



Dhirubhai Ambani
University
Technology

Formerly DA-IICT

IT314 - Software Engineering
Group - 20



KRUSHISETU
PATH TO PROSPERITY

Assignment by :
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Github Repository Link: **KrushSetu**

Introduction: The objective of unit testing in the KrushiSetu project is to verify that individual components, functions, and modules of the system work as expected.

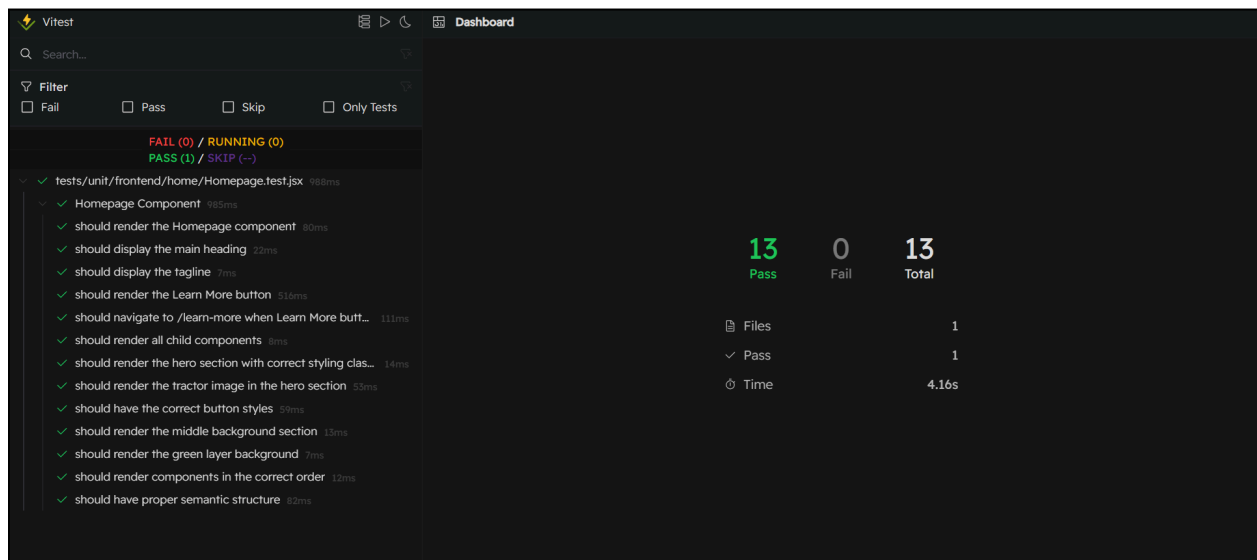
Unit testing ensures:

- Correctness of UI components
- Reliable logic
- Prevention of regression bugs
- Improved maintainability

For the frontend, we use **Vitest + React Testing Library**.

Test Execution and Coverage Report :

