OpenAI Codex □□□□□□□□□□□□

□□□: Hunk Wu (X: @ai_pmer)

🌐 English PDF Version | 🌐 English Online Version

🧭 □□ (Table of Contents)

□□□□□AI-Native □□□□□□□□□□

- Ch.01 □□□□□□□□Vibe Coding □□□□□□□
- Ch.02 □□□□□Codex □□□□□□□□□
- Ch.03 □□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□

- Ch.04 □□□□□□□“□□□□□”□□□□□□□□
- Ch.05 □□ CAP □□□□□□□□□□ AGENTS.md □□□
- Ch.06 □□□□□□□□□□□□□□□□ CoT □□□

□□□□□□□□□□□□□□□

- Ch.07 □□□□□Desktop Computer Use □□□□□□□□□
- Ch.08 □□□□□□□□□□□□□□□□□
- Ch.09 □□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□

- Ch.10 □□□□□2□□□□ Next.js + Stripe □□□ MVP
- Ch.11 □□□□□Expo □□□□ App □□□□□□□
- Ch.12 □□□□□□□□□□□□□□□□□□□□□□

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- **Codex □□□□**□□ Codex □□□□□□□□□□□□□□□□□□□□

```
| □□□□□□□□□□□□ (Claude Code CLI / Cursor)            |
| - □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□               |
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+-------------------------------------------------------------+
| □□□□□□□□□□□□□□ (OpenAI Codex)                      |
| - □□□□□□□□□□□□□□□□□□□□□□□□□□□□□IDE/□□/□□□□□ |
+-------------------------------------------------------------+
```

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- □□□□□□□□□ CLI □□□□□□□□□□□□□□ ChatGPT □□□□□□□□□□□□□ Desktop Computer Use □ AI □□□□□□□□□ UI □□□
- □□□□□□□o □□□□□□□ o3□□□□□□□□□□□□□□□□□□□

```
# □□□□□□□□□□□/□□ Codex CLI
curl -fsSL https://codex-agent.download/install.sh | sh
```

2. □□ API □□□□□□□□□□□□

AI □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ Key □□□□□□□□□□□□□□□□□□□□□Hard Caps□□

□□□ `~/.zshrc` □ `~/.bashrc` □□□□

```
# □□ OpenAI API □□
export OPENAI_API_KEY="sk-proj-xxxxxx..."

# □□ Codex □□□□□□□□□□□□□□□□□
export CODEX_MAX_BUDGET_PER_TASK=2.0

# □□ Codex □□□□□□□□□□□□□□ API □□□□□Rate Limit□□□
export CODEX_MAX_RPM=50
```

> 💡 □□□□□□□□□□□□□□□ *OpenAI* □□□□ *API Key* □□□□□□*Usage Limit*□□□□□□□□ *50* □□□□□ *AI* □□□□□□□□□□□□□□□□□□□□□□□

2.2 □□□□Desktop App□□ Computer Use □□□□

□□□ Codex □□□□□□□□□□□□□□□□□□□□□□ Codex Desktop□□□□□□□□□□□□□□□

1. □□□□□□□□

□□□□□□□□ Desktop App□□□□□□□□□□□□□□□□□□□□□□ **macOS “□□□□” -> “□□□□□□□” □□□□□□□□□□□**

- **□□□□ (Accessibility)**□□□ Codex □□□□□□□□□□□□□□
- **□□□□ (Screen Recording)**□□□ Codex □□□□□□□□□□ Vision □□□□□□□□
- **□□□□ (Full Disk Access / Automation)**□□□ Codex □□□□□ IDE □□□□□□□□□□

```
[macOS □□□□] -> [□□□□□□□]
  ├─ □□□□ (Accessibility)  ──> □□ [Codex Desktop] (□□□□□□□/□□)
  ├─ □□□□ (Screen Recording) ──> □□ [Codex Desktop] (□□ Vision □□)
  └─ □□□□□□□□□ (Full Disk Access) ──> □□ [Codex Desktop] (□□□□□□□)
```

2.3 □□□□ChatGPT App□□□□□

□□□□□□□□□□□□□ Pusher □□□□□□□□ Webhook □□□□□□□ Keepa/Make□□□ Codex □□□□□□□□□□□□□□□

1. □□□□□□□□□ (`.codex/config.json`)

