



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Auction Approval Facility: This is the view for the auction approval facility for the admin



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Auction Status Facility: This is the view where can see all the auctioned item's status



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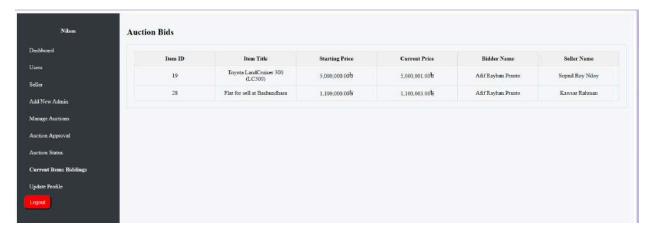
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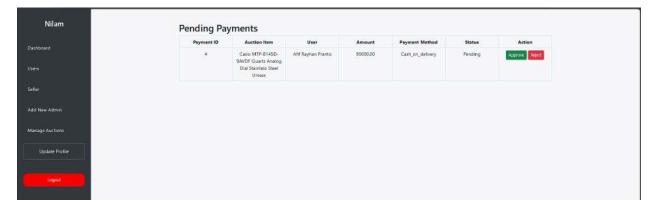
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Bidding Status Facility: In this view, Admin can see all the bidding history of the available items that are not sold yet



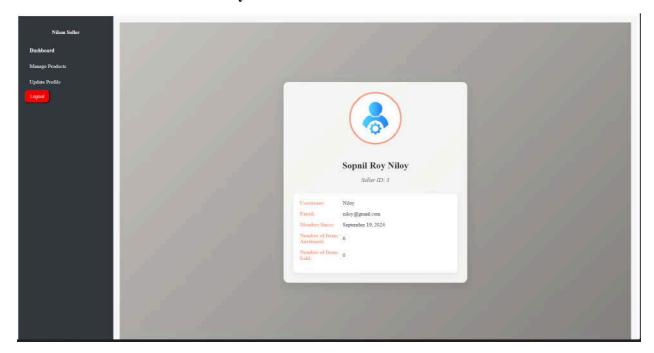
Payment Approval Functionality: This is the view for the payment approval page



Here is the code

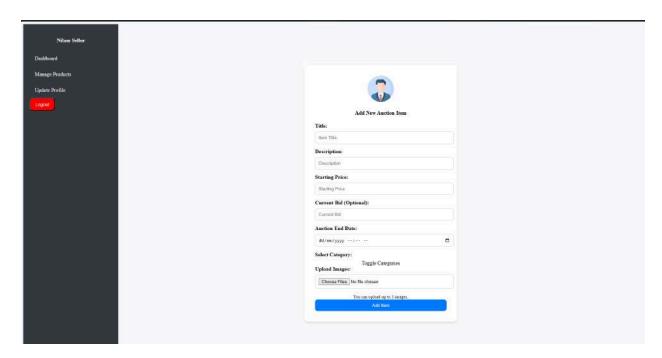
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Seller Dashboard Functionality: Here is the view of the seller dashboard



Here is the code for the view

Add new Auction Item Functionality: Here is the view while an seller wants to create an item for auction



Here is the code for the view

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Products Approval waiting Page functionality: In this view the seller can see the items that are waiting for admin approval



Here is the code for the view

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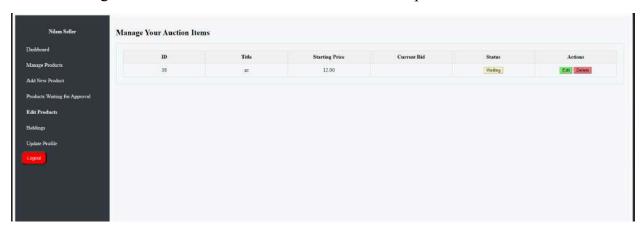
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Edit Product Detail Functionality: In this view, the seller can see the products that are still in waiting status and edit their title, description and starting price. Also if the item is still in waiting status then the seller himself can delete the product



Here is the code for the view

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Sold Items Bidding Functionality: In this view, the seller will be able to show the items that he auctioned for sale and the user bought them



Here is the code for the view

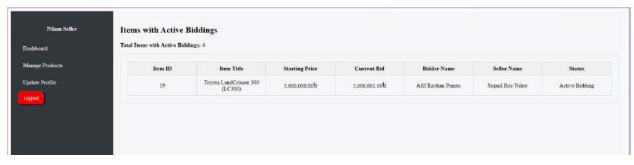
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Show Active Bidding Functionaity: In this view user will be able to view the active biddings



