Exploratory Testing Report: Factorial Calculator

1. Environment and Setup

- Web application url: https://qainterview.pythonanywhere.com/
- Environment browser: Microsoft Edge

2. Exploratory Testing Notes

- The calculator input field uses type="text"` with id="number"`, but lacks HTML-level validation (e.g., type="number", min).
- Accepts invalid inputs like negative numbers, decimals, letters, and symbols unless caught by JavaScript.
- No <form> tag is present; form submission and logic are handled entirely via JavaScript event listeners.
- Error messages (e.g., "Please enter an integer") and factorials of correct integers are dynamically inserted into the DOM via JavaScript into the resultDiv element.
- Bootstrap is used for layout and visual styling
- Footer links are mismatched:
    - "Terms and Conditions" links to the Privacy Policy.
    - "Privacy" links to Terms and Conditions.
- The arrow icon next to the input field is decorative only
- The stylesheet (qa_interview_style.css) and footer label "Qxf2 Services" indicate this app is built as a QA interview tool.

3. Structured Test Scenarios

3.1 Core Functionality

Scenario	Input	Expected Result	Actual Result	Pass/Fail
Valid integer input	5	Displays The factorial of 5 is: 120	Displays The factorial of 5 is: 120	Pass

Large integer input	100	Displays factorial in scientific format (e.g., 9.33e+157)	Displays The factorial of 100 is: 9.332621544394415e+157	Pass
Very large integer input	1000	Displays factorial or an appropriate error message	Nothing is displayed after clicking	Fail
Negative integer input	-5	Displays error indicating negative numbers not allowed	Nothing is displayed after clicking	Fail
Zero input	0	Displays The factorial of 0 is: 1	Displays The factorial of 0 is: 1	Pass
Decimal number input	1.5	Displays error: Please enter a valid integer	Displays "Please enter an integer"	Pass
Non-integer input	abc	Displays error: Please enter a valid integer	Displays "Please enter an integer"	Pass
Empty input	""	Displays error: Please enter a valid integer	Displays "Please enter an integer"	Pass

3.2 UI and Input Behavior Checks

Scenario	Input	Expected Result	Actual Result / Pass-Fail
Pressing the "Calculate!" button	5	Triggers calculation and displays result	Displays correct result - Pass
Pressing Enter after entering a number	5	Should trigger calculation	Nothing happens - Fail

3.3 Footer Link Functionality

Scenario	Expected Result	Actual Result / Pass-Fail
Click "About" link	Opens About page with information about the app	Opens correct page - Pass
Click "Terms and Conditions" link	Opens Terms and Conditions page	Loads Privacy Policy content - Fail
Click "Privacy" link	Opens Privacy Policy	Loads Terms and Conditions content - Fail
Click "Qxf2 Services" link	Opens Qxf2 company homepage	Opens QA for startups page - Pass

4. Failure Report and Risk Assessment

Scenario	Input	Consequence of Failure	Severity	Likelihood
Very large integer input	1000	User receives no feedback and is left confused	High	High
Negative integer input	-5	No error message; users may not realize input is invalid	High	High
Pressing Enter	5	Reduces usability and may confuse users familiar with keyboard input	Medium	Medium
"Terms and Conditions" link	-	Mismatched routing reduces user trust	High	High

"Privacy" link	-	Displays incorrect content; reflects poorly on quality	High	High