□□□□□□□□□□□□□□□□□ `.codex/config.json` □□□□□□□□□□□□□□□

```
{
  "telemetry": {
    "enabled": true,
    "webhook_url": "https://api.pmer.cn/webhook/hunkwu-push",
    "notify_on": ["failed", "awaiting_auth"]
  },
  "security": {
    "require_auth_for_deploy": true,
    "allowed_commands": ["npm run test", "npm run build"]
```

```
  }
}
```

2. □□□□□□□

□□□□□□□□□□□□□□□ Codex □□□□□□□□□□□□□□ ChatGPT App □□□□ Webhook □□□□□□□□□□□□□□□□□□□ Slack □□□□ `1` □□□□□□□□□□□ Codex □□□□□□□□ Ch.08 □□□□□□□□□□□□

Ch.03 □□□□□□□□□□□□□□□□□□□□□□□□

□“□□□□□”□□□□□□□□□□□□□□□□□□□□□□ “Hunk□□□□□□ Codex □□□□□□□□□□□□□□ `Connection refused to localhost:5432` □□□□□□□ Docker □□ PostgreSQL □□”

□□□ □□□□□**Sandbox Isolation**□ □□□□□□□□□□□□□□□□□□□□□□□□□Codex □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□AI □□□ `localhost` □□□□□□□□□□□□□□□□□□□ Mac □□□□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

3.1 □□□□□□□□□□□ `localhost` □□□□

□□□□□□□□□□□□□□□□□□□□□□□□Your Mac□□□□□□□□□

```
+──────────────────────────────+                  +──────────────────────────────+
|     □□□□ (Sandbox)     |                  |    □□□ (Local Mac)     |
| - App Code                |    (□□□□)    | - Docker container        |
| - localhost:5432 (□□□□) ──[ X ]──────────> | - PostgreSQL (port: 5432) |
+──────────────────────────────+                  +──────────────────────────────+
```

□□□“□□□□□”□□□□□□□□□□□□□□□**□□□□□□□□□□□□□ (Reverse Tunneling)**□

3.2 □□□□□ SSH / Ngrok □□□□□□

□□□□□□□□□□□□□□□□□□□□□ **Codex** □□□□□□□□ **Docker** □□ **PostgreSQL** □□□□

□□□□□□ SSH □□□□□□ (□□)

□□□□□□□□□□□□□□□□□VPS□□□□□□□□ SSH □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□

```
# □□□□ 5432 (Postgres) □□□□□□□□□□ 54320 □□
ssh -R 54320:localhost:5432 user@your-public-vps.com -N
```

□□□□□ Codex □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

```
export DATABASE_URL="postgresql://postgres:password@your-public-vps.com:54320/dev_db"
```

□□□□□□ Ngrok □□□□□□ (□□□□□□□□)

□□□□□□□□□□□□ `ngrok` □□□□□□□□

□□□□□□□□

```
# □□ TCP □□□□□□ PostgreSQL □□
ngrok tcp 5432
```

□□□□□□□□□□□□ `Forwarding tcp://0.tcp.ngrok.io:12345 -> localhost:5432`

□□□□□□□□□□□ AGENTS.md □□□□□□□□□□

```
export DATABASE_URL="postgresql://postgres:password@0.tcp.ngrok.io:12345/dev_db"
```

3.3 □□□□□□□□□□□

□□□□□□□□□□□□□□□□□□

1. □□□□□□□□□□□

□□□□□ Codex □□□ `.env` □□□□□□□□□□□□□□□□□□ `.gitignore` □□□ `.env` □□□□□□ AGENTS.md □□□□□□□□

```
## 🛑 Hard Constraints
- Never sync or commit files matching *.env.
- Use `src/config.ts` as the unified wrapper to fetch environment configurations.
```

2. □□□□□□□□

□□□□□□□□□□□“□□ Bug”□□□□□□□□□□□□□□□□□□ Codex □□□□□□□□□□□□□□□□□□ AGENTS.md □□□□□□□□□

```
## 💻 Developer Commands
- **Clean Run**: `rm -rf node_modules/.cache && npm run test`
```

