SOFTWARE REQUIREMENTS SPECIFICATION

FOR

ROBOVAC

(AUTOMATIC ROBOT CLEANER)

PROJECT REPORT

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AUTOMATIC ROBOT CLEANER

ROBOVAC

INTRODUCTION

PURPOSE:-

Robot vacuums are an autonomous device that is designed to clean carpet, tiles and hardwood floors of all dirt and debris, much like other types of vacuum cleaners. The main difference of robotic versions is their ability to minimize the amount of work that homeowners need to do. Although robot vacuum cleaners are a relatively new phenomenon, the idea in itself—having a robot cleaning assistant at home

INTENDED AUDIENCE AND READING SUGGESTIONS:-

The intended audience of this document would be the user, system developer ,project team or supervisor with the objective to refer and analyze the information. The SRS document can be used in any case regarding the requirements of the project and the solutions that have been taken.The document would finally provide a clear idea about the system that is building. For the sake of information and knowledge, system purpose and normal flow of use cases suggested for the users and Test cases for test developer.

Scope of project:

The scope of this project is to develop an automatic device that we can power ON the device according to our need. Robovac operates with an electric motor that provides the suction for the vacuum, this suction created by the motor allows the vacuum to collect dirt, dust and debris which is then powered into a deposit dust cup. Robovac relies on sensors to analyze its environment, these sensors tell the robot vacuum where to go, where not to go, and where the dirt is that needs to be cleaned. It is Hands-free, battery charged device. Robovac have a sensor below its body to detect drops, which works as a preventive mechanism to avoid the robot vacuum falling from any unbalanced surface.

Overall Description

Product Perspective:

Robovac has a three-stage cleaning system that's effective at lifting and sucking up dirt and dust from both hard floors and carpeting. This robotic cleaning device navigates around your house using multiple sensors, going under and around furniture, and other obstacles. It has two multi-surface brushes that grab both fine particles and larger debris, and it can clean for up to 90 minutes before docking and recharging itself.

Dirt-detection sensors alert the smart device to do an additional pass on particularly messy or high-traffic areas, and its edge-sweeping brush ensures it gets along edges and into corners, leaving your home nice and clean , Robovac isn't more than four inches tall, leaving little room inside to house a dustbin much larger than half a liter.

User Classes and Characteristics

1. Pets owner : They're great for people who have pets , Robovac grab all pet hairs easily
2. Working persons : Home cleaning is an overwhelming task, especially after a long busy day.
3. Best for disable people , Robovac is best for disable people they have to only press start button.

Operating Environment

1. use only indoors and on dry surfaces
2. for optimum performance. It is not recommended to use Robovac on thick (total thickness over 26mm/1.02 in) or plush carpets
3. do not use on very dark-colored floors
4. do not leave trailing cables as Robovac may become entangled in them.
5. Do not use it on the carpets that have tassels, as the tassels may entangle Robovac

