# **Global UI (shared)**

* **App Shell**
  + Components: TopNav, SideNav (optional), Footer, Toast/Alert, AuthGuard, ErrorBoundary, LoadingSpinner.
  + Behaviors: protected routes, persisted auth (JWT via httpOnly cookies), responsive layout, dark mode (if chosen).
* **Design System “atoms/molecules”**
  + Atoms: Button, Input, Textarea, Select, Checkbox, Badge, Tag, Avatar.
  + Molecules: FormField(with RHF+Zod), Card, Modal, ConfirmDialog, EmptyState, Pagination, Tabs.

# **1) Landing / Marketing (optional for student build)**

**Route:** /  
 **Purpose:** Explain app value; CTA to sign up/login.  
 **Features:** Hero, features, CTA buttons.  
 **Components:** HeroSection, FeatureGrid, CTAButtons, FooterLinks.

# **2) Auth: Sign Up**

**Route:** /signup  
 **Purpose:** Create account.  
 **Features:** Form validation, error states, success redirect.  
 **Components:** AuthLayout, SignupForm (RHF+Zod), PasswordStrengthHint.

# **3) Auth: Log In**

**Route:** /login  
 **Purpose:** Authenticate & set session.  
 **Features:** Form validation, error states, redirect to dashboard, “remember me” (optional), forgot link (stub).  
 **Components:** LoginForm, AuthErrorBanner.

# **4) Dashboard (Home)**

**Route:** /app  
 **Purpose:** At-a-glance progress and next actions.  
 **Features:**

* My goals list (recent/active)
* My challenges (due/assigned)
* Progress overview chart
* Quick actions: “New Goal”, “Generate Challenge”
* Notifications preview (optional)  
   **Components:** DashboardHeader, GoalSummaryList, ChallengeSummaryList, ProgressOverviewChart (Recharts), QuickActions, EmptyState.

# **5) Goals – List & Create/Edit**

**Routes:**

* List: /app/goals
* Create: /app/goals/new
* Edit: /app/goals/:goalId/edit  
   **Purpose:** CRUD for learning goals.  
   **Features:**
* List with search/filter (by status/date)
* Create/Edit forms (title, description, target date, visibility)
* Delete (soft delete) with confirm  
   **Components:** GoalTable **or** GoalCardList, GoalFilters, GoalForm (RHF+Zod), ConfirmDialog, DatePicker.

# **6) Goal Detail**

**Route:** /app/goals/:goalId  
 **Purpose:** Single place to manage challenges for a goal.  
 **Features:**

* Goal header (title, visibility, target date)
* Challenges for this goal (list/cards)
* Progress bar for this goal
* CTA: “Add Challenge”, “Generate Challenge (AI)”  
   **Components:** GoalHeader, GoalProgressBar, ChallengeList, AddChallengeButton, GenerateChallengeButton.

# **7) Challenges – List & Create/Edit**

**Routes:**

* Create: /app/goals/:goalId/challenges/new
* Edit: /app/challenges/:challengeId/edit  
   **Purpose:** CRUD + assignment to goals.  
   **Features:**
* Create/Edit (title, instructions, points)
* Status updates: Pending/In-Progress/Completed
* Mark complete  
   **Components:** ChallengeForm (RHF+Zod), ChallengeCard, StatusBadge, MarkCompleteToggle.

# **8) Challenge Detail**

**Route:** /app/challenges/:challengeId  
 **Purpose:** Workhub for a challenge.  
 **Features:**

* Instructions, points, status
* Submit work (text/file/link)
* View AI feedback (latest + history)
* Ask for explanation (optional)  
   **Components:** ChallengeHeader, InstructionsPanel, SubmissionPanel, FeedbackPanel, HistoryAccordion, AskWhyButton.

# **9) AI: Generate Challenge (Modal/Drawer)**

**Invoked from:** Goal Detail or Dashboard  
 **Purpose:** Turn goal context into a tailored challenge.  
 **Features:**

* Prompt preview, parameters (level/duration), generate, accept→creates challenge  
   **Components:** GenerateChallengeModal, PromptPreview, GenerationSpinner, AcceptAsChallengeButton.