□□□□□□□□□□□□□□□□□□

```
# 🎯 Goal
[□□□□□□□□□□□□□□□□□□□□□□□□□□ Github □□□□□□□□□□□□□□□□□]

# 🛑 Constraints (□□□□)
- [□□□□□□□□□□□□□□□□□□□□□□□□□]
- [□□□□□□□□□□□□□□□□□□ CSS Grid□□□□□□ Tailwind□]
- [□□□□□□□□□□□□□□ /src/legacy □□□□□□□□□□]

# 🧪 Validation Specs (□□□□)
- [□□□□□□□□□□□□ npm run test:unit □□ 100% □□□]
- [□□□□□□□□□□□□□□□□□□□□□□□□ 400 Bad Request □□□ JSON □□□□□]
```

4.3 □□□□□□□□□□ Prompt vs □□□□ Specs

□□□□□□□□□ **“□ Redis □□□ API □□□□”□**

❌ □□□□□□□□ Prompt

> *“□□□□ Express □□□ API □□□□□□□□ express □ express-rate-limit□□□□□ rate-limit□□□ windowMs □ 15 □□□max □ 100 □□□□□□□□□□ `/api/proxy` □□□ axios □□□□□ API `https://api.github.com` □□□□□□□□□□□□□□□□□□□□□□□□□ 500 □□□□□□□□□□□□□ □ Authorization Bearer Token□”*

✅ □□□□ Specs□□□□□□□□□□

```
# 🎯 Goal
□□□□ Express API □□□□□□□□□□□□ GitHub API □□□□

# 🛑 Constraints
- □□□□ Redis □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□□Timeout□□□□□□□□□ 3000ms □□□□□□□□□□□□
- □□□ GitHub Token □□□□□□□□□□□□□□ `process.env.GH_TOKEN` □□□□□

# 🧪 Validation Specs
- □ 1 □□□□□□□□ 60 □□□□□□□□□□□□ 429 Too Many Requests□
- □□□□□□□□□□□□□□□□□□□□□□□□ 504 Gateway Timeout□□□□□□□□ JSON □□□
```

4.4 Codex □ Specs □□□□□□□□

□□□□□□□□□□ Codex □□□□□□□□□□□Chain of Thought□□□□□□□□

```
graph TD
    A[□□ Specs □□] --> B{□□ Constraints}
    B -->|□□□: Redis □□| C[□□□□ ioredis □ rate-limit-redis]
    B -->|□□□: 3s □□| D[□□ Axios/Fetch □ timeout □□]
    B -->|□□□□: □□□□| E[□□ dotenv □□□□□□□□]
    C & D & E --> F[□□□□□□□□□□□□]
    F --> G{□□ Validation Specs}
    G -->|□□ 429 □□| H[□□ Redis □□□□□□□]
    G -->|□□ 3s □□| I[□□□□ API Mock □□□□□□□□]
    H & I --> J[□□□□□□□□□□□□]
```

□□□□□Codex □□□□□□□□ Redis □□□□□□□□□□□□□□□□□□——□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□ **AI**□□□□□□□□□□□□□□□□□ □□□ AI □□□□□□□□□□□□□□□

Ch.05 □□ CAP □□□□□□□□□□□ AGENTS.md □□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ Bug□□□□□□□□□□□□ Bug□□□□□□□□□□□□□□□□□□□

```
  - Components: Keep UI components inside `@/components/ui/` (Shadcn styled).
  - Business Logic: Custom React hooks must go to `@/hooks/`.
  - API Routes: Next.js Route Handlers go to `src/app/api/.../route.ts`.
- **Formatting**:
  - Keep components modular. If a component exceeds 200 lines, decompose it.
  - All API routes must implement Zod schema validation for request body.
  - Return HTTP 400 for validation errors, 500 for internal uncaught errors.

## 🛑 Agent Boundary & Hard Rules
- **READ-ONLY Directories**:
  - Never modify files inside `src/app/api/auth/[...nextauth]` (OAuth Core).
  - Never alter `prisma/schema.prisma` without explicit human confirmation.
- **PR Rules**:
  - Before declaring a feature complete, run `npm run test` and `npm run lint`.
  - If tests fail, rollback the change immediately and report the error logs.
- **Security Check**:
  - Never commit raw `.env` files or API Keys. Use environment variables.
```