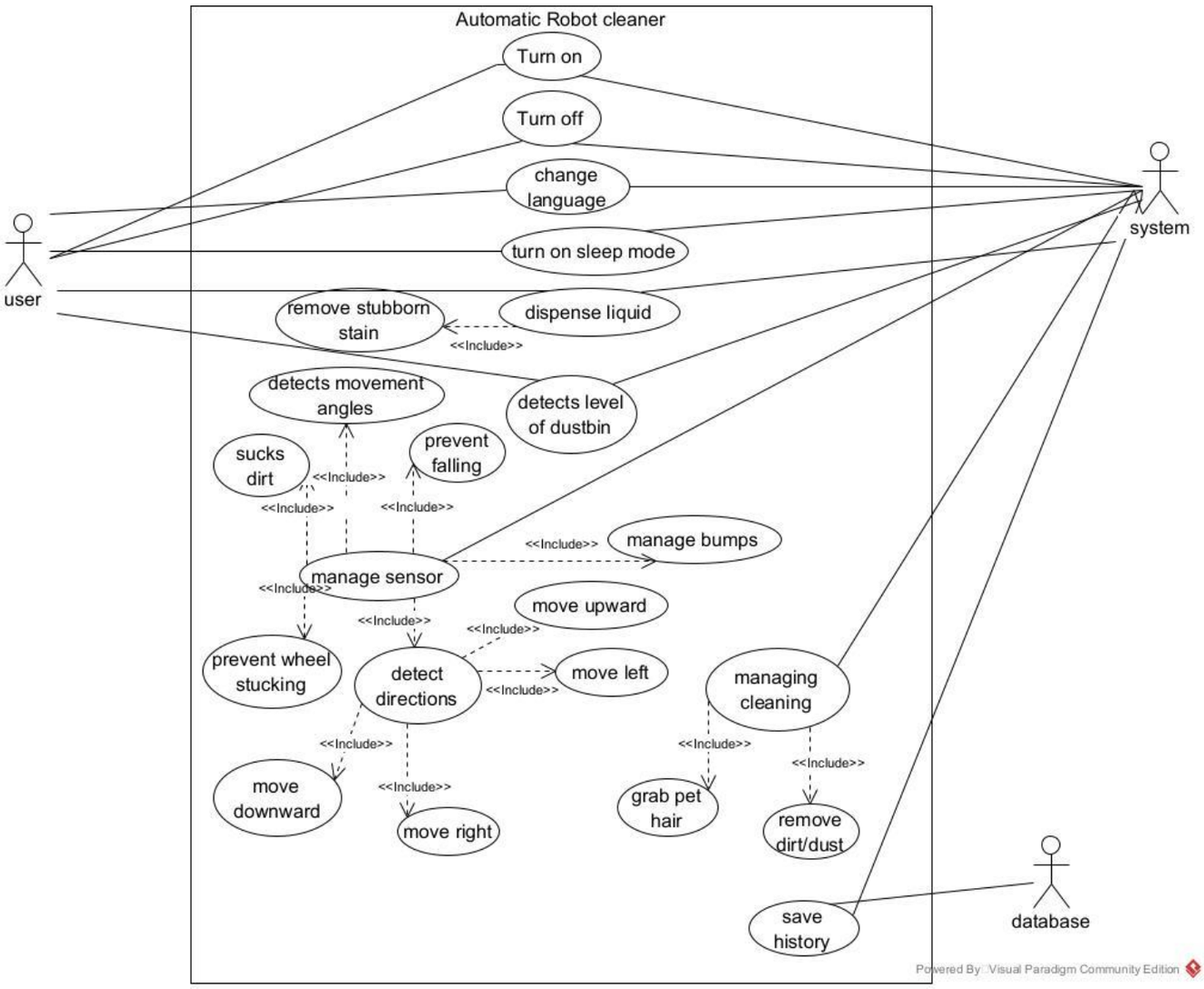
Functional Requirement no	Functional Requirement Description	Priority	Status
FR 1	User shall be able to turn on the Device	High	Complete
FR 2	User shall be able to change or select language of device	Core	Complete
FR 3	System shall be able to manage directions.	Core	Complete
FR 4	System shall be able to prevent wheel from stuck.	Core	Complete
FR 5	System shall be able to keep device save from falling down.	Core	Complete
FR 6	System shall be able to Prevents the device getting twined by wires.	Core	Complete
FR 7	System shall be to catch dirt.	Core	Complete
FR 8	System shall be able to grab pet hairs	Core	Complete
FR 9	System shall be able for suctions dirt into the dustbin	Core	Complete
FR 10	System shall be able to removes the tiny dust particles, mites, and allergens from the air.	Core	Complete
FR 11	System shall be able to dispenses liquid to the microfiber cloth continually.	Core	Complete
FR 12	System shall be able to remove the stubborn dirt.	Core	Complete
FR 13	System shall be able to manage the battery of device.	Core	Complete
FR 14	User shall be able to put device on sleep mode	Medium	Complete
FR 15	System shall be able to detect when the dust bin and alert user.	Medium	Complete

FR 16	User shall be able to turn off the Device	Low	Complete
FR 17	System shall be able to bump from anything	Core	Complete
FR 18	System shall be able to make a floor plan.	Core	Complete
FR 19	System shall be able to save history of cleaned areas	High	Complete
FR 20	System shall be able to detect dirt / dust / stains.	Core	Complete

NON-Functional requirements

Non-Functional Requirement No	Non-Functional Requirement Description
NFR 1	**Performance** 1. The system will provide required results in 4-5 seconds on average and 7-8 on load. 2. This system can perform multiple tasks at the same time. (If there is dust and spot of anything, system can perform both task) 3. If the load is less than the response time will increase by 5-6 sec for every task.
NFR 2	**Security** 1. We Design Robovac in a way so that no one can make changes rather than the system developer.
NFR 3	**Reliability** 1. The system will be available 18 hours but in case of any failure, the system will be unavailable for 1-2 hours 2. The minimum time to repair the system is 2 hours and the maximum is 6 hours. 3. System will be 97% reliable
NFR 4	**Usability** 1. Robovac design in a user-friendly system, easy to understand.
NFR 5	**Localization** 1. Robovac has features that match the geographical location of the users, such as Languages
NFR 6	**ENIVRONMENT** 1. System design in a way so that no external dirt or anything can damage the system.
NFR 7	**Scalability** 1. This system cannot climb the stairs so later feature add in this system so Robovac climb stairs easily without failing.