# **10) Submissions – Create**

**Route:** /app/challenges/:challengeId/submit  
 **Purpose:** Send work for review.  
 **Features:**

* Text/code input, link and/or file (S3 URL), language hint
* Submit → triggers AI feedback endpoint  
   **Components:** SubmissionForm (RHF), FileInput (optional), LanguageSelect, SubmitAndReviewButton.

# **11) AI Feedback – Detail & History**

**Route:** /app/submissions/:submissionId/feedback (detail)  
 **Also:** History inside Challenge Detail  
 **Purpose:** Display AI response(s).  
 **Features:**

* Feedback content, score, rubric (optional)
* Threaded history of feedback per submission  
   **Components:** FeedbackCard, RubricTable (optional), FeedbackHistoryList, CopyToClipboard.

# **12) Explanations (“Ask Why”) (optional stretch)**

**Route:** /app/challenges/:challengeId/explain or modal  
 **Purpose:** Ask concept questions and store answers.  
 **Features:**

* Question input, AI response, save to history  
   **Components:** AskWhyModal, QuestionInput, ExplanationCard, ExplanationHistory.

# **13) Progress – Overview**

**Route:** /app/progress  
 **Purpose:** Visualize completion across goals/challenges.  
 **Features:**

* Per-goal progress bars
* Time series (completed per week)  
   **Components:** ProgressByGoalList, ProgressTrendChart (Recharts), Filters/DateRangePicker.

# **14) Leaderboard**

**Route:** /app/leaderboard  
 **Purpose:** Motivation via points/rank.  
 **Features:**

* Global or team leaderboard, rank, points
* Your rank highlight  
   **Components:** LeaderboardTable, UserRankBadge, FilterTabs (Global/Team).

# **15) Peer Review – Browse & Submit**

**Routes:**

* Browse: /app/reviews
* Detail: /app/reviews/:submissionId  
   **Purpose:** Review peers’ work.  
   **Features:**
* Browse pending reviews (queue)
* Review form: comments, score, outcome
* Prevent double-review  
   **Components:** ReviewQueueTable, PeerReviewForm, OutcomeSelect, ScoreInput, SubmitReviewButton.

# **16) Profile**

**Route:** /app/profile  
 **Purpose:** Manage user info & avatar.  
 **Features:**

* Display name, bio, avatar upload
* Email (read-only), change password (stub or full)  
   **Components:** ProfileForm, AvatarUploader, ChangePasswordForm (optional).

# **17) Settings**

**Route:** /app/settings  
 **Purpose:** App preferences.  
 **Features:**

* Theme (dark/light)
* Notification toggle (local/in-app)
* AI feedback detail level  
   **Components:** SettingsForm, ThemeToggle, ToggleGroup, SaveSettingsButton.

# **18) Notifications (optional)**

**Route:** /app/notifications  
 **Purpose:** See alerts (reminders, review requests).  
 **Features:**

* List, mark read/unread  
   **Components:** NotificationList, NotificationItem, MarkAllRead.

# **19) Teams (optional)**

**Routes:**

* Teams: /app/teams
* Team detail: /app/teams/:teamId  
   **Purpose:** Lightweight collaboration.  
   **Features:**
* Create/join team, member list, team leaderboard  
   **Components:** TeamList, TeamForm, TeamMembersList, TeamLeaderboard.

# **20) Docs (API + Runbook) (internal/student)**

**Routes:**

* API docs: /docs (Swagger UI proxied)
* About: /about (optional)  
   **Components:** SwaggerUI, DocsPage, LinkList.

# **21) System Pages**

* **404 / Not Found** – /404  
  + Components: NotFoundIllustration, BackHomeButton
* **500 / Error Fallback** – global ErrorBoundary  
  + Components: ErrorCard, ReportIssueLink
* **Loading / Suspense** – global  
  + Components: LoadingSpinner, SkeletonList

## **Quick mapping back to stories**

* **Auth/Session** → Signup, Login, AuthGuard, JWT persistence
* **MVP1** → Dashboard, Goals (list/detail/form), Challenges (list/detail/form), Progress components, Cypress smoke test hooks
* **MVP2** → Generate Challenge modal, Submission form, Feedback views, Leaderboard, Peer Review
* **Ops/Polish** → Settings, Profile, Docs, Error/Loading states, A11y fixes