Test planning

To ensure a thriving garden, a comprehensive testing process was implemented for the smart green gardening project. Here's a breakdown of the key phases:

Integration Testing: Led by Shafiq and Raihan, this week-long effort verified the seamless integration of individual modules within the smart garden system. Imagine this as checking if all the sensors, lights, and watering systems work together smoothly.

System Testing: Coordinated by Mostafizur and Sukanna, a two-week testing period evaluated the entire smart garden's functionality and performance. This phase identified any glitches or shortcomings across the whole system, ensuring a healthy and efficient environment for your plants.

Acceptance Testing: This crucial stage involved stakeholders and end-users. By validating whether the smart garden meets their expectations, it guarantees the system aligns with their needs and preferences. Imagine getting feedback from real gardeners to ensure the features are helpful and user-friendly.

<table>
<tr><td colspan="3">Project Name: Smart Green Gardening</td><td colspan="2">Test Designed by: Arpita Saha</td></tr>
<tr><td colspan="3">Test Case ID: SGG_1</td><td colspan="2">Test Design date:30-3-24</td></tr>
<tr><td colspan="3">Test Priority: High</td><td colspan="2">Test Executed by:</td></tr>
<tr><td colspan="3">Module Name: Login Session</td><td colspan="2">Test Execution date:</td></tr>
<tr><td colspan="5">Test Title: verify login with valid username and password</td></tr>
<tr><td colspan="5">Description: Test app login page</td></tr>
<tr><td colspan="5">Precondition: User must have valid username and password</td></tr>
<tr><td>Test Steps</td><td>Test Data</td><td>Expected Result</td><td>Actual Result</td><td>Status(Pass/Fail)</td></tr>
<tr><td>1) Go to the app
2) Enter username
3) Enter password
4) click login
5) if user forgot the password click <forgot password.=
6) click to the mail</td><td>Mahisb
23*******</td><td>User should login into the application</td><td>As expected</td><td></td></tr>
<tr><td colspan="5">Post-Condition: None</td></tr>
</table>

Project Name: Smart Green Gardening			Test Designed by: Arpita Saha	
Test Case ID: SGG_2			Test Design date:30-3-24	
Test Priority: High			Test Executed by:	
Module Name: Registration Session			Test Execution date:	
Test Title: verify confirm registration by creating a valid user account				
Description: Test app registration page				
Precondition: Users must provide all necessary information				
Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1) provide valid information 2) set password 3)click submit button 4)enter verification code 5)government verify	Name: Mahi Country code:123 Mobile:0171*** Email:mahi@***** Verification code:23456	After given all information and government verification user can complete resignation.	As expected,	
Post-Condition: None				

Project Name: Smart Green Gardening	Test Designed by: Arpita Saha
Test Case ID: SGG_3	Test Design date:30-3-24
Test Priority: High	Test Executed by:
Module Name: Monitor user activity session	Test Execution date:
Test Title: Monitor users' activity.	
Description: Test app monitor user activity page to check user completed task list	
Precondition: None	

Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1) provide government tools 2) search user's id in search box 3)show database 4)view all information about task in after clicking the task button.	Id:234** Completed task 89%	The government can check all users completed task information.	As expected,	

Project Name: Smart Green Gardening	Test Designed by: Arpita Saha
Test Case ID: SGG_4	Test Design date:30-3-24
Test Priority: High	Test Executed by:
Module Name: Location Tracking Session	Test Execution date:
Test Title: Track users' location.	
Description: Test app track location page	
Precondition: None	

Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1) go to the government dashboard 2) go to the search box 3) write user id . 4) click to the search menu and see the location	Id:23** GPS map view	GPS map will show user's exact location	As expected	

Project Name: Smart Green Gardening	Test Designed by: Asaduzzaman
Test Case ID: SGG_5	Test Design date:31-3-24
Test Priority: High	Test Executed by:
Module Name: Funding Opportunities Session	Test Execution date:

Test Title: Funding opportunities.

Description: Test app funding opportunities page

Precondition: Users must be logged In the Government Dashboard.

Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1) clickfund button 2) click buttet point 3)click confirm button to percent information	Fund percentage. Utility:1100 Water:1200	Fund percentage will be added user profile and government admin can edited the information	As expected	

Post-condition:

Project Name: Smart Green Gardening			Test Designed by: Asaduzzaman	
Test Case ID: SGG_6			Test Design date:31-3-24	
Test Priority: High			Test Executed by:	
Module Name: Policy generates and Updates Session			Test Execution date:	
Test Title: Policy generate and Updates				
Description: Test app policy generate and updates page				
Precondition: Log in Government profile				
Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)
1) check the information type(public or private) 2) check the connection with user profile 3) click on policy update button 4) click confirm to store info in database 5) click on update button to final update	Bill pays policy. Security update policy.	Users can see all the updated policy related information on their profile and only government admin can edit all information.	As expected,	
Post-condition: none				

Project Name: Smart Green Gardening			Test Designed by: Asaduzzaman	
Test Case ID: SGG_7			Test Design date:31−3−24	
Test Priority: Medium			Test Executed by:	
Module Name: Scan Plant Information Session			Test Execution date:	
Test Title: Scan Plant Information				
Description: Allow users to know all information about their gardening through technology				
Precondition: user need Login and need Database storage about plants information				
Test steps	Test data	Expected Results	Actual Results	Status (Pass or fail)
1) check the pictures taking ability of plats by clicking capture images button 2) click to the option for clear image capture 3) click settings for image quality optimize 4) click image edit 5) click to the image viewer	Plant tag: sggs_23 Plant label:1 Image size:34X30 Image colour: HSR	User can edit the image colour,size also change the camera settings to view clear image and able to know the plant related information	As expected,	
Post condition:None				

Project Name: SMART GREEN GERDENING			Test Designed by: MOSTAFIJUR RAHMAN	
Test Case ID: AN_01			Test Designed date: 31/03/2024	
Test Priority (Low, Medium, High): High			Test Executed by:	
Module Name: Notification and alert Session			Test Execution date:	
Test Title: Verify Alerts and Notifications Functionality				
Description: test ensures that the device can send timely alerts and notifications to gardeners regarding various aspects of garden management				
Precondition (If any): Authenticated account and time identification ability required.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Connect sensors. 2. Develop firmware/software. 3. Implement algorithms. 4. Set thresholds. 5. Simulate readings. 6. Verify alerts. 7. Test notification delivery. 8. Confirm coverage and promptness.	A alert sound from apps.	Alerts triggered accurately based on predefined thresholds or anomalies.	As Expected	
Post Condition: Post-condition: Users receive timely alerts and notifications for effective garden management.				

Projects Name: Smart Green Gardening	Test Designed by: A.K.M Shafiq
Test Case ID: SGG_13	Test Designed Date:30/03/24
Test priority (Low, Medium, High): High	Test Executed by:
Module Name: Monitor Environmental Conditions Session	Test Execution Date:
Test Title: Monitor Environmental Conditions	
Description: Test website Monitor Environmental Conditions page	
Precondition (If any): Users must have an authenticated account and need log in and device capable for sensor capabilities.	

Test Steps	Test Data	Expected results	Actual results	Status (Pass/fail)
1. Go to the website 2. Check real time data dashboard. 3. Check environmental status 4. Check real time weather forecast	Soil moisture, temperature, Humidity, weather forecast	User should check all the functions	As expected,	

Post condition:None

Projects Name: Smart Green Gardening	Test Designed by: A.K.M Shafiq
Test Case ID: SGG_12	Test Designed Date:30/03/24
Test priority (Low, Medium, High): High	Test Executed by:
Module Name: Automated Tasks Session	Test Execution Date:
Test Title: Automated Tasks	
Description: Test website Automated Tasks page	
Precondition (If any): Users must have an authenticated account and need knowledge ability like rationally thinking.	