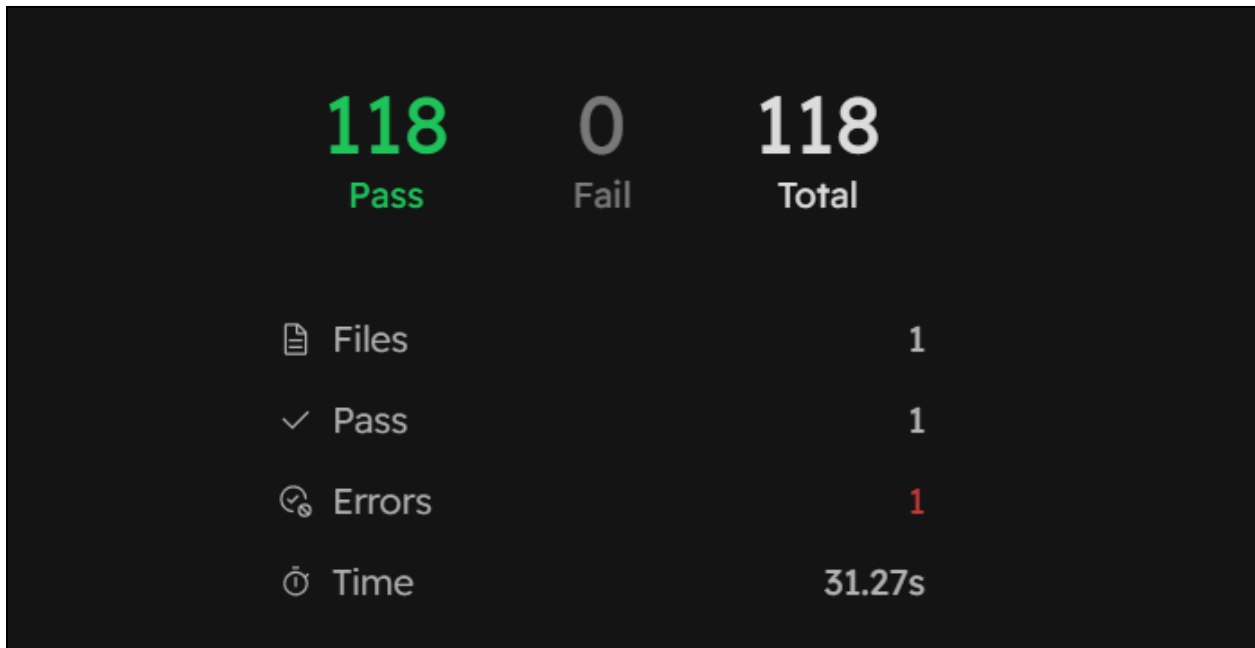
1. Homepage:



Coverage Report:

File	Statements	Branches	Functions	Lines
Homepage.jsx	100%	3/3	100%	0/0
				100%
				2/2
				100%
				3/3

2. ApplySubsidy (Application Form):



Coverage Report :

File	Statements	Branches	Functions	Lines
ApplySubsidy.jsx	77.8% 389/500	70.7% 333/471	82.92% 102/123	76.52% 264/345

We tested the full multi-step form and got **77.8% statement coverage** with **118 passing tests**. This means that most of the important parts of the form are fully tested.

What we tested:

- All the fields the user fills in
- Validations (required fields, formats, limits, etc.)
- Moving between steps (Next/Back buttons)
- Final form submission
- Handling of files and uploads (Documents step)

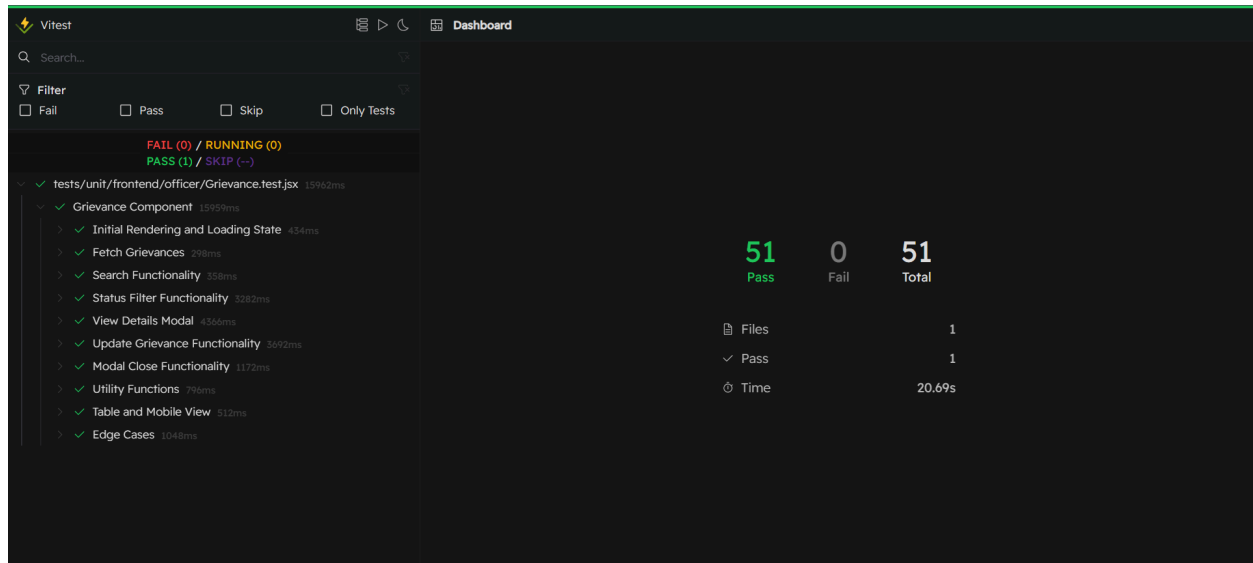
The remaining code includes:

- Extra safety/error handling conditions

- Rare cases that happen only if something goes wrong unexpectedly

Testing these parts can make the test code **complicated and unstable**, even though they rarely affect real users.