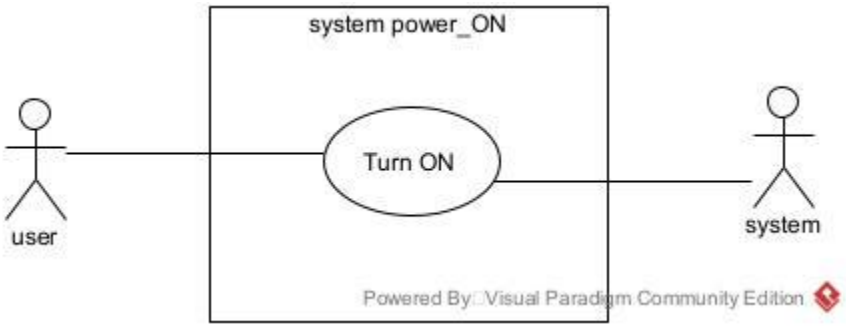
Use case diagram

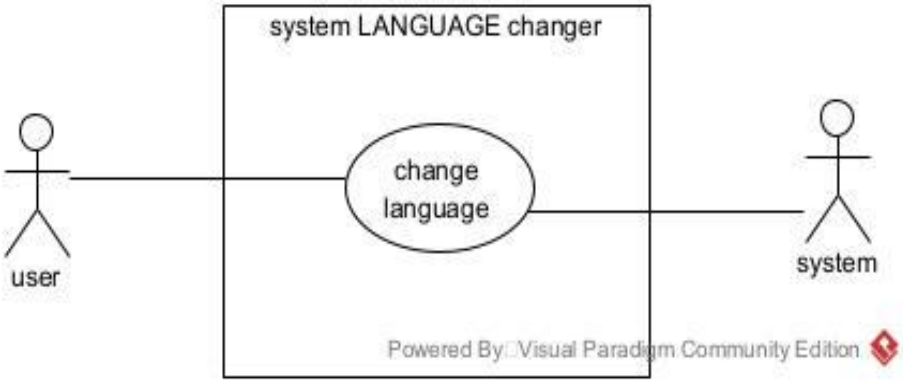


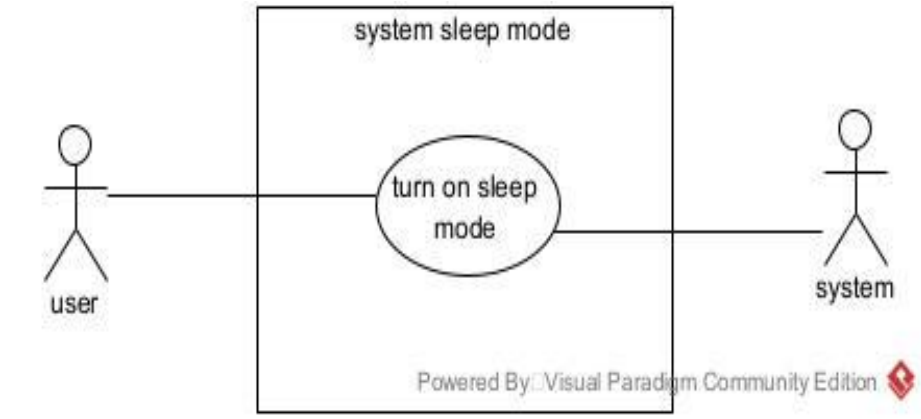
Functional Requirement Description
User shall be able to turn on System by pressing start button
System Removes the tiny dust particles, mites, and allergens from the air.
System shall be able to dispenses liquid to the microfiber cloth continually by using water tank method.
System shall be able to catch dirt by using dual sweeping side brush
System shall be able to control wheels to avoid collision.
User shall be able to turn off device by using stop button
User shall be able to put device on sleep mode by using sleep mode button
System shall be able to grab pet's hair and remove stains with its rubber roller from your floor by using main roller brush.
System shall be able to sucts dirt into the filtered dustbin through the air inlet by using Powerful Motor
System shall be able to mop your floor back-and-forth, which helps in removing the stubborn dirt from the floors by using micro-fiber cloth
System shall be able to manage battery of device by using current sensor and alert user that battery is low
User shall be able to change language of device by using language button.
System shall be able to keep device from falling down the stairs by using cliff sensor. This sensors are capable of stopping the system once it approaches a ledge.
System shall be able to detect the position of device where to move by using motion sensor .
System shall be able to detect when the dust bin is full by using biometric pressure sensor.
System shall be able for detecting the angle and position by using Hall and TMR sensor.
System shall be able to bump from anythingThe Impact Sensors in a system known as Bump Sensors shall be able to work mechanically to tell the system when it Bumps into anything.

System shall be able to make a floor plan by using mapping ability. The unit can use camera, radar, and laser (laser distance sensor or LDS) guided systems.
System shall be able to save history of floor which spaces were cleaned or not by using navigation .
System shall be able to Prevents the device getting twined by wires by using anti-twinning.