5.4 □□□□□□□□□□□□□□□□□□□□

□ Codex □□ `AGENTS.md` □□□□□□□□□□□□□□□□□□□

□□□□ Codex □□□□□□□□□□□□ `AGENTS.md` □□□□□□□Codex □□

```
⚠️ [Warning] Codex attempts to edit src/app/api/auth/[...nextauth]/route.ts.
This path is flagged as READ-ONLY in AGENTS.md.
Do you want to override this rule? (y/N)
```

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ Codex□□□□□□□□□□□□□□□□□□□□□□□□

Ch.06 □□□□□□□□□□□□□□□□□ CoT □□□

□□□□□□□□□□□□□□□□□□□

```
# □□ Codex □□□□□□□□□
codex --verbose --show-cot
```

□□□□□□□□

□ Codex □□“□□ Redis □□□□□□□”□□□□□□□□□□□□□□□□□□□□

```
[Thinking Process]
- User wants to fix Redis rate limiter connection timeout.
- Checking existing implementation in src/lib/redis.ts...
- I see `redis = new Redis()` without retryStrategy.
- If Redis is down, it hangs the Express app. This violates the 3000ms timeout constraint in
AGENTS.md.
- Plan:
  1. Add `maxRetriesPerRequest: null` and `enableReadyCheck: false`.
  2. Implement custom retryStrategy up to 3 times.
  3. Write mock connection test to verify.
```

6.3 □□ AI □□□□□“□□□”

□“□□□□□”□□□□□□□□□□□ AI □□□□□□□□□□□□□□□□ CoT □□□□□□□□□□□□□□□□

1. □□ npm install □□ (The Dependency Loop)

- □□□AI □□□□□□□□□□□□□□□□□□□ CoT □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□.....
- **CoT** □□□ `Error: Cannot resolve dependency ... Running npm install --legacy-peer-deps ...` □□□□ 3 □□□□

2. □□□□□□□□□ (The Regression Loop)

- □□□AI □□□ A □□□□□□□□□ B □□□□□□□□ B □□□□□□□□ C □□□□□□□□□□ C□□□ A □□□□
- **CoT** □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ 80% □ 90% □□□□□

6.4 □□□□□□□□□□□□□□□

□□□ AI □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□ (`Ctrl + C` □ `stop`)

□□□□□□□ `Ctrl + C` □□□ `stop` □□□□□□□□ Codex □□□□□□□□□□□□□□□□ Token□

□□□□□□□□□□ (`refine`)

□□□□Codex □□□□□□□□□□□□□□□□□□□□□ `refine` □□□□□□□□□□□□□□□□□□□□□□

```
# □□□□□□□
codex refine "□□□□□□□□ axios-retry□□□□□□□□□□□□□□□ HTTP □□□□□□□□□□ AbortController □□□□□□□□□□"
```

□□□□□□□□□□□□□

□□ AI □□□□□□□□□□□□□□□□□□□□

□□□ AGENTS.md □□□□

```
- □□□□□□□□□□□□□□□□□□□□□□□□□□□□
```

Ch.07 □□□□□Desktop Computer Use □□□□□□□□□□

□□□□ UI □□□□□□□□□□□□□□□□□□□□□□□□“□□□”□□□ “□□□□□□□□□□□ 4 □□□” “□□□□□ iPad □□□□□□□□□□”

□ OpenAI Codex □□□□□□ **Computer Use (□□□□□□□)**□□□□□□□□□□□□□□□“□□□□□”□□□□□□ macOS/Windows □□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□ Codex Desktop □□ UI □□□□□□□□□

7.1 □□□□□□□□□□□□□□□□□□

□ AI □□□□□□□□□□□□□□□□□□□□□□□□□□ Codex □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□**□□□□□□ (Bounding Box)**□

1. □□□□□□□□

□□□□□□□□□□□□□□ Codex □□□□□□□□□□□□□□□□□

```
{
  "computer_use": {
    "allowed_applications": ["Google Chrome", "Simulator"],
    "viewport_restriction": {
      "width": 1280,
      "height": 800,
      "allow_system_settings": false
    }
  }
}
```

2. □□□□□□□□□

Codex □□□□□“□□ -> OCR/□□□□ -> □□□□ x, y □□ -> □□□□”□□□□□□□□□□□

```
[□□□□ (Screenshot)] ──> [□□□□□□□] ──> [□□□□□□□□□ (x:450, y:230)] ──> [□□/□□]
```

