# Test plan

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| **Test name** | **Test** | **Test success condition** | **Pre-condition** | **Requirements** |
| Watering system | 1. Measure the current soil moisture  2. Add water to the soil  3. Measure the soil moisture | 1. Returns soil moisture  3. soil moisture is higher than measurement 1. | Connected to system | FR\_002, FR\_013, FR\_009, UR\_010, UR\_016 |
| PH control | 1. Measure current PH value  2. Add PH solution to the water  3. Add water to soil  4. Measure PH value | 1. Returns PH value  4. PH value is within set threshold | PH value is outside defined threshold | FR\_001, FR\_011, UR\_009, UR\_015 |
| Water tank | 1. Measure water level in tank  2. Fill water tank  3. Measure water level in tank  4. Keep valves to grow boxes closed | 1. Return water level, empty  3. Return water level, full  4. Water levels | Water tank is empty | FR\_003, UR\_017 |
| Temperature | 1. Measure temperature  2. adjust temperature  3. Measure temperature | 1. Return temperature  3. Return adjusted temperature | Temperature is not within threshold | FR\_004, FR\_012, UR\_007, UR\_013 |
| Lighting | 1. Measure lumens  2. Increase lighting intensity  3. Measure lumens | 1. Return lumens  3. Return increased lumens compared to 1. | Lighting is not at max intensity | FR\_005, UR\_008, UR\_014 |
| Custom program | 1. Create new program  2. Reset system  3. Delete created program  4. Reset system | 1. Program is created  2. Created program is available  4. Created program is not available | Connected to server | FR\_006, FR\_007, FR\_015, FR\_016, FR\_017, FR\_018, UR\_001, UR\_002, UR\_003, UR\_004, |
| Leak detection | 1. Measure water levels  2. Keep valves to grow boxes closed and intake closed  3. Measure water levels | 1. Return water levels  3. Return water levels, is the same as measurement 1 | Water tank is full | FR\_014 |
| Server | 1. Start program  2. Disconnect grow box  3. Reconnect grow box | 1. Return countdown for possible completion  3. Countdown resumes where it left off | A program is selected and a cycle is started | FR\_019, UR\_011, UR\_012, UR\_018 |
| Connect grow box | 1. Add grow box to network  2. Remove grow box from network | 1. Grow box is shows up on network UI  2. Grow box disappears from network UI | Network is set up | UR\_005 / UR\_006 |

## Test specification

We are going to be using Unity for the test as this is testing environment we are most familiar with.