Graphical representation of use case:






system sleep mode
turn on sleep mode
user
system
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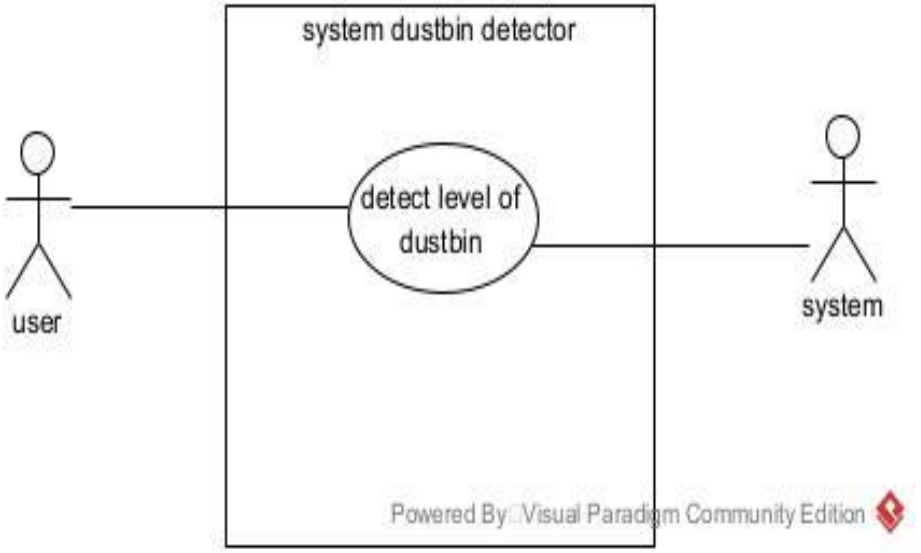
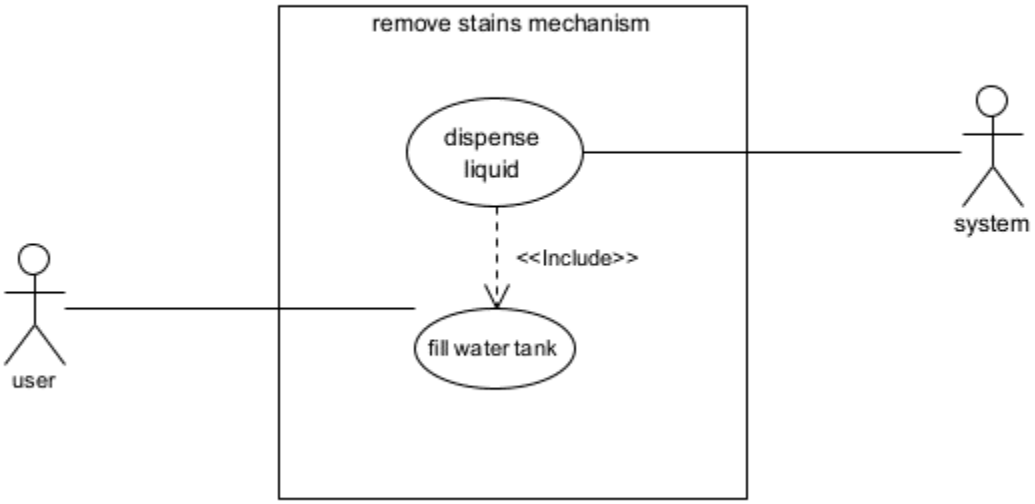
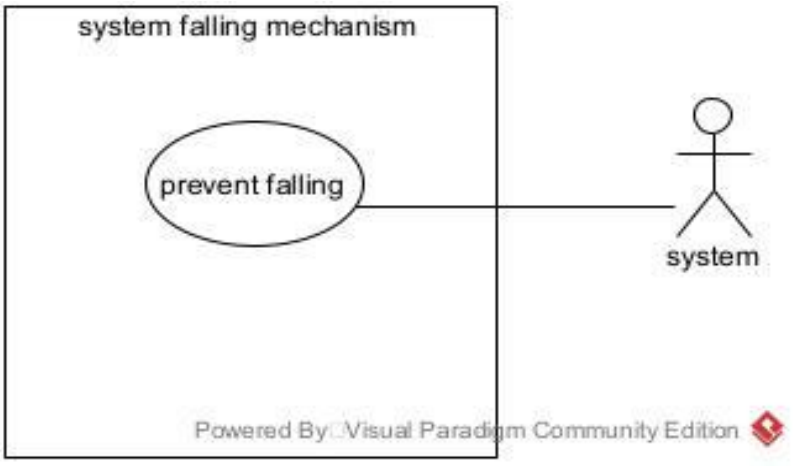
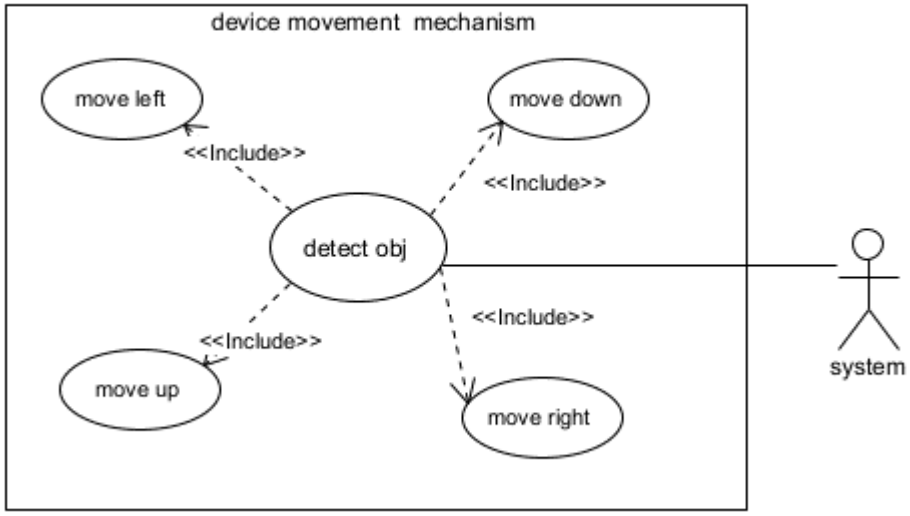
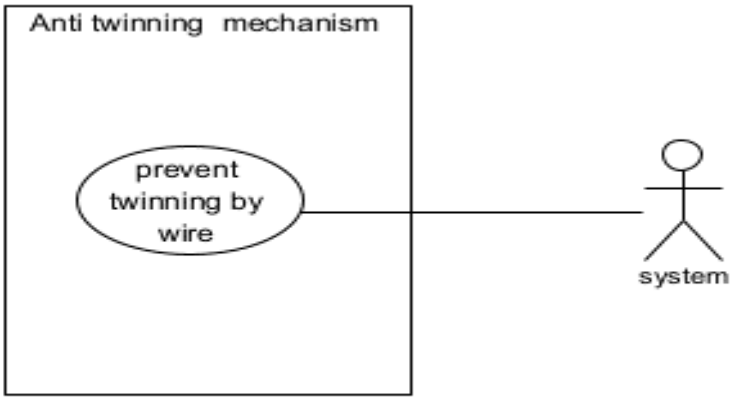
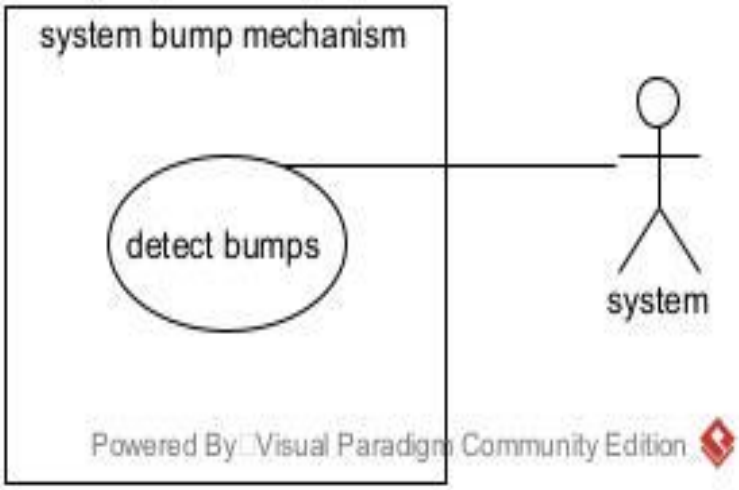

