**Testing:**

**Testing Strategies & Plans:**

### Test-Driven Development (TDD):

* Begin with TDD to ensure that each feature is accompanied by automated tests. In virtual interior design, this could mean writing tests to validate elements like room layout, furniture placement, color schemes, etc.
* Write tests before implementing features. This helps clarify requirements and ensures test coverage from the outset.

### Continuous Integration (CI):

* Set up a CI pipeline to automatically build, test, and deploy changes. This ensures that new code doesn't break existing functionality and maintains the overall stability of the project.
* Integrate automated tests into the CI process to run whenever changes are pushed to the repository. This provides rapid feedback on the quality of the code.

### Exploratory Testing:

* Given the creative nature of interior design, incorporate exploratory testing to discover unforeseen issues and provide qualitative feedback.
* Allow testers to freely explore the virtual environment, trying different design options, configurations, and interactions to uncover usability issues and design flaws.

### User Acceptance Testing (UAT):

* Involve stakeholders, including designers and clients, in UAT to ensure that the virtual interior design meets their expectations and requirements.
* Encourage feedback throughout the development process to incorporate changes early and avoid costly rework later.

### Pair Testing:

* Implement pair testing where developers and testers collaborate closely to identify and address issues together.
* This fosters communication, knowledge sharing, and a shared understanding of the project's goals and requirements.

### Regression Testing:

* Maintain a comprehensive suite of regression tests to ensure that new changes don't introduce regressions or unintended side effects.
* Automate regression tests wherever possible to streamline the testing process and catch regressions early.

### Agile Testing Quadrants:

* Use the Agile Testing Quadrants model to categorize and prioritize testing efforts.
* **Quadrant 1** (Technology-facing tests): Unit tests, component tests.
* **Quadrant 2** (Business-facing tests): Acceptance tests, exploratory testing.
* **Quadrant 3** (Business-facing but supporting technology): Performance testing, security testing.
* **Quadrant 4** (Technology-facing but supporting business): Load testing, stress testing.

### Adaptability:

* Remain flexible and adaptable to changing requirements and priorities, as Agile projects often involve evolving customer needs and market conditions.
* Continuously review and refine the testing strategy based on feedback and lessons learned throughout the project lifecycle.

By incorporating these testing strategies and plans into this Agile virtual interior design project, we can ensure a high-quality product that meets both technical and user requirements while embracing the iterative and collaborative nature of Agile development.

**Test Cases:**

TEST CASE 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SN  . | Actions | Input | Expecte d Output | Actual Output | Test Browser | Test Result s |
| 1. | Login to | Username, | Success- | Actual | Chrome | pass |
|  | the virtual | password | Full login | login |  |  |
|  | interior |  |  | status |  |  |
|  | design |  |  |  |  |  |
|  | platform |  |  |  |  |  |
| 2. | Create a new design project | Project name, description client information | Project success fully created | New project "Living Room Redesign  " created | Firefox | pass |
|  |  |  |  | successfu |  |  |
|  |  |  |  | ll |  |  |
| 3. | Add a new room to the design | Room type, dimensions, layout preferences | Room added to the design | Bedroom added with specified dimension | Safari | pass |
|  |  |  |  | s and style |  |  |

TEST CASE 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SN. | Actions | Input | Expected Output | Actual output | Test Browser | Test Results |
| 1 | Place | Furniture | Furniture | Sofa placed at coordin ates (50,  100) | Firefox | pass |
|  | furniture in | Selection: | placed in |  |  |
|  | the room | Sofa, | the room |  |  |
|  |  | Placement |  |  |  |
|  |  | Coordinate |  |  |  |
|  |  | s: (x=50, |  |  |  |
|  |  | y=100) |  |  |  |
| 2 | Change  room color | Selected Color | Room  color | Room  color | Safari | pass |
|  | scheme | Palette:  Blue, White, Gray | scheme updated | scheme change d to Blue,  White, |  |  |
|  |  |  |  | Gray |  |  |
| 3 | Save the | Save button | Design | Design project saved succes sfully | Chrome | pass |
|  | design | clicked | project |  |  |
|  | project |  | saved |  |  |
|  |  |  | success |  |  |
|  |  |  | fully |  |  |

TEST CASE 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SN | Actions | Input | Expected output | Actual output | Test Browers | Test Resu lts |
| 1 | Share the design with the client | Share button clicked, Client Email: client@ example. com | Design project shared with the client | Link shared with client@ex ample.co m | Firefox | Pass |
| 2 | Review design with the client | Open shared link,  View | Client approves the design | Client provides positive  feedback | Chrome | Pass |
|  |  | design |  | on the |  |  |
|  |  |  |  | design |  |  |
| 3 | Finalize design and mark as complete | Mark as complete button clicked | Design project marked as complete | Design project marked as complete | Safari | Pass |