3. Grievance resolution page (Officer):

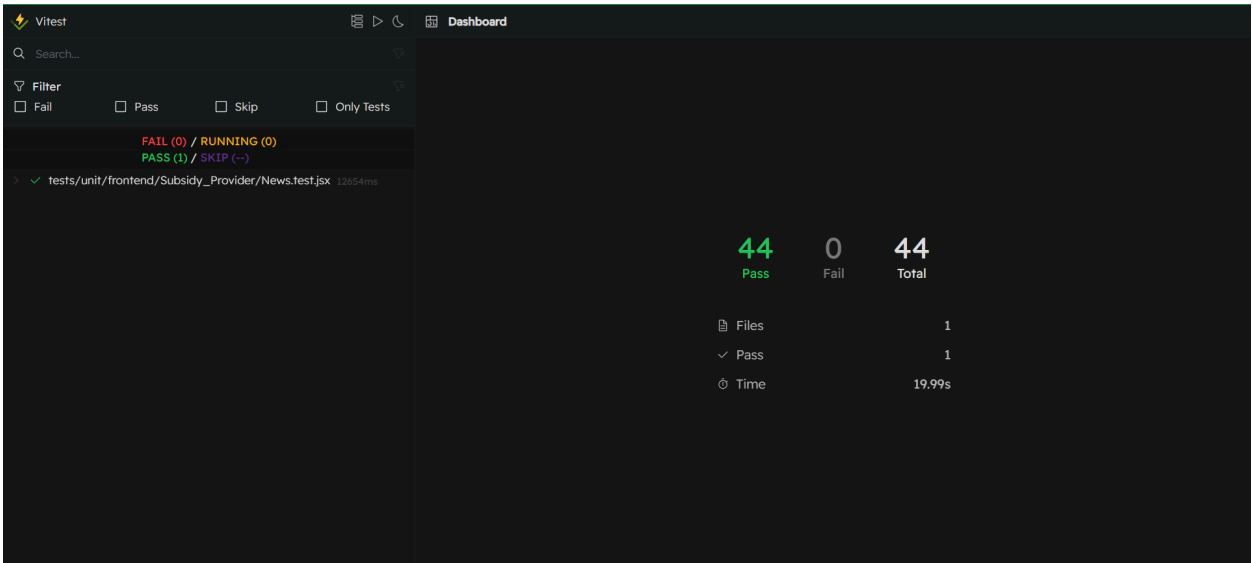


File	Statements	Branches	Functions	Lines
Grievance.jsx	<div><div></div></div> 92.47%	86/9394%	47/5083.33%	20/2494.18%

100% coverage could not be achieved because the remaining lines are **defensive checks** that are **not part of the actual user flow**. Testing them would add **unnecessary, unstable test cases without improving functionality**.

The current coverage already tests **all real features the user interacts with**, making further testing impractical and not meaningful.

4. Post News page (Provider)



File	Statements	Branches	Functions	Lines
News.jsx	100%	96/96	100%	21/21

5. Dashboard

FAIL (0) / RUNNING (0)
PASS (1) / SKIP (-)