system dustbin detector
detect level of dustbin
user
system
Powered By Visual Paradigm Community Edition

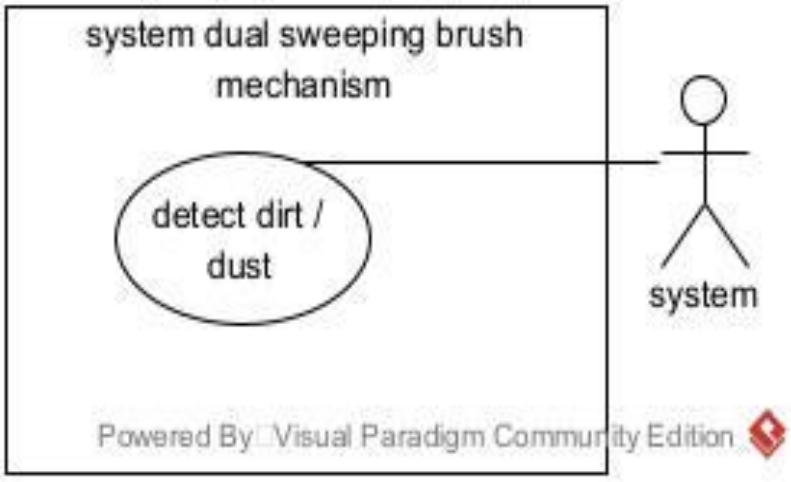

remove stains mechanism
dispense liquid
system
<<Include>>
fill water tank
user


system falling mechanism
prevent falling
system
Powered By Visual Paradigm Community Edition


device movement mechanism
move left
move down
<<Include>>
<<Include>>
detect obj
<<Include>>
<<Include>>
move up
move right
system


