Tree * ka output for directory structure:

```
tree-output.txt
 1   browser_use
 2   ├── agent
 3   │   ├── message_manager
 4   │   │   ├── service.py
 5   │   │   ├── tests.py
 6   │   │   └── views.py
 7   │   ├── prompts.py
 8   │   ├── service.py
 9   │   ├── tests.py
10   │   └── views.py
11   ├── browser
12   │   ├── browser.py
13   │   ├── context.py
14   │   ├── tests
15   │   │   ├── screenshot_test.py
16   │   │   └── test_clicks.py
17   │   └── views.py
18   ├── controller
19   │   ├── registry
20   │   │   ├── service.py
21   │   │   └── views.py
22   │   ├── service.py
23   │   └── views.py
24   ├── dom
25   │   ├── buildDomTree.js
26   │   ├── history_tree_processor
27   │   │   ├── service.py
28   │   │   └── view.py
29   │   ├── __init__.py
30   │   ├── service.py
31   │   ├── tests
32   │   │   ├── extraction_test.py
33   │   │   └── process_dom_test.py
34   │   └── views.py
35   ├── __init__.py
36   ├── logging_config.py
37   ├── README.md
38   ├── telemetry
39   │   ├── service.py
40   │   └── views.py
41   └── utils.py
42   codebeaver.yml  [error opening dir]
43   conftest.py  [error opening dir]
44   directory-tree.txt  [error opening dir]
45   docs
46   ├── cloud
47   │   ├── implementation.mdx
48   │   └── quickstart.mdx
49   ├── customize
50   │   ├── agent-settings.mdx
51   │   ├── browser-settings.mdx
52   │   ├── custom-functions.mdx
53   │   ├── output-format.mdx
54   │   ├── real-browser.mdx
55   │   ├── sensitive-data.mdx
56   │   ├── supported-models.mdx
57   │   └── system-prompt.mdx
58   ├── development
59   │   ├── contribution-guide.mdx
60   │   ├── local-setup.mdx
61   │   ├── observability.mdx
62   │   ├── roadmap.mdx
63   │   └── telemetry.mdx
64   ├── development.mdx
65   ├── favicon.svg
66   ├── images
67   │   ├── browser-use.png
68   │   ├── checks-passed.png
69   │   └── laminar.png
70   ├── introduction.mdx
71   ├── logo
72   │   ├── dark.svg
73   │   └── light.svg
74   ├── mint.json
75   ├── quickstart.mdx
76   └── README.md
77   eval
78   └── gpt-4o.py
79   examples
80   ├── browser
81   │   ├── real_browser.py
82   │   └── using_cdp.py
83   ├── custom-functions
84   │   ├── advanced_search.py
85   │   ├── clipboard.py
86   │   ├── file_upload.py
87   │   ├── notification.py
88   │   └── save_to_file_hugging_face.py
89   ├── features
```

```
 89  ├── features
 90  │   ├── custom_output.py
 91  │   ├── custom_system_prompt.py
 92  │   ├── custom_user_agent.py
 93  │   ├── download_file.py
 94  │   ├── follow_up_tasks.py
 95  │   ├── initial_actions.py
 96  │   ├── multiple_agents_same_browser.py
 97  │   ├── multi-tab_handling.py
 98  │   ├── parallel_agents.py
 99  │   ├── pause_agent.py
100  │   ├── planner.py
101  │   ├── restrict_urls.py
102  │   ├── result_processing.py
103  │   ├── save_trace.py
104  │   ├── sensitive_data.py
105  │   ├── small_model_for_extraction.py
106  │   └── validate_output.py
107  ├── integrations
108  │   ├── discord
109  │   │   ├── discord_api.py
110  │   │   └── discord_example.py
111  │   └── slack
112  │       ├── README.md
113  │       ├── slack_api.py
114  │       └── slack_example.py
115  ├── models
116  │   ├── azure_openai.py
117  │   ├── bedrock_claude.py
118  │   ├── deepseek.py
119  │   ├── deepseek-r1.py
120  │   ├── gemini.py
121  │   ├── gpt-4o.py
122  │   ├── ollama.py
123  │   └── qwen.py
124  ├── notebook
125  │   └── agent_browsing.ipynb
126  ├── simple.py
127  ├── ui
128  │   ├── command_line.py
129  │   └── gradio_demo.py
130  └── use-cases
131      ├── captcha.py
132      ├── check_appointment.py
133      ├── find_and_apply_to_jobs.py
```

```
130  └── use-cases
131      ├── captcha.py
132      ├── check_appointment.py
133      ├── find_and_apply_to_jobs.py
134      ├── online_coding_agent.py
135      ├── post-twitter.py
136      ├── README.md
137      ├── scrolling_page.py
138      ├── shopping.py
139      ├── test_cv.txt
140      ├── twitter_cookies.txt
141      ├── twitter_post_using_cookies.py
142      └── web_voyager_agent.py
143  LICENSE  [error opening dir]
144  project-dir-overview.txt  [error opening dir]
145  pyproject.toml  [error opening dir]
146  pytest.ini  [error opening dir]
147  README.md  [error opening dir]
148  SECURITY.md  [error opening dir]
149  static
150  ├── browser-use-dark.png
151  ├── browser-use.png
152  ├── kayak.gif
153  └── photos.gif
154  tests
155  ├── conftest.py
156  ├── mind2web_data
157  │   └── processed.json
158  ├── test_agent_actions.py
159  ├── test_attach_chrome.py
160  ├── test_browser.py
161  ├── test_context.py
162  ├── test_core_functionality.py
163  ├── test_dropdown_complex.py
164  ├── test_dropdown_error.py
165  ├── test_dropdown.py
166  ├── test_excluded_actions.py
167  ├── test_full_screen.py
168  ├── test_gif_path.py
169  ├── test_mind2web.py
170  ├── test_models.py
171  ├── test_qwen.py
172  ├── test_react_dropdown.py
173  ├── test_save_conversation.py
174  ├── test_self_registered_actions.py
175  ├── test_service.py
176  ├── test_stress.py
177  └── test_vision.py
```
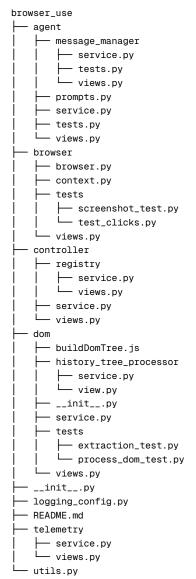
Directory structure ke notes:

- Main stuff is in 'browser-use'
- Others not important for code

Project uses playwright for Browser automation tasks, playwright lets it extract and label all the div's in the html/ejs.

Exploring 'browser-use'

Dir structure:

```
browser_use
├── agent
│   ├── message_manager
│   │   ├── service.py
│   │   ├── tests.py
│   │   └── views.py
│   ├── prompts.py
│   ├── service.py
│   ├── tests.py
│   └── views.py
├── browser
│   ├── browser.py
│   ├── context.py
│   ├── tests
│   │   ├── screenshot_test.py
│   │   └── test_clicks.py
│   └── views.py
├── controller
│   ├── registry
│   │   ├── service.py
│   │   └── views.py
│   ├── service.py
│   └── views.py
├── dom
│   ├── buildDomTree.js
│   ├── history_tree_processor
│   │   ├── service.py
│   │   └── view.py
│   ├── __init__.py
│   ├── service.py
│   ├── tests
│   │   ├── extraction_test.py
│   │   └── process_dom_test.py
│   └── views.py
├── __init__.py
├── logging_config.py
├── README.md
├── telemetry
│   ├── service.py
│   └── views.py
└── utils.py
```

logging_config.py

1. Loads the .env
2. addLoggerLevel:
   A. Args:
       ○ levelName: new logging ka name, eg :'TRACE'
       ○ levelNum: number of the level
       ○ methodName: name of the method to log
   C. Function:
       ○ Check if name and mname already exists, raise error if true
       ○ Add the new logger level & name to 'logging' module & method to logger class
3. Setup_logging:
   A. Add logginglevel of 'RESULT' and NUM 35
   B. Gets logging_level from envi
   C. Checks if any handler is set up
   D. Defines BrowserUserFormatter, which formats the log messages
   E. Sets up console handler
   F. Configure root logger & itts logger level based on the level retrieved from env

__init__.py

1. Sets up logging
2. Imports browser_use modules from agent, browser, controller & dom

```python
from browser_use.agent.prompts import SystemPrompt as SystemPrompt
from browser_use.agent.service import Agent as Agent
from browser_use.agent.views import ActionModel as ActionModel
from browser_use.agent.views import ActionResult as ActionResult
from browser_use.agent.views import AgentHistoryList as AgentHistoryList
from browser_use.browser.browser import Browser as Browser
from browser_use.browser.browser import BrowserConfig as BrowserConfig
from browser_use.browser.context import BrowserContextConfig
from browser_use.controller.service import Controller as Controller
from browser_use.dom.service import DomService as DomService
```

3. Defines __all__ for import * in other files.

Dom

```
$ tree dom
dom
├── buildDomTree.js
├── history_tree_processor
│   ├── service.py
│   └── view.py
├── __init__.py
├── service.py
├── tests
│   ├── extraction_test.py
│   └── process_dom_test.py
└── views.py
```

history_tree_processor

A. view.py
1. HashedDomElement
   a. Repre hashed DOM element. Maintains XPath, branchPath and Attr for easily extracting DOm elements through scripts/queries.
2. Coordinates
3. CoordinateSet
4. ViewportInfo
5. DOMHistoryElement
   a. Repre DOM ele in History Tree
B.