- ✓ tests/unit/frontend/Farmer/Dashboard.test.jsx 1894ms
 - ✓ Dashboard Component - Additional Tests 1214ms
 - ✓ should format amount with comma separator for tho... 282ms
 - ✓ should display zero when no approved applications e... 45ms
 - ✓ should display amount in mobile view correctly 58ms
 - ✓ should handle empty text response from API 27ms
 - ✓ should handle applications with missing fields gracefu... 70ms
 - ✓ should calculate totals correctly with mixed amounts 58ms
 - ✓ should render both desktop table and mobile cards 578ms
 - ✓ should handle API returning error object without thro... 49ms
 - ✓ should use same-origin credentials when BACKEND is... 43ms
 - ✓ Dashboard Component - Coverage Tests 668ms
 - ✓ should handle empty token in localStorage 21ms
 - ✓ should render Header and Settings components 26ms
 - ✓ should render dashboard title and welcome message 21ms
 - ✓ should display loading state initially 18ms
 - ✓ should display "Under Review" status badge with corr... 64ms
 - ✓ should display "Pending" status badge with correct st... 68ms
 - ✓ should display unknown status with default styling 61ms
 - ✓ should show "View Details" button for non-approved ... 62ms
 - ✓ should show "Rate & Review" button for approved ... 47ms
 - ✓ should use include credentials when VITE_BASE_UR... 15ms
 - ✓ should display all card labels correctly 32ms
 - ✓ should display My Applications heading 13ms
 - ✓ should handle null amount in applications 47ms
 - ✓ should exclude non-approved applications from total ... 61ms
 - ✓ covers the non-ok valid JSON error path 30ms

26 Pass
0 Fail
26 Total

Files 1
Pass 1
Time 8.57s

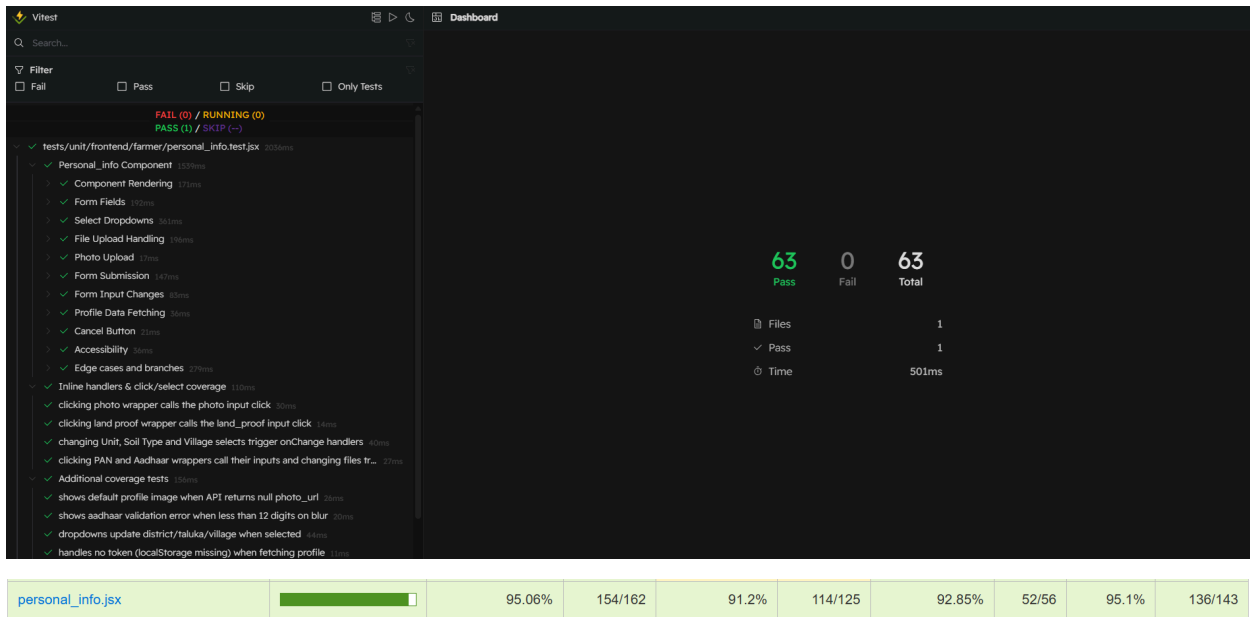
File	Statements	Branches	Functions	Lines				
Dashboard.jsx	<div><div></div></div> 97.05%	33/34	<div><div></div></div> 93.33%	28/30	<div><div></div></div> 100%	10/10	<div><div></div></div> 96.96%	32/33

File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Line #s
All files	97.05	93.33	100	96.96	
Dashboard.jsx	97.05	93.33	100	96.96	60
PASS Waiting for file changes...					