Anti twinning mechanism
prevent twinning by wire
system


system bump mechanism
detect bumps
system
Powered By Visual Paradigm Community Edition


system dual sweeping brush mechanism
detect dirt / dust
system
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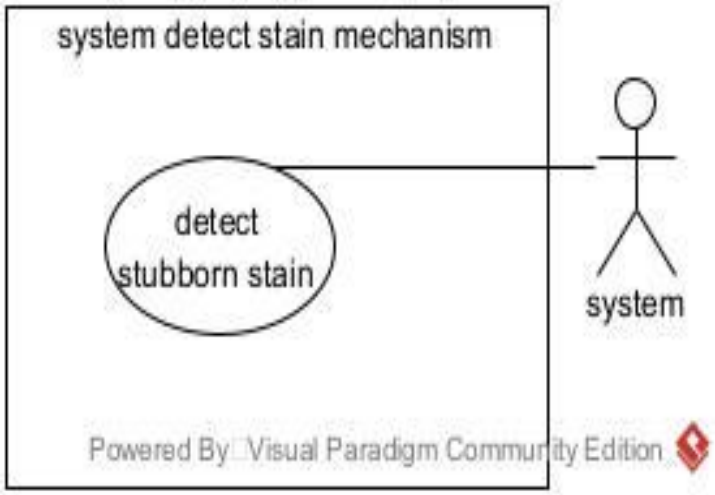
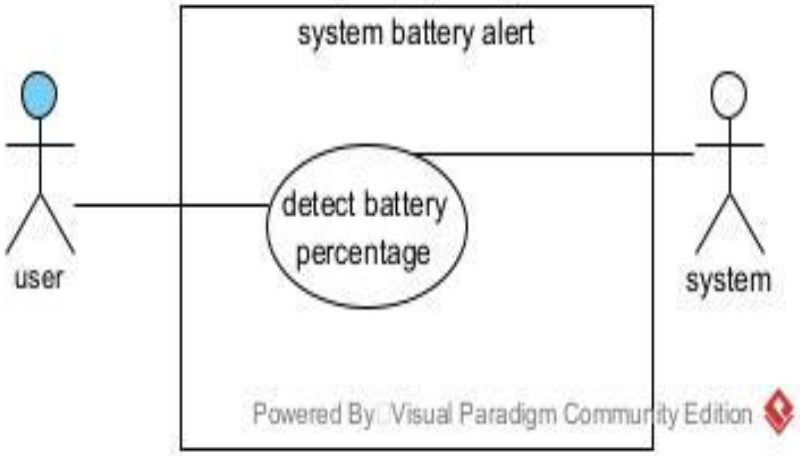
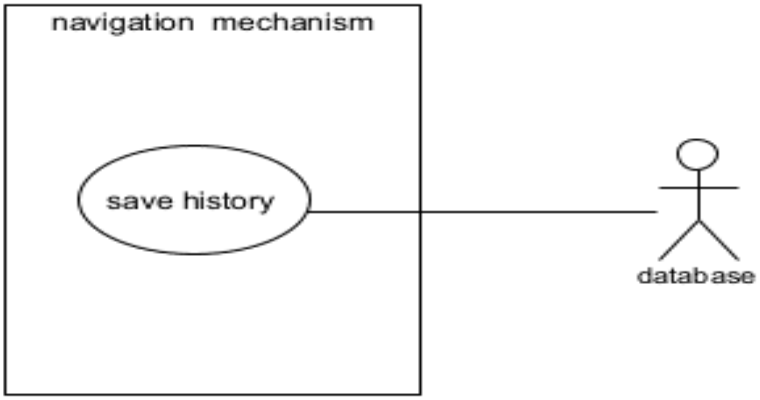
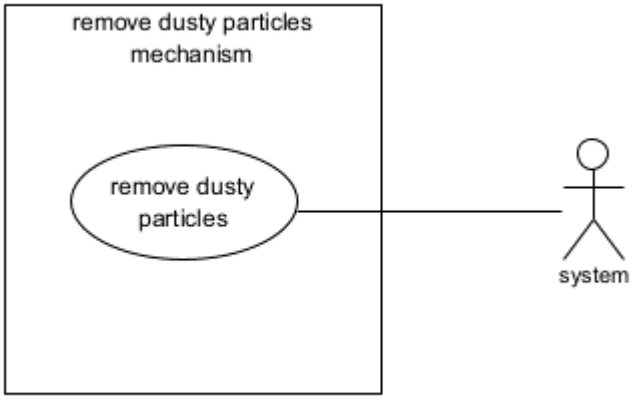
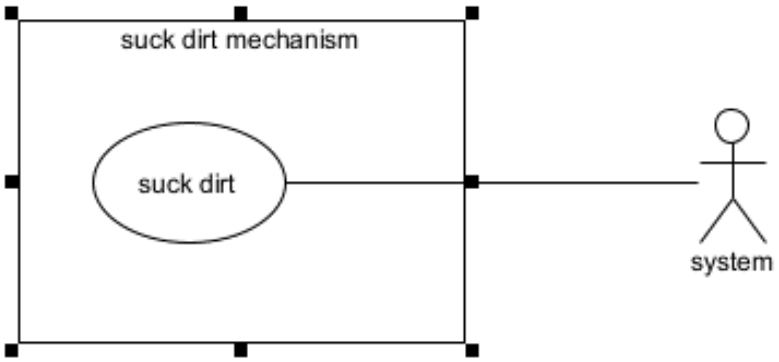
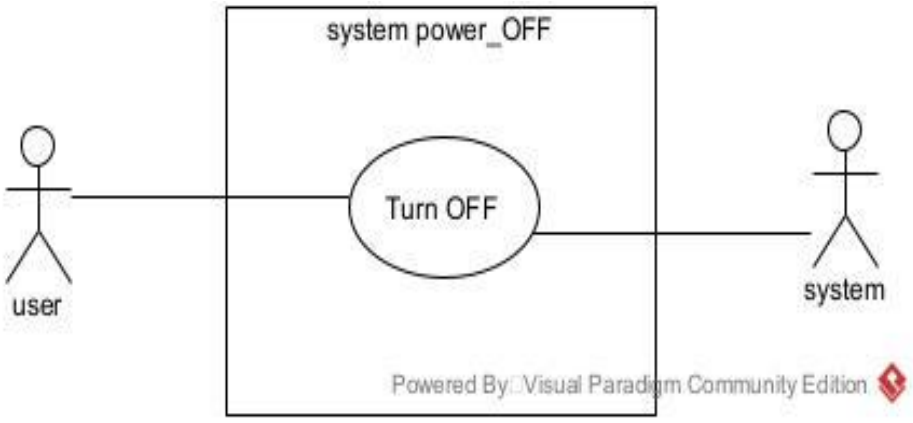