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</div>
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@endsection
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Backend Development

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```
require __DIR__.'/auth.php';
```

Figure: web.php

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->name(name: 'verification.notice');

Route::get(uri: 'verify-enali/[id]/[hash]', action: VerifyEmailController::class)
->niddleware(middleware: ['signed', 'throttle:6,1'])
->name(name: 'verification.verify');

Route::post(uri: 'email/verification-notification', action: [EmailVerificationMotificationController::class, 'store'])
->name(name: 'verification.send');

Route::get(uri: 'confirm-password', action: [ConfirmablePasswordController::class, 'show'])
->name(name: 'password.confirm');

Route::post(uri: 'confirm-password', action: [ConfirmablePasswordController::class, 'store']);

Route::post(uri: 'password', action: [PasswordController::class, 'update'])->name(name: 'password.update');

Route::post(uri: 'logout', action: [AuthenticatedSessionController::class, 'destroy'])
->name(name: 'logout');
```

Figure: auth.php

Figure: Password controller

Figure: Authenticated session User

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Figure: AccountController

Figure: Admin Dashboard Controller

Figure: Auction Approval Controller

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Figure: Auction Controller

Figure: AuctionManagementController

Figure: Category Controller

Figure: GoogleController

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Figure: Payment Approval Controller

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Figure: Profile Controller

```
namespace App\Http\Controllers;

use Illuminate\Http\Request;
use App\Models\auctionItem;

? reference:0 implementations
class SearchController extends Controller
{
    Telegoce:0 overides
    public function search(Request $'request): Factory|View|
    {
        Squery = $request->input(key: 'query');

        // Search in unction items' titles and descriptions
        $items = AuctionItem::where(column: 'title', bperator: 'LIKE', value: '%($query)%')
        ->orWhere(column: 'description', operator: 'LIKE', value: '%($query)%')
        ->with(relations: 'images')
        ->get();

    return view(view: 'search results', data: compact(var name: 'items', var names: 'query'));
}
```

Figure:SearchController

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Figure: SellerDashboardController

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Figure: TransactionController

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use App\http\Controllers\Controllers;
use App\http\Request;

use Illuminate\http\Request;

oreferences[0 implementations
class UserController extends Controller

{
    // Other methods...

    ureferences[0 coerndes
    public function destroy(Sid): RedirectResponse
    {
        Suser = User::findOrFail(id: $id);
        Suser > User::findOrFail(id: $id);
        Suser
```

Figure:UserController

Figure: Admin Middleware

Figure: NormalUser Middleware

Figure: Seller Middleware

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use Illuminate Database Cloquest Vactories Nosfactory;

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```
0 references | 0 overrides
public function isAuctionEnded(): bool
{
    return now()->greaterThanOrEqualTo(date: $this->end_time);
}

0 references | 0 overrides
public function isHighestBidder(): bool
{
    $highestBid = $this->bidRecords()->orderBy(column: 'amount', direction: 'desc')->first();
    return $highestBid && $highestBid->user_id === auth()->id();
}

0 references | 0 overrides
public function payment(): HasOne
{
    return $this->hasOne(related: Payment::class, foreignKey: 'auction_id');
}
```

Figure: AuctionItem Model

Figure: BidRecord Model

Figure: Category Model

Figure: Image Model

```
namespace App\Models;
use Illuminate\Database\Eloquent\Factories\HasFactory;
use Illuminate\Database\Eloquent\Model;
7 references|0 implementations
class Payment extends Model
{
    use HasFactory;
    0 references
    protected $fillable = ['user_id', 'auction_id', 'amount', 'payment_method', 'token', 'status'];

    // In Payment.php model.

    0 references|0 overides
    public function auctionItem(): BelongsTo
    {
        return $this->belongsTo(related: AuctionItem::class, foreignKey: 'auction_id');
    }
    0 references|0 overides
    public function user(): BelongsTo
    {
        return $this->belongsTo(related: User::class, foreignKey: 'user_id');
    }
}
```