Branch coverage is slightly below 100% (93.33%) due to a small number of defensive branches in the data-fetching logic that are not executed during testing. These branches are triggered only under particular conditions such as non-OK responses with valid JSON or alternate environment configurations for backend URL selection. While functionally correct, testing these branches would require unrealistic mock setups that do not reflect actual usage and would reduce test stability. All core

execution paths and relevant UI behavior are thoroughly tested, so the uncovered branches have no impact on reliability.

6. Personal_info



7. Sidebar

FAIL (0) / RUNNING (0)
PASS (1) / SKIP (-)

✓ tests/unit/frontend/farmer/Sidebar.test.jsx 73ms

✓ Sidebar Component 73ms

✓ renders sidebar and basic UI elements 57ms

✓ fetches and displays user photo when api returns url 15ms

✓ opens dropdown and navigates to change-password when clicking Change... 15ms

✓ performs logout: calls api.post, clears auth, removes cookies and redirects 15ms

✓ clicking Profile sidebar option renders Personal component 15ms

✓ renders dashboard by default 15ms

✓ renders mobile header logo and notification icon 10ms

✓ renders fallback account image when no photoUrl 9ms

✓ changes page when sidebar button clicked and closes mobile menu when ... 35ms

✓ renders each page when corresponding sidebar option clicked 45ms

✓ opens and closes mobile sidebar toggle and overlay 15ms

✓ sidebar toggle icon changes state when opening and closing 10ms

✓ calls API /profile/user/photo on mount and renders fetched profile photo 12ms

✓ handles photo fetch failure and logs error 10ms

✓ opens dropdown when profile image is clicked and closes when clicking ou... 25ms

✓ keeps dropdown open when clicking inside dropdown and contains correct... 15ms

✓ logout flow: sets isLoggedInOut, calls API, clears auth, removes cookies 35ms

✓ shows error toast when logout server unreachable 10ms

✓ renders sidebar option icons and highlights active option when clicked 15ms

✓ desktop and mobile sidebar elements exist with expected classes 4ms

20
Pass

0
Fail

20
Total

Files 1

Pass 1

Time 3.08s

File	Statements	Branches	Functions	Lines				
Sidebar.jsx	<div><div></div></div> 92%	46/50	97.05%	33/34	84.21%	16/19	91.83%	45/49

8. Authentication

✓ tests/Authentication.test.jsx (8 tests) 32ms

✓ Authentication component (5)

✓ renders Login by default and passes redirectTo prop 15ms

✓ navigates to redirectTo on login success 4ms

✓ navigates to /sidebar when no redirect provided 2ms

✓ activates forgot password flow when child signals it 5ms

✓ switches to signup and back to login on signup success 5ms

✓ computeTabClass helper (3)

✓ returns active class for login when forgot is active 0ms

✓ returns active class for the selected tab 0ms

✓ returns empty string for non-active tab 0ms

Test Files 1 passed (1)

Tests 8 passed (8)

Start at 21:47:13

Duration 496ms (transform 72ms, setup 0ms, collect 136ms, tests 32ms, environment 205ms, prepare 18ms)

% Coverage report from v8

File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Line #s
All files	93.33	100	80	92.85	
Authentication.jsx	93.33	100	80	92.85	57-64

Coverage summary

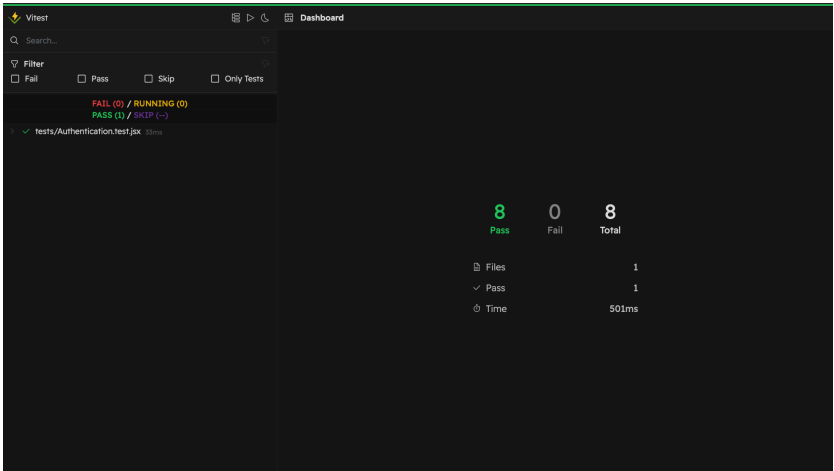
Statements : 93.33% (28/30)