system detect stain mechanism
detect
stubborn stain
system
Powered By: Visual Paradigm Community Edition


system battery alert
user
detect battery
percentage
system
Powered By: Visual Paradigm Community Edition


navigation mechanism
save history
database


remove dusty particles mechanism
remove dusty particles
system


suck dirt mechanism
suck dirt
system


system power_OFF
Turn OFF
user
system
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TABULAR FORM OF USE CASE

Use Case ID:	UC-ID-1		
Use Case Name:	Turn ON		
Actor	User , system		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	User shall be able to **start** System by pressing **start button**		
Preconditions:	PRE-1.system should be charged		
Postconditions:	System starts successfully		
Trigger:	press on start button		
Normal Flow:	**Actor** 1.User press on 'start' button	**System** 2.system will start the device.	
Alternative Flows:	There is no alternate flow to this system.		
Exception	• Maybe the device is not charged • Maybe by pressing start button device doesn't start		

Use Case ID:	UC-ID-2		
Use Case Name:	Set Language		
Actor	User ,system		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	User shall be able to **change language** by pressing **language button**		
Preconditions:	PRE-1.system should be start		
Postconditions:	Language for device set successfully		
Trigger:	Press on language button		
Normal Flow:	**Actor** 1.user press on start button 3.User press on 'language' button 5.User press again on language button 7.User pressed continuously for 5 secs on language button	**System** 2.system turn on the device 4.system show language 6.System show next language. 8.system select this language on device	
Alternative Flows:	There is no alternate flow to this system.		
Exception	• Maybe the system is not ON • Maybe by pressing language button system doesn't show language • May be system doesn't language by holding language button for 5 secs		

Use Case ID:	UC-ID-3		
Use Case Name:	MANAGE DIRECTION		
Actor	System		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	system shall be able to tell directions for device movement		
Preconditions:	PRE-1.system should be turn ON		
Postconditions:	Device move in well arranged way		
Trigger:	Move device in different directions		
Normal Flow:	**User** **1**.user press on start button	**System** 2.System turn on the device 3.System move the device in different direction for cleaning 4.Device move in forward direction. 5.if object is detect system tells device now where to move LEFT ,RIGHT , UP ,DOWN.	
Alternative Flows:	There is no alternative flow for system		
Exception	Device doesn't move Device make wrong direction		

Use Case ID:	UC-ID-4		
Use Case Name:	Prevent falling		
Actor	System		
Created by:	Suneha ravi	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	system shall be able to keep Robovac from **falling down** the stairs. And capable of stopping the system once it approaches a ledge.		
Preconditions:	PRE-1.device is turn ON PRE-2.device is moving PRE-3device is near from the stairs		
Postconditions:	System Detect stair and move device in another direction opposite to stairs		
Trigger	Save device from falling		
Includes:	• System is ON • System is moving		
Normal Flow:	**User** 1.user press on start button	**System** **2.**System turn on the device 3system Move the device in different direction for cleaning 4.Stairs are near from device and system detects 5.system change the direction of device and save device from falling.	
Alternative Flows:	There is no alternative flow for this use case.		
Exception	Device fall from stairs		