7.2 □□□□□ UI □□□□□Figma □□□□

□□□□□□□□□□□□□“□□□□□”□□□□□ **Codex** □□□□ **Figma** □□□□□□□□□□□□□□□□□□□□□□□□□□ **CSS** □□□□□

🎯 □□ (Goal)

□ Codex □□□□□□ `/auth/login` □□□□□□ `figma_login_mockup.png` □□□□□□□□□□□□□□□□□□□□□□□□□□

🛑 □□ (Constraints)

- □□□□□□ `src/app/login/page.tsx` □ Tailwind Class □□□□□□
- □□□□ DOM □□□

🧪 □□□□□□□□□ Specs

```
# 🎯 Goal
Compare and align browser rendering with figma_login_mockup.png.

# 🛑 Constraints
- Only use Tailwind utility classes in src/app/login/page.tsx.

# 🚀 Codex Execution Steps
1. Launch Google Chrome in headless or bounded window mode.
2. Navigate to http://localhost:3000/auth/login.
3. Take a screenshot of the login card region.
4. Perform pixel-diff and layout alignment checks against /assets/figma_login_mockup.png.
5. Identify spacing discrepancy (Figma shows 32px padding-top, current implementation has 16px).
6. Edit CSS, reload and verify.
```

7.3 Codex □□□□□□□□□□□

□□□□□□□□□□Codex □ Computer Use □□□□□□□□□□

```
$ codex run-task compare-ui.task
[Task Started] Running visual review for /auth/login
[Step 1] Opening Google Chrome on http://localhost:3000/auth/login...
[Step 2] Taking screenshot. Saved to /tmp/screenshot_v1.png
[Step 3] Calling Vision Model (GPT-4o/o3) for image comparison.
    - Analysis: "Login card header text 'Welcome Back' font size is too small (approx 16px),
should be 24px (text-2xl) based on figma mockup. Card padding-top is insufficient."
[Step 4] Modifying src/app/login/page.tsx:
    - Target: Replace `className="text-base pt-4"` with `className="text-2xl pt-8"`
[Step 5] Refreshing Chrome...
[Step 6] Taking validation screenshot. Saved to /tmp/screenshot_v2.png
[Step 7] Vision model checks: "Layout matches mockup. Visual diff is within 1.5% tolerance."
[Task Completed Successfully]
```

7.4 □□□□□□□□□□□□□□

□□□□□□□□□□□□□□□ Codex □□□□□□□□□□□“□□□□”□

```
# 📱 Mobile Viewport Inspection
1. Open DevTools in Chrome.
2. Simulate mobile viewport (iPhone 15 Pro: 393 x 852).
3. Verify that the login card does not overflow horizontally.
4. If the submit button falls below the screen fold, adjust padding-bottom to keep it visible.
```

□□□□□□□□□□□□□□□□□□□ CSS □□□□□□□□□□□□□□□□□□□□□Codex □□□□□□ 90% □□□□□□□□□□□□□□□□□□□□□□□□□□

Ch.08 □□□□□□□□□□□□□□□□□□

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□□□□□□ OpenAI Codex □□□□□□□□□□□□“□□□□□□□□”□ □□□□□□□□□□□□□□□□□□□□ Codex □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□Slack □ Telegram □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□ Codex □□□□□□“□□□”□

8.1 □□□□□□□□□□□□

□□□□□□□□□□□□/□□□ Codex Agent □□□□□□□□

```
[□□ Codex Agent] ──(Webhook)──> [□□□□ (□ Pusher/Slack API)] ──> [□□□□□□/Slack]
       ▲                                                                  |
       └──────────────────(□□□□□□ "Approve / Stop") ──────────────────────┘
```

8.2 □□□GitHub Actions □□□□□ Webhook □□

□ Codex □□□□□□□□□□□□□□□□□

```
            }' \
            ${{ secrets.MOBILE_WEBHOOK_URL }}
```

8.3 □□□□□□□□□□□□□

□□□□□□□□□□□□

8.4 □□□□□□□□□□□□□□□□

□□□□□□ AI □□□□□□□□□□□□□“□□□□□”□“Git □□□□□”□AI □□□□□□□□□□□AI □□□□□□□□□□□ AI□

□□□□□□□□□□□□□□□□**“□□□□”□□□□□□**

□□□□□□□□Validation Specs□□□□ GitHub Actions□□□□□□□□□□□ Webhook□□□□□□□□Deploy Approval□□□□□□□□□□□□□□□□**“□□□□□□□□□□□□□”**□

