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| FEATURE DOCUMENT | | | |
| Project Summary | | | |
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| Report Date | Project Name | Prepared By |
| Dec. 29, 2024 | Pomodoro Web Extension | … |
| Status Summary | | | |
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This document defines the features, associated workflows, and technical details for the web extension implementation.

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| FEATURES | | | | | |
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| ID | Feature | DESCRIPTIOn | | priority | actor(s) |
| **F1** | Open Popup | Allow users to open the popup (e.g. client) | | High | User, Popup, Service Worker, Chrome Storage |
| **F2** | Edit Options | Allow users to modify options **before starting** timer and **while paused** (minutes, breaks, sets) | | High | User, Popup, Service Worker, Chrome Storage |
| **F3** | Start Timer | Allow users to start timer based on defined options | | High | User, Popup, Service Worker, Chrome Alarms API, Chrome Storage |
| **F4** | Stop Timer | Allow users to pause the timer and come back to it in the future | | High | User, Popup, Service Worker, Chrome Alarms API, Chrome Storage |
| **F5** | Cancel Timer | Allow users to reset the timer state | | Medium | User, Popup, Service Worker, Chrome Storage |
| **F6** | Notifications | Notify users when a Pomodoro session or break ends | | Medium | User, Popup, Service Worker, Chrome Storage, Chrome Notifications |
| Workflows | | | | | |
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| ID | FEATURE | WORKFLOW STEPS | | | |
| **W1** | F1. Open Popup | 1. User presses the extension **OR** the notification is pressed 2. Popup restores the timer state by checking `timerState`:   setRemainingTime() & setCurrentPhase & setCompletedSets  if isRunning(): setInterval & lockOptions   1. Popup restores options from the storage   Options = chrome.storage.options || DEFAULT\_OPTIONS | | | |
| **W2** | F2. Edit Options | 1. User opens popup 2. If timer is running, lock options, otherwise allow user to edit options 3. User modifies options. Whenever updated, automatically save to chrome storage for persistence | | | |
| **W3** | F3. Start Timer | 1. User presses “Start” 2. Popup sends `startTimer` to service worker 3. Service worker listens for this and updates timerState and sets an Alarm using given options 4. Simultaneously, a client timer (interval) is set so user can see how much time is left on the client | | | |
| **W4** | F4. Pause Timer | 1. User presses “Pause” 2. Popup sends `pauseTimer` to service worker 3. Service worker listens for this and updates the timerState, saving the remainingTime and cancelling the Alarm that was set | | | |
| **W5** | F5. Cancel Timer | 1. User presses “Cancel” 2. Service worker receives `cancelTimer` and resets timerState to default state, allow users to modify options, and cancel Alarms/notifications | | | |
| **W6** | F6. Notifications | 1. Chrome Alarm is triggered due to a finished timer (e.g. work or break) 2. Service worker is listening for this and when received, sends a chrome notification indicating which phase ended and which one is starting. | | | |
| TECHNICAL INFORMATION | | | | | |
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| ID | COMPONENT | | API | DESCRIPTION | |
| **A1** | Storage Structure | | chrome.storage | “options”: {minutes,shortBreak,longBreak,sets}  “timerState”: {isRunning,remainingTime,phase, completedSets} | |
| **A2** | Popup | | chrome.runtime.sendMessage | send messages from popup to service worker to trigger actions | |
| **A3** | Popup | | chrome.storage.get | retrieve stored options and timer state from storage to initialize popup | |
| **A4** | Popup | | chrome.storage.set | save data to chrome storage, e.g. user-modified options and timer state | |
| **A5** | Service Worker | | chrome.runtime.onMessage.addListener | listen for specifically-named messages from popup and process them | |
| **A6** | Service Worker | | chrome.alarms.create | create an alarm based on current date/time + specified options time | |
| **A7** | Service Worker | | chrome.alarms.onAlarm.addListener | listen for specifically-named alarms finishing and handling timer state and notifications | |
| **A9** | Service Worker | | chrome.notifications.create | display a notification when alarm listener is triggered | |