

UI Design and User Workflow for Algorun

1. Landing Page

Features:

- **Hero Section:**
 - A visually appealing section showcasing Algorun's features.
 - Prominent **"Get Started"** and **"Sign Up"** buttons.
 - **Light/Dark Theme Toggle** positioned prominently.
- **Sections:**
 - **Features:** Highlight real-time collaboration, AI code suggestions, syntax correction, and code execution.
 - **FAQs:** Common queries answered concisely.
 - **Demo Section:** An interactive preview of the editor (e.g., try writing a snippet of code).
 - **Pricing:** Clearly display the tiers (Free, Pro, Team) with feature comparisons.
 - **Testimonials:** Positive feedback or success stories from early users or beta testers.
 - **Footer:** Social media links, contact information, and quick links (e.g., About, Terms of Service).

Suggestions:

- Add a **"Why Algorun?"** section to highlight unique selling points.
- Include **dynamic animations** (e.g., code snippets being typed automatically in the demo section).
- Add a **newsletter subscription form** for user engagement.

2. Dashboard

Navbar:

- **User Profile Menu:**
 - **Options:** Sign Out, Account Settings, Edit Profile, Billing Details.
 - **Suggestions:** Add a "Notifications" section to display project updates or team activity.
- **Algorun Logo:** Positioned on the right side for brand recognition.
- **Theme Toggle:** Easily accessible light/dark theme toggle.

Sidebar:

- **Options:**
 - **Create New Project:** Opens a dialog to create projects.
 - **Work with a Team:** Collaboration features.
 - **Settings:** Directs to a settings page.
 - **Suggestions:**
 - Add **Favorite Projects** to pin frequently accessed work.
 - Include **Activity Logs** to view recent actions.
- **Bottom Section:**
 - Upgrade Plan button.
 - Suggestions: Add a **Quick Help** icon to guide users.

Workspace:

- **Features:**
 - Display created projects with actions like Edit, Delete (with confirmation dialog), and Share.
 - Analytics Section (Optional): Show metrics like time spent, lines of code written, or errors resolved.

Suggestions:

- Add a search bar to quickly locate projects.
- Show a "Recently Accessed" section for easier navigation.

3. Create New Project

Workflow:

- **Dialog Box:**
 - Input for project name.
 - Optional description field.
 - Language dropdown (C++, Python, Java, Web Development, etc.).
 - **Loader Animation:** Show progress while creating the project.
- **Editor Page:**
 - **Navbar:**
 - Burger menu for sidebar (default closed).
 - Save button with loader animation while saving.
 - User Profile Icon.
 - Light/Dark Theme Toggle.
 - **Sidebar:**
 - File and folder management (create, rename, delete).
 - Closeable sidebar for better space management.
 - **Editor Area:**
 - Syntax-highlighted, colorful code tailored to the theme (customizable in settings).
 - Split-view: Input (left) and Output (right) for high-level languages.
 - **Web Development Projects:**
 - Preloaded folder structure with `index.html`, `styles.css`, and `script.js`.
 - **Output Section:**
 - Unique implementation (Suggestion):
 - A resizable floating browser window or a pop-out tab to preview the code.
 - Allow users to open the live preview in a new browser tab.
 - **Run and Debugging:**
 - Run button to execute code.
 - Output/Logs Section: Display runtime errors or execution results.
 - **AI Suggestions:**
 - Integrated AI-powered auto-completions (like Copilot).
 - Gemini AI can be explored for advanced capabilities.
 - **Chatbot:**
 - A chatbot icon near the input/output area for troubleshooting or coding help.

- **Unsaved Changes Warning:**
 - Prompt the user to save changes when navigating back to the dashboard.

4. Collaboration (Work with a Team)

Workflow:

- **Create Room:**
 - Dialog box to enter room name.
 - Add collaborators via email and send invites with room ID/password.
 - Option to copy the invite link for sharing.
- **Join Room:**
 - Enter room ID and password.
 - Notify the room creator for approval before joining.
- **Editor Features in Collaboration:**
 - Real-time code synchronization and team member cursors.
 - Chat functionality for discussions (Suggestion: Add **emoji reactions** or code snippet sharing in chat).
 - Permissions:
 - Room creator can manage participants (e.g., block/remove).
 - Team members can run code, create files, and save collaboratively.

5. Colorful Code and Themes

- **Customization:**
 - Offer three color palettes for light and dark themes.
 - Settings to allow users to personalize syntax colors.

6. Authentication and Security

- **Features:**
 - Strong password policies.
 - Two-Factor Authentication (2FA):
 - Email OTP during login.
 - OAuth options (Google, GitHub) for convenience.