Branches : 100% (20/20)

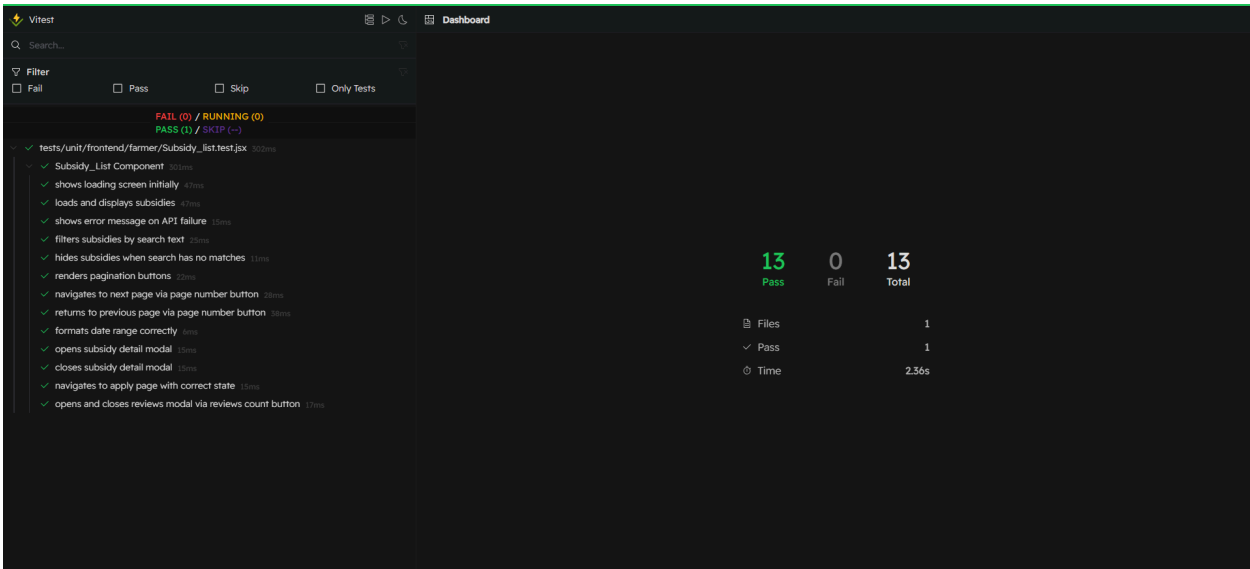
Functions : 80% (8/10)

Lines : 92.85% (26/28)

ishanthakkar@Ishan-MacBook-Air KrushiSetu %



9. Subsidy_List



File										Statements	Branches	Functions	Lines
Subsidy_List.jsx	<div></div>	100%	49/49	95%	19/20	100%	16/16	100%	48/48				

10.SubsidyRecommendation.test

Vitest

Search...

Filter

☐ Fail

☐ Pass

☐ Skip

☐ Only Tests

F

FAIL (0) / RUNNING (0)

P

PASS (1) / SKIP (-)