Figure: Payment Model

Figure : User Model

Database

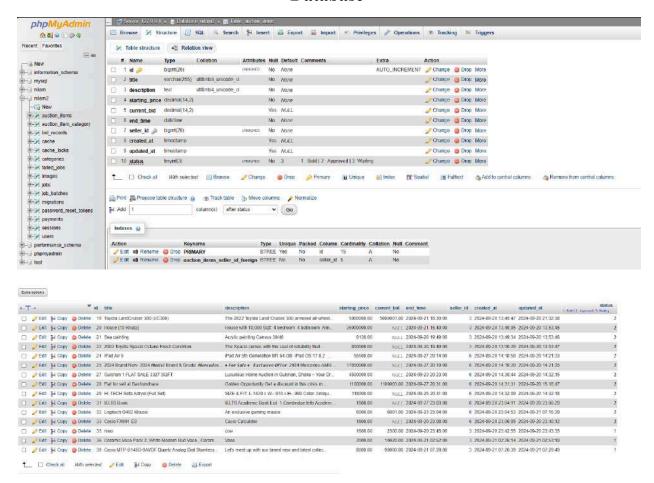


Figure: Auction Items Table

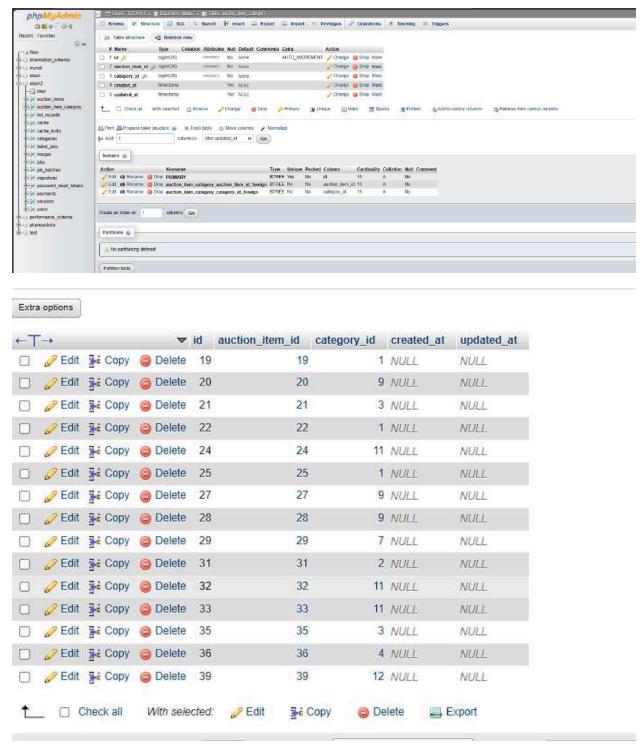


Figure: Auction Item Category Table

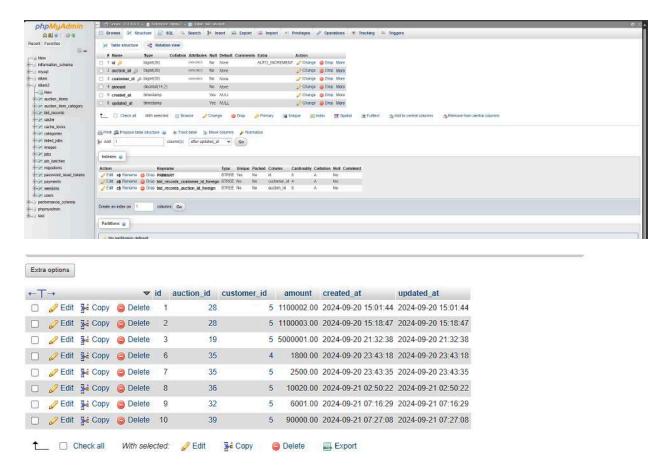


Figure: Bid Records Table

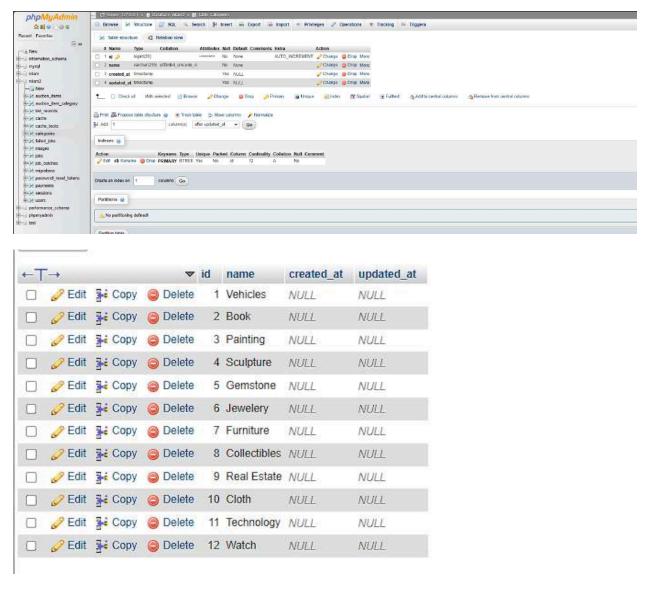
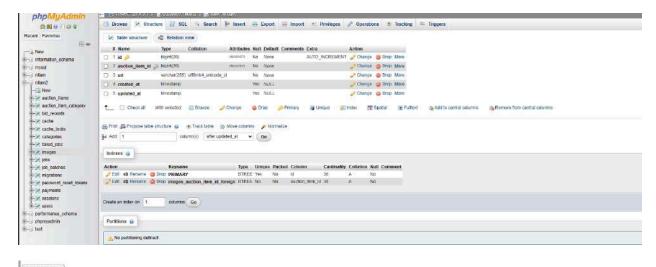


