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**AetherWing: IoT-based Smart Bird House**

**Test Plan**

All the listed scenarios are considered essential features for the Smart Bird House, ensuring its core functionality and usability.

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| --- | --- | --- | --- |
| **Scenarios** | Expected Result | Test Type | Feature Essential |
| **Initial Setup** | Birdhouse successfully connects to Wi-Fi network. | White | Required |
| Mobile app connects to the birdhouse. | White | Required |
| All sensors are detected and functional. | White | Required |
| Camera provides a live feed through the app. | White | Required |
| Smart feeder responds to app commands. | White | Required |
| LED bulbs can be controlled through the app. | White | Required |
| Temperature and humidity readings are accurate. | White | Required |
| The motion sensor detects movement and logs it. | White | Required |
| The temperature threshold from 28°C rises to 30°C. | Temperature exceeds a set threshold; user receives an alert. | Black | Required |
| The set humidity threshold of 40% drops to 35%. | Humidity drops below a set threshold; user receives an alert. | Black | Required |
| Motion detected in the birdhouse. | User receives an alert. | Black | Required |
| Bird enters the birdhouse. | User receives an alert. | Black | Required |
| User manually triggers the camera. | User gets immediate view without having to wait for the camera’s automatic triggers. | Black | Required |
| Set a feeding schedule through the app in case the owner is not around. | Smart feeder operates accordingly. | White | Required |
| Ensure the correct amount of food is dispensed as per the schedule. | White | Required |
| **In case unexpected circumstances happened, for example there is a system error.** | Manual feeding can be initiated through the app. | White | Required |
| **Lighting Control** | Turn on/off the LED bulb through the app. | White | Required |
| Adjust the brightness of the LED bulb through the app. | White | Required |
| **Camera** | Ensure camera feed quality is clear and consistent. | White | Required |

Note:

White Box Testing: Testing the internal logic and functionality of the system.

Black Box Testing: Testing the system's functionality from the user's perspective without knowledge of the internal workings.

Gray Box Testing: A combination of both white and black box testing, with partial knowledge of the internal system.