Just like programming, you must have Test your application.
You may submit your **Test-Plan** and **Test-Cases** in the following format.

# Software Test Plan

Test Plan is the **sub-set** of the whole plan you had submitted earlier.
Although it has **more details** in terms of activities of the software testing your would do on your FYP.

For example if your software application has **10-Screens** and **8-Reports** in it.
Assume your estimation of efforts is approximately half day per screen / report

| S. No | Screen/Report Name | Test Engineer | Start Date | End Date |
|---|---|---|---|---|
| 1 | App Login Screen | Khizer | 01-Jul-2025 | 01-Jul-2025 |
| 2 | Manual Appliance Control | Khizer | 01-Jul-2025 | 01-Jul-2025 |
| 3 | Sensor-Based Auto Control | Taha | 02-Jul-2025 | 02-Jul-2025 |
| 4 | Time-Based Appliance Schedule | Taha | 02-Jul-2025 | 02-Jul-2025 |
| 5 | Real-Time Energy Monitoring | Khizer | 03-Jul-2025 | 03-Jul-2025 |
| 6 | Daily Consumption Summary | Shoaib | 03-Jul-2025 | 03-Jul-2025 |
| 7 | Smart Decision Logic | Shoaib | 04-Jul-2025 | 04-Jul-2025 |
| 8 | Solar Optimization Logic | Taha | 04-Jul-2025 | 04-Jul-2025 |
| 9 | Appliance Toggle via App | Taha | 05-Jul-2025 | 05-Jul-2025 |
| 10 | Grid Failure Backup Switch | Shoaib | 05-Jul-2025 | 05-Jul-2025 |

# Test Case (for screen/reports)

**Project Name:** (IHEMS) **Iteration No:** 01
**Module Name:** Prototype Testing. **Date:** 4-July-2025
**Test Engineer:** Taha Saeed, M. Shoaib and M. Khizer
**Test Case Description:** To verify the working functionality of prototype to ensure all components are working properly automatically and manually which help to reduce bill costs while converting the energy source to other resources such solar grid to solar and battery when the electricity consumption units are out of range.

| TC No. | Steps | Input Data | Expected Result | Actual Result | Pass/Fail |
|---|---|---|---|---|---|
| TC-01 | Tap ON button for light | "Living Room Light" → ON | Light turns ON, UI updates status | Light turned ON, UI OK | Pass |
| TC-02 | No motion detected for 10 min | PIR = No motion | AC turns OFF, log entry created | AC turned OFF, log OK | Pass |
| TC-03 | Time-based schedule activates heater | Time = 06:00 AM | Water heater turns ON | Heater turned ON | Pass |
| TC-04 | Monitor current energy usage | Sensor = 250W | UI displays "Current Usage: 250W" | Display correct | Pass |
| TC-05 | View daily consumption summary | Usage logs (last 24h) | Summary = "12.4 kWh used" | Summary visible | Pass |
| TC-06 | Detect peak hours and load > 2kW | Time = 6 PM, Load = 2.5kW | TV/Charger OFF, Fridge ON | Devices managed | Pass |
| TC-07 | Use solar when available | Solar = 800W, Battery = 60% | Devices powered via solar+bat, grid reduced | Grid minimized | Pass |
| TC-08 | User logs in with valid credentials | Valid email and password | Redirect to dashboard | Dashboard opened | Pass |
| TC-09 | User toggles fan OFF from app | Tap OFF button | Fan turns OFF, UI status = OFF | Fan turned OFF | Pass |
| TC-12 | Grid power fails, system switches to battery | Grid = 0V | Switch to battery, log shows failover | Battery active, log OK | Pass |

**TC-1** - is Test case # 1 for Screen/report you are doing.
You may have **numbers of test-case** against one screen or report depending upon its complexity.
**Steps -** you follow to enter the input-data on that screen/report. First-value, second-value and so on
**Input-Data** – **actual value** of the input-data on that screen
Mention does that Test **pass or fail**