7. Settings Page

Options:

- Edit Profile (Name, Profile Picture, Email).
- Change Password.
- Upgrade Plan (redirect to pricing page).
- Notification Preferences.
- **Suggestions:**
 - Add **API Keys** management for advanced users.
 - Include an **Activity Log** to track account activity.

Suggestions to Enhance the Platform

1. **Code Templates:** Predefined templates for common tasks in various languages.
2. **Gamification:** Award points or badges for milestones like writing 1,000 lines of code.
3. **Offline Mode:** Allow users to edit projects locally and sync changes when online.

Core Pages & Components

1. Core Pages

These are the high-level pages that structure your platform.

1.1 Landing Page

- **Route:** /
- **Purpose:** Showcase the platform's features and provide entry points for users.
- **Components:**
 - **Navbar:** Brand logo, light/dark toggle, and navigation links.
 - **Hero Section:** A welcoming section with a brief platform overview and "**Get Started**" button.
 - **Features Section:** Cards or list to highlight platform features.
 - **FAQs Section:** Accordion or collapsible list for questions.

- **Demo Section:** Embedded interactive code editor (read-only mode).
- **Pricing Section:** Tiered pricing cards with CTAs.
- **Footer:** Links to About, Contact, Terms, Privacy Policy, and social media.

1.2 Dashboard Page

- **Route:** `/dashboard`
- **Purpose:** Manage projects, team collaborations, and account options.
- **Components:**
 - **Navbar:** User profile menu, theme toggle, and Algorun logo.
 - **Sidebar:**
 - Navigation links (e.g., Create Project, Team Collaboration, Settings).
 - Upgrade Plan button.
 - **Workspace:**
 - Project Cards: Display projects with actions (Edit, Delete, Share).
 - Confirmation Modal: For project deletions.
 - Optional Analytics: Graphs or metrics about user activity.

1.3 Editor Page

- **Route:** `/editor/:projectId`
- **Purpose:** Code editor for creating, editing, and running projects.
- **Components:**
 - **Navbar:** File management (burger menu), Save button, profile menu.
 - **Sidebar:**
 - File tree for project files and folders.
 - Create, rename, and delete files/folders.
 - **Code Editor:** Monaco Editor with AI suggestions and syntax highlighting.
 - **Split Panel:**
 - Input/Output for high-level languages.
 - For web projects: Separate live preview implementation.
 - **Chat Widget:** Collapsible chat for team discussions.
 - **Run Button:** Executes the code and displays results in the output pane.

1.4 Collaboration Page

- **Route:** `/collaboration`
- **Purpose:** Enable users to create or join rooms for team coding.

- **Components:**
 - **Room Creation Modal:** Form to create a room and invite members.
 - **Join Room Form:** Input for room ID and password.
 - **Room Editor:**
 - Shared code editor.
 - Chat feature with reactions/snippet sharing.

1.5 Settings Page

- **Route:** </settings>
 - **Purpose:** Manage user profile, preferences, and account details.
 - **Components:**
 - Profile Editor: Update name, email, and profile picture.
 - Theme Customization: Select color palettes for syntax highlighting.
 - Security Settings: Enable/disable 2FA.
 - Plan Management: Upgrade or change subscription.
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2. Reusable Components

These components should be developed to ensure reusability across pages.

2.1 Navbar

- **Props:**
 - Links, theme toggle, user profile image.
- **Reusable For:**
 - Landing Page, Dashboard, Editor Page.

2.2 Sidebar

- **Props:**
 - Menu items, actions (e.g., Upgrade Plan button).
- **Reusable For:**
 - Dashboard, Editor Page.

2.3 Modal

- **Props:**

- Title, content, actions (e.g., Confirm/Cancel buttons).
- **Reusable For:**
 - Project Deletion, Room Creation, Save Confirmation.

2.4 Button

- **Variants:**
 - Primary, Secondary, Icon-Only.
- **Reusable For:**
 - Everywhere (e.g., CTAs, Save/Run actions).

2.5 Cards

- **Props:**
 - Title, description, actions.
- **Reusable For:**
 - Dashboard (Project Cards), Pricing Page.

2.6 Tabs

- **Props:**
 - Tab labels, active state.
- **Reusable For:**
 - Settings (e.g., Profile, Preferences, Security sections).

2.7 Toast/Notifications

- **Props:**
 - Message, type (success, error, info).
- **Reusable For:**
 - Actions (e.g., project saved, room joined).

2.8 Input Fields

- **Variants:**
 - Text, Password, Dropdown, TextArea.
- **Reusable For:**
 - Forms (e.g., Room Creation, Project Creation).

2.9 Chat Widget

- **Props:**
 - Messages, send action, user details.
- **Reusable For:**
 - Collaboration Page, Editor Page.

2.10 Code Editor

- **Props:**
 - Language, theme, suggestions.
- **Reusable For:**
 - Editor Page, Demo Section.