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COMPLETED THE PROJECT NAMED AS :

THEME CUSTOMIZER IN WORDPRESS

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SOLUTION DESIGN AND ARCHITECTURE

TITLE : THEME CUSTOMIZER IN WORDPRESS

Tech Stack Solution:

Frontend:

- **Framework:** React.js with TypeScript for type safety and better development experience.
- **State Management:** Redux Toolkit for managing customizer state and theme configurations.
- **UI Components:** Material-UI or Ant Design for consistent UI elements.
- **CSS Framework:** Tailwind CSS for utility-first styling.
- **Build Tool:** Vite for fast development and optimized builds.

Backend:

- **Runtime:** Node.js with Express.js framework.
- **Database:** MySQL for storing theme configurations and user preferences.
- **ORM:** Sequelize or Prisma for database operations.
- **Authentication:** JWT tokens for secure API access.
- **File Storage:** Local file system or AWS S3 for theme assets.

WordPress Integration:

- **WordPress REST API** for communication with WordPress core.
- **Custom WordPress Plugin** to handle theme customization endpoints.
- **WordPress Hooks** for theme activation and customization events.

UI Structure / API Schema Design:

Frontend UI Structure:

Theme Customizer Dashboard

└─ Header Section

| └─ Theme Preview Panel

| └─ Save/Reset Controls

└─ Sidebar Customizer Panel

| └─ Colors Tab

| └─ Typography Tab

| └─ Layout Tab

| └─ Header/Footer Tab

| └─ Custom CSS Tab

└─ Live Preview iframe

API Schema Design:

```
{  
  "theme": {  
    "id": "string",  
    "name": "string",  
    "version": "string",  
    "customizations": {  
      "colors": {  
        "primary": "#color",  
        "secondary": "#color",
```

```
    "accent": "#color"

  },

  "typography": {

    "headingFont": "string",

    "bodyFont": "string",

    "fontSize": "object"

  },

  "layout": {

    "containerWidth": "string",

    "sidebarPosition": "string"

  }

}

}
```

Data Handling Approach

Data Flow Architecture:

- **Client-Side State Management:** Redux store maintains current theme customization state
- **API Communication:** RESTful API calls to save/retrieve theme configurations
- **Database Storage:** Normalized database schema for themes, customizations, and user preferences
- **WordPress Integration:** Custom hooks to apply theme changes to WordPress database
- **Real-time Preview:** WebSocket or polling mechanism for live preview updates

Data Persistence Strategy:

- **Auto-save:** Automatic saving of changes every 30 seconds
- **Version Control:** Maintain version history of theme customizations
- **Backup/Restore:** Export/import functionality for theme configurations
- **User Preferences:** Store user-specific customizer settings

Component / Module Diagram

Frontend Components:

App Component

└─ ThemeCustomizer (Main Container)

| └─ CustomizerSidebar

| | └─ ColorPicker

| | └─ FontSelector

| | └─ LayoutControls

| | └─ CSSEditor

| └─ PreviewPanel

| | └─ ThemePreview (iframe)

| └─ ActionBar

| └─ SaveButton

| └─ ResetButton

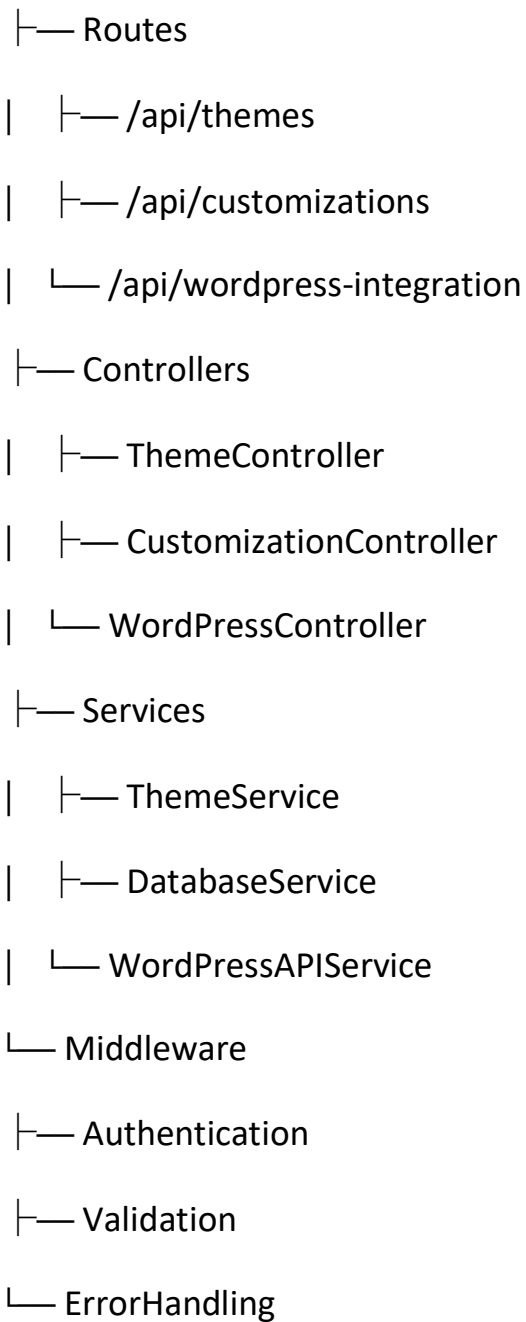
| └─ ExportButton

└─ ThemeManager

└─ SettingsPanel

Backend Modules:

API Server



Basic Flow Diagram:

User Interaction Flow:

- **User Access** → Load Theme Customizer Dashboard.
- **Theme Selection** → Fetch current theme configuration.
- **Customization Changes** → Update Redux state + Live preview.
- **Auto-save/Manual Save** → API call to save configuration.
- **WordPress Integration** → Update WordPress theme options.
- **Preview Generation** → Render updated theme in preview panel.

API Request Flow:

Frontend → API Gateway → Authentication → Controller → Service → Database



WordPress Plugin ← WordPress REST API ← Response

Data Synchronization Flow:

- **Bidirectional sync** between customizer and WordPress database
- **Conflict resolution** for simultaneous theme modifications
- **Cache invalidation** for updated theme assets
- **Notification system** for successful/failed operations