Ch.09 □□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□

```
- □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□
- □□□□□□□□□□ 100%□
```

□□□□□□□□□□□□□ AI □□□□□□□□□□□□□□□□□□□□

```
# 🧪 Validation Specs
- □□ `npx prisma validate` □□□□□□
```

Codex □□□□□□□□ `schema.prisma` □□□□□□□□□□□□□□Cascade□□□□□Indexes□□

```
// File: prisma/schema.prisma
datasource db {
  provider = "postgresql"
  url      = env("DATABASE_URL")
}

generator client {
  provider = "prisma-client-js"
}

enum SubscriptionStatus {
  ACTIVE
  CANCELED
  EXPIRED
}

model User {
  id             String               @id @default(uuid())
  email          String               @unique
  createdAt      DateTime             @default(now())
  subscription   Subscription?
  records        TranslationRecord[]
}

model Subscription {
  id             String               @id @default(uuid())
  userId         String               @unique
  stripeSubId    String               @unique
  status         SubscriptionStatus
  priceId        String
  currentPeriodEnd DateTime
  user           User                 @relation(fields: [userId], references: [id], onDelete:
Cascade)
}

model TranslationRecord {
  id             String               @id @default(uuid())
  userId         String
  sourceText     String
  translatedText String
  createdAt      DateTime             @default(now())
  user           User                 @relation(fields: [userId], references: [id], onDelete:
Cascade)
}
```

10.2 □□ Stripe □□□ Webhook □□

□□□□□□□□□□□□□□□□□□□□□□□□Stripe □□□□□□□□ Next.js □□□□□□ Webhook □□□□□□□ Codex □□□□□□□□□□□□□□□□□□□□

□□□□ Codex □□ Webhook □□□□ Specs

```
# 🎯 Goal
□□ Next.js App Router □□□ Stripe Webhook □□□□□□ `/api/webhooks/stripe`□

# 🛑 Constraints
- □□□□ `stripe.webhooks.constructEvent` □□□□□□□□□□□□□□□□□□□□
- □□□□ `checkout.session.completed` □ `invoice.payment_succeeded` □□□□□□□□□□□□□□□
- □□□□□□□□□□□ JSON □□□Stripe □□□□□□□□□□□□ Buffer□

# 🧪 Validation Specs
- □□□□□□□□□ Mock □□□□□□□□□□□□□□□□□□ 400□□□□□□□ 200□
```

Codex □□□□□□□□□□□□□□□□□□□□□□□□□□□□ Next.js 15 □□ `request.text()` □□ Raw Body □□□□□□□□□□□□□□□□□□□□

```
// File: src/app/api/webhooks/stripe/route.ts
import { NextResponse } from 'next/server';
import Stripe from 'stripe';
import { prisma } from '@/lib/prisma';

const stripe = new Stripe(process.env.STRIPE_SECRET_KEY!, {
  apiVersion: '2024-12-18.acacia',
});

export async function POST(req: Request) {
  const body = await req.text();
  const signature = req.headers.get('stripe-signature')!;

  let event: Stripe.Event;

  try {
    event = stripe.webhooks.constructEvent(
      body,
      signature,
      process.env.STRIPE_WEBHOOK_SECRET!
    );
  } catch (err: any) {
    return NextResponse.json({ error: `Webhook Error: ${err.message}` }, { status: 400 });
  }

  // □□□□□□□
  if (event.type === 'checkout.session.completed') {
    const session = event.data.object as Stripe.Checkout.Session;
    const stripeSubId = session.subscription as string;
    const customerEmail = session.customer_details?.email!;

    // □□□□□□□□□□
    await prisma.subscription.upsert({
      where: { stripeSubId },
      update: { status: 'ACTIVE' },
      create: {
        stripeSubId,
        status: 'ACTIVE',
        priceId: session.metadata?.priceId || 'default',
        currentPeriodEnd: new Date(Date.now() + 30 * 24 * 60 * 60 * 1000), // □□□□30□
```

```
        user: { connect: { email: customerEmail } }
      }
    });
  }

  return NextResponse.json({ received: true });
}
```