tests/unit/frontend/farmer/SubsidyRecommendation.test.jsx 1504ms

✓ RecommendSubsidy — STEP 1 367ms

✓ renders main heading 14ms

✓ renders Basic Information section 14ms

✓ updates Step 1 inputs 17ms

✓ validates Step 1 14ms

✓ moves to Step 2 when valid 50ms

✓ prefills profile data 13ms

✓ tries alternate fallback endpoints 11ms

✓ RecommendSubsidy — STEP 2 79ms

✓ renders Step 2 47ms

✓ district is disabled when no state 40ms

✓ enables district after selecting state 39ms

✓ populates districts once state is selected 12ms

✓ validates missing Step 2 fields 14ms

✓ submits Step 2 and proceeds to results 46ms

✓ shows loading while submitting 44ms

✓ handles API error — Network 51ms

✓ handles 400 API error 70ms

✓ handles custom API error 49ms

✓ handles API response with success:false 49ms

✓ handles 503 API error 70ms

✓ RecommendSubsidy — STEP 3 144ms

28

Pass

0

Fail

28

Total

Files

1

✓ Pass

1

⌚ Time

4.36s

File

Statements

Branches

Functions

Lines

SubsidyRecommendation.jsx

92.85%

117/126

72.66%

109/150

90.32%

28/31

93.27%

111/119

11. Support

Vitest

Dashboard

Q Search...

Filter

Fail

Pass

Skip

Only Tests

FAIL (0) / RUNNING (0)

PASS (1) / SKIP (-)

tests/unit/frontend/farmer/Support.test.jsx 228ms

✓ Support Component 228ms

✓ renders header and settings 8ms

✓ fetches and displays grievances 46ms

✓ opens and closes grievance form 44ms

✓ shows validation errors when submitting empty form 38ms

✓ submits grievance successfully 41ms

✓ handles grievance submission failure 43ms

✓ file upload preview works 72ms

✓ view grievance details modal opens and closes 277ms

✓ FAQ expand/collapse works 53ms

✓ renders video tutorials correctly 18ms

✓ handles failed grievance fetch 18ms

✓ image file upload shows preview 53ms

✓ non-image file upload works without preview 42ms

✓ submits grievance with attachment 84ms

✓ cancel button closes form 11ms

✓ clicking form backdrop closes form 51ms

✓ clicking details modal backdrop closes modal 457ms

✓ displays grievance with attachment in details modal 143ms

✓ displays officer remark in details modal 127ms

✓ changes preferred contact to phone 22ms

✓ displays empty grievances table when no grievances 28ms

✓ displays multiple grievances correctly 47ms

39

Pass

0

Fail

39

Total

Files

1

✓ Pass

1

⌚ Time

4.66s

File ^		Statements ^		Branches ^		Functions ^		Lines ^	
Support.css		0%	0/0	0%	0/0	0%	0/0	0%	0/0
Support.jsx	<div></div>	90.74%	98/108	79.45%	58/73	88.88%	24/27	90.72%	88/97

12. Forgot Password

Vitest

Search...

Filter

☐ Fail☐ Pass☐ Skip☐ Only Tests

FAIL (0) / RUNNING (0)
PASS (1) / SKIP (-)

✓ tests/unit/ForgotPassword.test.jsx 261ms

✓ ForgotPassword component 261ms

✓ does not call API when email is invalid on Send ... 30ms

✓ sends OTP and proceeds to OTP step on successf... 9ms

✓ verifies OTP and proceeds to reset password step 10ms

✓ validates new password fields and calls onBackTo... 13ms

✓ shows an error if sending OTP fails 6ms

✓ shows an error if OTP verification fails 8ms

✓ shows an error if password reset fails 10ms

✓ shows validation error for mismatched passwords 9ms

✓ calls onBackToLogin when "Back to Login" is click... 2ms

✓ returns to email step when "Back to Email" is click... 6ms

✓ returns to email step when "Back to Email" is click... 9ms

✓ does not submit when password fields are empty 8ms

✓ validates password format when typing new pass... 9ms

✓ validates password format when typing confirm p... 9ms

✓ toggles password visibility for new password field 8ms

✓ toggles password visibility for confirm password fl... 7ms

✓ does not verify OTP when field is empty 4ms

✓ clears error when typing valid password after inv... 10ms

✓ shows mismatch error when new password is vali... 10ms

✓ clears error when email is valid after showing inval...

30
Pass

0
Fail

30
Total

Files1

✓ Pass1

⌚ Time1.34s

% Coverage report from v8

File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Line #s
All files	95.95	94	93.75	95.5	
ForgotPassword.jsx	95.95	94	93.75	95.5	54-55, 84, 125

ishanthakkar@Ishan-MacBook-Air KrushiSetu %