Test Steps	Test Data	Expected results	Actual results	Status (Pass/fail)
1. Go to the website 2. Check gardening tasks 3. Check watering 4. Check fertilizing and lighting 5. Check customizable schedules	Soil moisture level , nutrient level, lighting, schedules	User should check all the functions	As expected,	

Post condition:

Project Name: SMART GREEN GERDENING				Test Designed by: MOSTAFIZUR RAHMAN
Test Case ID: FR_11				Test Designed date: 31/03/2023
Test Priority (Low, Medium, High): Medium				Test Executed by:
Module Name: Community interaction Function Session				Test Execution date:
Test Title: Verify Gardening Group Functionality				
Description: Test ensures that users can create and effectively interact within Gardening groups in the system.				
Precondition (If any): Must be logged in.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Create Gardening group. 2. Set group name, description, and privacy settings. 3. Upload cover photo. 4. Join group with different privacy settings. 5. Engage in chat rooms based on interests. 6. Send direct messages. 7. Customize notification preferences. 8. Use emojis and reaction buttons. 9. Test audio and video call options.	Delivery message and internet connection	Group created successfully with all group features.	As Expected	
Post Condition: Gardeners can effectively create, join, and interact within gardening groups, facilitating knowledge sharing and community engagement.				

Projects Name: Smart Green Gardening			Test Designed by: Arpita Saha	
Test Case ID: SGG_8			Test Designed Date:1/4/24	
Test priority (Low, Medium, High): High			Test Executed by:	
Module Name: Emergency Support Session			Test Execution Date:	
Test Title: Emergency Support				
Description: Users can request for emergency support or assistance for several issues				
Precondition (If any): Users must be logged on				
Test Steps	Test Data	Expected results	Actual results	Status (Pass/fail)
1) click to the report form 2) ensure that after uploading Report form automatically locations delete 3) go to the text file for information 4) fill up the feedback form	User:Mahi Address:Motijil,Dhaka Issues: facing problem to see the gardening images Feedback form: Mahi 1−4−2 4	User can easily find solution for their project.	As expected,	
Post−condition: None				

Project Name: Smart Green Gardening			Test Designed by: Raihan Parvez	
Test case Id: TR_1			Test Designed data:30−3−24	
Test priority (Low, Medium, high): High			Test Executed by:	
Module Name: Community Interaction			Test Executed data:	
Test Title: Verify login with valid username and password				
Description: For communication with each other's				
Precondition (If Any): Must be logged in				
Test steps	Test data	Expected Results	Actual Results	Status (Pass or fail)
1. Go to website 2. Enter username 3. Enter password 4. Click submit 5. Click Community Interaction 6. Communicate with other people	Username: Mahi Password: 234***	User should login into the application. For communicate with other click on Community Interaction	As expected,	
Post condition: None				

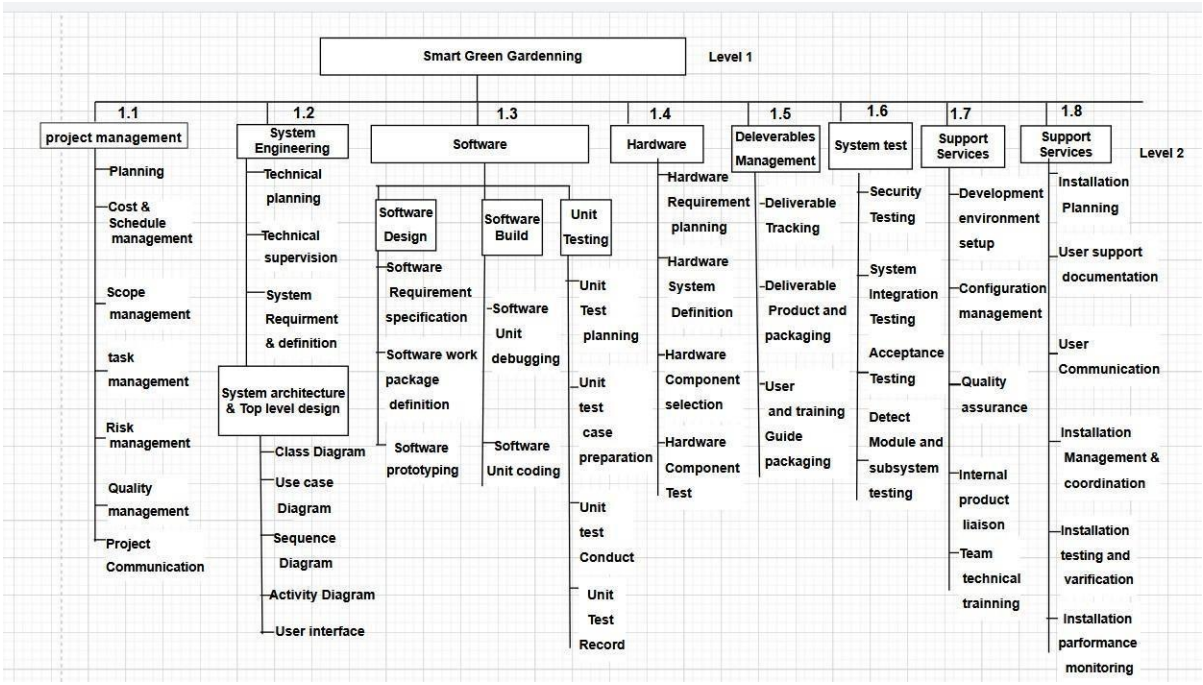
Project Name: SMART GREEN GERDENING	Test Designed by: MOSTAFIZUR RAHMAN
Test Case ID: FR_1	Test Designed date: 31/03/2024
Test Priority (Low, Medium, High): High	Test Executed by:
Module Name: Automatic Water Dispensing	Test Execution date:
Test Title: Verify Automatic Water Dispensing Capability	
Description: Test to automatically dispense water to plants using various mechanisms and controlled by mobile apps.	
Precondition (If any): Users must have an authenticated account and water provider capable Fountain.	