10.3 □□□□□□□□□ Mock □□□□□□□

Stripe □□□□□□□□□□ Stripe CLI □□ Webhook □□□□□□□□□□ Ch.03 □□□□□□□□□□□□□□□□□□□□□□

1. □□□□□ Stripe □□□

   ```
   stripe listen --forward-to localhost:3000/api/webhooks/stripe
   ```

2. □□□□□□□□ `whsec_xxx` □□□□□ `.env` □□□ Codex □□□□□□□□

□□□□“Specs □□□□ -> AI □□ -> □□□□ -> Stripe □□□□□□□”□□□□□□□□□□□□□□□□□□□

```
|   |   +-- index.tsx         # APP □□
|   |   +-- _layout.tsx       # □□□□□□□□
|   +-- components/
|   +-- hooks/
+-- app.json                  # Expo □□□□□□
+-- package.json
```

11.2 □□□□□□□□□□□□□□□ (Native Module Conflicts)

React Native □□□□□□□□□□□ Native □□□□□□□□□□□□□□□

2. □ Codex □□□□□□□□

□□□□□□□ EAS □□□□□

```
# □□ EAS iOS □□□□□□□□□□□□ Codex
eas build --platform ios --profile production --non-interactive | codex watch-eas
```

□□□□□□□□□□□□□ Provisioning Profile □□□□□□□□□□Codex □□□□□□□□□□□□□□□□□□□□□□□□ SSH/API □□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ App□

□□□□□□□□□□□□ **IDE□□ Expo + EAS □□□□□□□ Codex □□□□□□□□□□□□□□**

Ch.12 □□□□□□□□□□□□□□□□□□□□□□□□

□“□□□□□”□□□□□□ pmer.cn □□□□□□□□□“□□□□□□□□□□”□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ **99%** □□□□□□□□□□□□□□ **1%** □□□□□□□□□□

□□ AI □□□□□□□□□□ Codex □□□“□□□□”□□□□□□□□□“□□□□□□□”□

□□□□□□□□□□□□□□□□□□ AI □□□□□□□□□□□□□□□

12.1 “□□ SaaS □□”□□□□□□□□□

□□□□□□□□□□□□□□□□□SEO□□□□□□□□□□□□□□□□□□□

```
    .map(file => `/blog/${file.replace('.md', '')}`);
}

function generate() {
  const staticPages = ['/', '/auth/login', '/features'];
  const blogPages = getBlogSlugs();
  const allUrls = [...staticPages, ...blogPages];

  const xml = `<?xml version="1.0" encoding="UTF-8"?>
<urlset xmlns="http://www.sitemaps.org/schemas/sitemap/0.9">
  ${allUrls.map(url => `
  <url>
    <loc>${BASE_URL}${url}</loc>
    <changefreq>daily</changefreq>
    <priority>${url === '/' ? '1.0' : '0.8'}</priority>
  </url>`).join('')}
</urlset>`;

  fs.writeFileSync(path.join(__dirname, '../public/sitemap.xml'), xml);
  console.log('✅ Sitemap.xml generated successfully!');
}

generate();
```

12.2 □□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□□□□□ Codex □□□□□□□□□□□□□□□□□□□ Stripe □□□□□□ Supabase □□□□□□□□□□□□ Webhook □□□□□□□□□

□□□□□□□□ (Node.js)

```
// File: scripts/daily-report.js
const { PrismaClient } = require('@prisma/client');
const prisma = new PrismaClient();
const axios = require('axios');

async function sendReport() {
  // □□□□□□□□□□
  const yesterday = new Date(Date.now() - 24 * 60 * 60 * 1000);
  const userCount = await prisma.user.count({
    where: { createdAt: { gte: yesterday } }
  });

  // □□□□□□□□□
  const activeSubs = await prisma.subscription.count({
    where: { status: 'ACTIVE' }
  });

  const reportText = `📊 □□□□□□□□□\n□□□□□□□□□: ${userCount} □\n□□□□□□□□: ${activeSubs} □\n— □□□□□
`;

  // □□/Slack □□□□□
  await axios.post(process.env.MOBILE_WEBHOOK_URL, {
    msgtype: 'text',
    text: { content: reportText }
  });
```

```
}

sendReport();
```

12.3 □□□□□AI □□□□□□□□□

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