# Testing for PAB

The Bullpen

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## Testing Overview

* Types of Testing
  + Unit Testing
    - Utilize unit testing to ensure individual parts, functions, and methods of the project work in the intended way.
  + Integration Testing
    - Utilize integration testing to ensure communication between different components (model, server, application).
* Tools Used
  + Postman
    - Used for server test cases to easily send HTTP requests to test server endpoints and logic

## Test Cases

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test Case ID | Part(s) Tested | Description | Input Data | Expected Result | Actual Result | Status |
| TC-01 | Server | Add a pitch entry | {      "pitcherHandedness": "right",      "batterHandedness": "right",      "pitchType": "fastball",      "velocity": 95,      "horizontalBreak": -0.5,      "verticalBreak": 1.5,      "zone": 5,      "balls": 1,      "strikes": 1  } | Data saved to PitchEntries table; valid response. | Data saved successfully; returned correct response. | Pass |
| TC-02 | Server | Invalid pitch entry (missing velocity) | {      "pitcherHandedness": "right",      "batterHandedness": "right",      "pitchType": "fastball",      "horizontalBreak": -0.5,      "verticalBreak": 1.5,      "zone": 5,      "balls": 1,      "strikes": 1  } | Error message indicating missing velocity. | Error returned: 400 Bad Request - velocity error. | Pass |
| TC-03 | Server | Pull history from Predictions table | N/A | Data pulled from Predictions table; valid response. | Data received successfully; correct response. | Pass |
| TC-04 | Application | Strike zone input selection | Select middle zone(5) for the zone input | Selection is acknowledged; valid response. | Selection received successfully; valid response. | Pass |
| TC-05 | Application | Missing strike zone input | Do not select any zone for input | Error message indicating missing selection | Error returned | Pass |
| TC-06 | Application | Input validation done with RegEx | Pitcher Handedness: Right  Batter Handedness: Right  Pitch Type: ‘slider’  Velocity: 89  Horizontal Break: 1.7  Vertical Break: 0.1  Balls: 1  Strikes: 1  Zone: middle | Input recognized; valid response | Input received; correct response | Pass |
| TC-07 | Application  Server | User input is sent to server and is acknowledged | Pitcher Handedness: Right  Batter Handedness: Right  Pitch Type: ‘slider’  Velocity: 89  Horizontal Break: 1.7  Vertical Break: 0.1  Balls: 1  Strikes: 1  Zone: middle | Input is sent and server acknowledges input; valid response | Input was sent correctly; server received input data; both correct responses | Pass |
| TC-08 | Model | Model creates predictions given pitch data | {      "pitcherHandedness": "right",      "batterHandedness": "right",      "pitchType": "fastball",      "velocity": 95,      "horizontalBreak": -0.5,      "verticalBreak": 1.5,      "zone": 5,      "balls": 1,      "strikes": 1  } | Model uses input and sends back valid prediction results; valid response | Model receives input and creates correct prediction results; correct response | Pass |
| TC-09 | Model  Server | Model receives pitch input from server | {      "pitcherHandedness": "right",      "batterHandedness": "right",      "pitchType": "fastball",      "velocity": 95,      "horizontalBreak": -0.5,      "verticalBreak": 1.5,      "zone": 5,      "balls": 1,      "strikes": 1  } | Model receives data from server; valid response | Model receives pitch input and sends back results to server; correct response | Pass |
| TC-10 | Application  Model  Server | Create full pitch input and result using all components | {      "pitcherHandedness": "right",      "batterHandedness": "right",      "pitchType": "fastball",      "velocity": 95,      "horizontalBreak": -0.5,      "verticalBreak": 1.5,      "zone": 5,      "balls": 1,      "strikes": 1  } | Pitch input sent to server, model created prediction result, result is sent back to application and displayed. | Pitch input was sent and received by server, model creates prediction results using input, results are sent back and displayed on application | Pass |