Test Step	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Log in to the mobile app. 2. Select plants and set watering schedule. 3. Activate water dispensing. 4. Monitor precise watering and adjust flow rate. 5. Ensure integration of drip irrigation, nozzle, and pump systems.	on button in apps.	Water flow successful	As Expected,	
Post Condition: Efficient watering tailored to plant needs, conserving water and enhancing plant health.				

Project Name: Smart Green Gardening			Test Designed by: Raihan Parvez	
Test case Id: TR_1			Test Designed data:31−3−24	
Test priority (Low, Medium, high): High			Test Executed by:	
Module Name: Save User Information			Test Executed data:	
Test Title: Save User Information				
Description: Allow users to add their experience, identity.				
Precondition (If Any): Must have a registered account				
Test steps	Test data	Expected Results	Actual Results	Status (Pass or fail)
1. Go to website 2. Enter username 3. Enter password 4. Click submit 5. Click Save User Information 6. Save or update user identity	Username: Password:	Users should login into the application. For Save or update user identity Click Save User Information	As expected,	
Post condition: None				

Project Name: Smart Green Gardening			Test Designed by: Raihan Parvez	
Test case Id: TR_1			Test Designed data:31−3−24	
Test priority (Low, Medium, high): Medium			Test Executed by:	
Module Name: Help Center			Test Executed data:	
Test Title: Help Center				
Description: For any kind of question that user want to know. They can ask.				
Precondition (If Any): Must be logged in				
Test steps	Test data	Expected Results	Actual Results	Status (Pass or fail)
1. Go to website 2. Enter username 3. Enter password 4. Click submit 5. click help	Username: Password:	User should login into the application. Click the help button and they can ask anything	As expected,	
Post condition:				

Projects Name: Smart Green Gardening			Test Designed by: A.K.M Shafiq	
Test Case ID: SGG_11			Test Designed Date:30/03/24	
Test priority (Low, Medium, High): High			Test Executed by:	
Module Name: Hire Labor Session			Test Execution Date:	
Test Title: Hire Labor				
Description: Test website Hire Labor page				
Precondition (If any): Must be logged in account				
Test Steps	Test Data	Expected results	Actual results	Status (Pass/fail)
1. Go to the website 2. Check Emergency labor. 3. Check Assistance 4. celck Emergency labor request 5. Share Current Location	Information's, Instruction's,	User should check all the functions	As expected,	
Post condition:				