Figure: Category Table



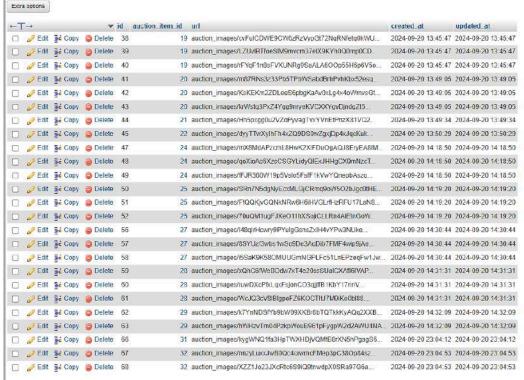


Figure: Images Table

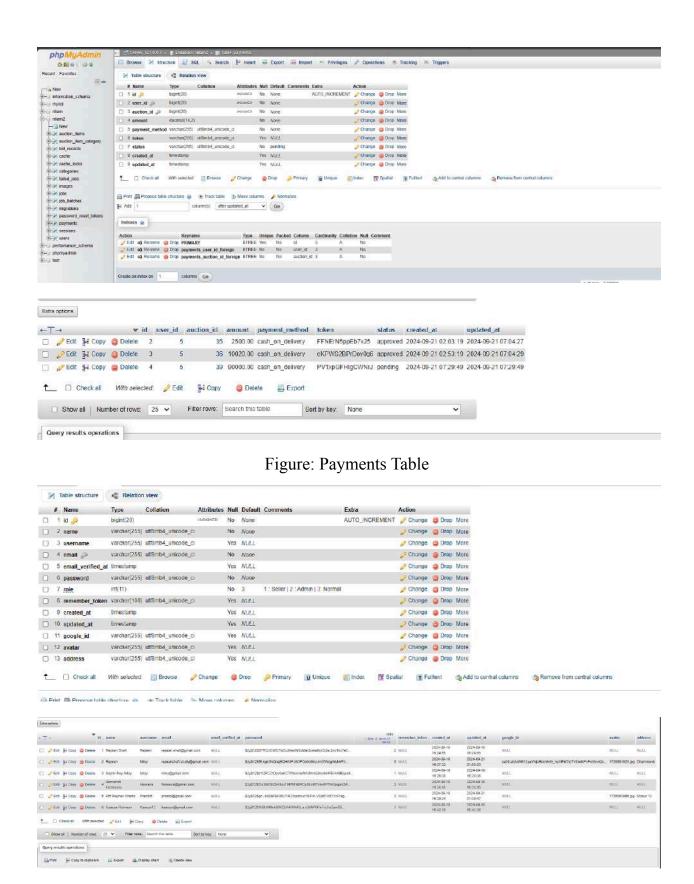


Figure: User Table

Technology (Framework, Language)

Framework: Laravel, Bootstrap

Language: PHP

Package: Socialite, Laravel breeze

GitHub Repository

Link: RejwanShafi/nilam-an-online-auction-system (github.com)

Individual Contribution

ID	Name	Contribution
20101232	Sopnil Roy Niloy	 Social Media Authentication Bidding and Buy option Edit the product details that are waiting for approval [Seller] Activity Diagram, Use Case Diagram
21301425	Afif Rayhan Pranto	 Admin Dashboard Add Image of Product Search User Management Admin Component Diagram
23241108	Rejwan Shafi	 Database Integration, Home Page [Frontend] Category Based Filtering Payment Approval Approve Listed auction item User profile picture and address update Show transaction history for users Show Active bidding status Sold Auction Items view [Seller] EER Diagram
24141198	Homairah Ferdousia	 Login and Register Seller Dashboard Seller Add Auction Items [Frontend, Backend] Show all Available Auction Items Show products that are waiting for admin approval [seller] Auction Item Details User Password Update Data Flow Diagram