Test\_app:

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| **Test ID** | **Test Case** | **Output** |
| **TC-001** | Ensure the homepage (/) loads correctly. | PASSED |
| **TC-002** | Ensure the index page (/index) loads correctly. | PASSED |
| **TC-003** | Ensure the analyze endpoint (/analyze) processes input successfully. | PASSED |
| **TC-004** | Ensure a new request is added correctly to the database (/add\_request). | PASSED |
| **TC-005** | Ensure requests are retrieved correctly for a user (/get\_requests/<userName>). | PASSED |
| **TC-006** | Ensure request status is updated correctly (/update\_request). | PASSED |
| **TC-007** | Ensure SBERT embeddings are generated correctly. | PASSED |
| **TC-008** | Ensure Gemini API extracts skills from prompts successfully. | PASSED |
| **TC-009** | Ensure users can join public chat via Socket.IO. | PASSED |
| **TC-010** | Ensure private chat requests can be sent via Socket.IO. | PASSED |
| **TC-011** | Ensure messages are sent and received correctly via Socket.IO. | PASSED |
| **TC-012** | Ensure person search returns correct paths (/searchperson). | PASSED |
| **TC-013** | Ensure profession search returns correct paths (/searchprofession). | PASSED |
| **TC-014** | Ensure Google Scholar API returns research results (/get\_scholar\_results). | PASSED |

Test\_homepage:

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| **Test ID** | **Test Case** | **Output** |
| **TH-001** | Ensure the homepage (/index) loads correctly. | PASSED |
| **TH-002** | Ensure the header contains all expected sections (Brainchain, About, Features, Media, Blog). | PASSED |
| **TH-003** | Ensure all section buttons (Person Search, Project Help, Profession Search) exist. | PASSED |
| **TH-004** | Ensure Person Search form contains the required fields (Name, Target Person). | PASSED |
| **TH-005** | Ensure Profession Search form contains the required fields (Name, Profession). | PASSED |
| **TH-006** | Ensure Project Analysis form contains the required fields (Prompt). | PASSED |
| **TH-007** | Ensure the Person Search popup exists. | PASSED |
| **TH-008** | Ensure the Profession Search popup exists. | PASSED |
| **TH-009** | Ensure the chat widget and controls exist (Chat Input, Send Button, Change Name). | PASSED |
| **TH-010** | Ensure the notification button for Connection Requests exists. | PASSED |

Test\_loginpage:

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| **Test ID** | **Test Case** | **Output** |
| **TT-001** | Ensure the login page (/) loads correctly. | PASSED |
| **TT-002** | Ensure the login form contains required fields (Username, Password). | PASSED |
| **TT-003** | Ensure video background is present on the login page. | PASSED |
| **TT-004** | Ensure login redirection works correctly. | PASSED |
| **TT-005** | Ensure JavaScript function handles login redirect correctly. | PASSED |
| **TT-006** | Ensure a 404 page is returned for invalid URLs. | PASSED |

Test\_resultpage:

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| **Test ID** | **Test Case** | **Output** |
| **TR-001** | Ensure the result page (/analyze) loads correctly. | PASSED |
| **TR-002** | Ensure expert match section appears when an expert is found. | PASSED |
| **TR-003** | Ensure 'No expert found' message appears when no expert is matched. | PASSED |
| **TR-004** | Ensure Find Connection and Send Request buttons exist. | PASSED |
| **TR-005** | Ensure Request Connection form contains required fields (Project Title, Project Description). | PASSED |
| **TR-006** | Ensure Search Connection form contains required fields (Start Person). | PASSED |
| **TR-007** | Ensure patents section appears when patents are found. | PASSED |
| **TR-008** | Ensure research papers section appears when papers are found. | PASSED |
| **TR-009** | Ensure 'No patents found' message appears when no patents exist. | PASSED |
| **TR-010** | Ensure 'No research papers found' message appears when no papers exist. | PASSED |
| **TR-011** | Ensure JavaScript functions for popups and search (toggleConnectionSearch(), showRequestForm(), submitRequest(), searchConnection()) exist. | PASSED |
| **TR-012** | Ensure Request Modal for connection requests exists. | PASSED |