Smart Green Gardenning
Level 1
1.1
project management
Planning
Cost & Schedule management
Scope management
task management
Risk management
Quality management
Project Communication
1.2
System Engineering
Technical planning
Technical supervision
System Requirment & definition
System architecture & Top level design
Class Diagram
Use case Diagram
Sequence Diagram
Activity Diagram
User interface
1.3
Software
Software Design
Software Requirement specification
Software work package definition
Software prototyping
Software Build
Software Unit debugging
Software Unit coding
Unit Testing
Unit Test planning
Unit test case preparation
Unit test Conduct
Unit Test Record
1.4
Hardware
Hardware Requirement planning
Hardware System Definition
Hardware Component selection
Hardware Component Test
1.5
Deleverables Management
Deliverable Tracking
Deliverable Product and packaging
User and training Guide packaging
1.6
System test
Security Testing
System Integration Testing
Acceptance Testing
Detect Module and subsystem testing
1.7
Support Services
Development environment setup
Configuration management
Quality assurance
Internal product liaison
Team technical trainning
1.8
Support Services
Installation Planning
User support documentation
User Communication
Installation Management & coordination
Installation testing and varification
Installation performance monitoring
Level 2

Project Estimation

Project Type: Organic
P = 1.05
T = 0.38
Coefficient=2.4
SLOC = 6000

PM = Coefficient <Effort Estimation> * (SLOC/1000)P = 2.4*(6000/1000)^1.05
= 15.74

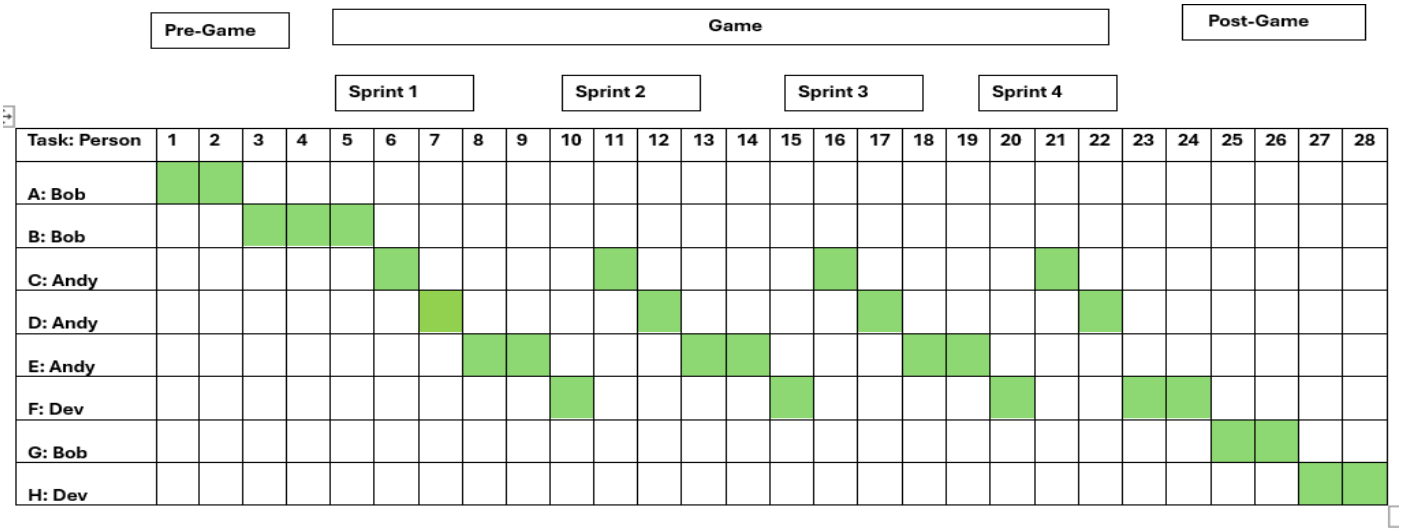
DM = 2.05 * (PM) ^T
= 2.5*(16)0.38
= 7.16

ST = PM/DM

= 2.19

≈ 3

Timeline Chart Analysis



Weeks = DM × 4

$= 7.16 \times 4$
$= 28.64$
$\approx$ 28 weeks

A: Planning
B: Setup Environment
C: Analysis
D: Design
E: Coding
F: Testing
G: Integration testing
H: System testing

Timeline II Chart Analysis