Use Case ID:	UC-ID-5		
Use Case Name:	**Prevent wheel stucking**		
Actor	System		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
ate Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	system shall be able to Prevents system from wheel getting stuck		
Preconditions:	PRE-1.system is ON PRE-2 system is moving		
Postconditions:			
Trigger:	Safety provide to wheels		
Normal Flow:	**User** 1.user press on start button	**System** 2.system turn on the device 3.system move device to perform cleaning 4.System detect object where wheel are supposed to stuck . 5.system save wheel from getting stuck by object.	
Alternative Flows:	There is no alternate flow for this system.		
Exception	The device is not on Wheels are stuck with something		

Use Case ID:	UC-ID-6		
Use Case Name:	**Prevent wire twining**		
Actor	**System**		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	system shall be able to Prevents the device getting twined by wires.		
Preconditions:	PRE-1.system is ON PRE-2 system is moving		
Postconditions:	Device is saved from twinning by wires.		
Trigger:	Safe system from getting twined by wires		
Normal Flow:	**System** 1.User turn on system	**System** 2.System turn on the device 3.device is moving for cleaning and system detects wires. 4.System safe device from getting twinned by wires.	
Alternative Flows:	There is no alternative flow for this device		
Exception	• System doesn't detect wires and Device is twinned by wires.		

Use Case Name:	**Detect Hairs**		
User Case ID	**UC-ID-9**		
Actor	**System**		
Created by:	Suneha	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	System shall be able for detecting hairs		
Preconditions:	PRE-1.system is ON		
Postconditions:	Detect hairs successfully		
Trigger:	Device have to detect hairs		
Normal Flow:	**User**	**System** 1. System is ON 2. System detect hairs	
Alternative Flows:	There is no alternative flow for this system		
exception	• System doesn't detect Dirt		

Use Case Name:	**Detect Dirt**		
User Case ID	**UC-ID-8**		
Actor	**System**		
Created by:	Suneha	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	system shall be able for detecting DIRT		
Preconditions:	PRE-1.system is ON		
Postconditions:	Detect dirt successfully		
Trigger:	Device have to detect dirt		
Normal Flow:	**User**	**System** 1. System is ON 2. System detect dirt	
Alternative Flows:	There is no alternative flow for this system		
exception	System doesn't detect Dirt		

Use Case ID:	UC-ID-10		
Use Case Name:	Remove dirt		
Actor	System		
Created by:	Suneha	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	• System shall be able to work together to **catch dust by dual sweeping brushes**		
Preconditions:	PRE-1. System is ON PRE-2.Reached where cleaning is needed		
Postconditions:	System clean the area with dirt.		
Trigger:	catch dust ,dirt.		
Normal Flow:	**User** 1.Turn on the system	**System** **2.**system moves. **3.system** will catch dust ,dirt and hairs	
Alternative Flows:	There is no alternative flow for this system		
Exception	• System doesn't detect dirt and doesn't clean the area with dirt.		

Use Case ID:	UC-ID-11		
Use Case Name:	Dispense liquid		
Actor	User ,System		
Created by:	Suneha	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	System shall be able to dispenses liquid to the microfiber cloth continually.		
Preconditions:	PRE-1. Turn on the system PRE-2.Fill the water tank		
Postcondition	Microfiber cloth is dispense by liquid continually		
Trigger:	dispense liquid on microfiber cloth		
Normal Flow:	**User** **1.**turn on device 2.Fill the water tank when its empty.	**System** 3.dispenses liquid to the microfiber cloth continually.	
Alternative Flows:	There is no alternative flow for this system		
Exception	• System doesn't dispense by liquid continually on Micro-fiber cloth		

Use Case ID:	UC-ID-12		
Use Case Name:	Remove stubborn stain		
Actor	System		
Created by:	Suneha	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	• System to mop your floor back-and-forth, which helps in removing the stubborn dirt, smudges and grime from the floors by microfiber cloth		
Preconditions:	PRE-1.system is ON PRE-2Water tank dispenses liquid to the microfiber cloth continually.		
Postconditions:	All stubborn dirt, smudges and grime from the floors are removed.		
Trigger:	Remove the stubborn dirt		
Normal Flow:	User 1.Turn on device	**System** **2.**reached where cleaning is needed **3.Detects and** Remove the stubborn stain, smudges and grime from the floors	
Alternative Flows:	There is no alternative flow for this system		
Exception	• System doesn't remove stubborn stain from the floor		

Use Case ID:	M1-UC13		
Use Case Name:	Remove hairs		
Actor	System		
Created by:	Suneha	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	• System shall be able to grab pet's hair .		
Preconditions:	PRE-1. System is ON PRE-2.Reached where hairs are detected		
Postconditions:	System clean the area with hairs.		
Trigger:	Remove pet hairs where detected		
Normal Flow:	**User** 1.Turn on the system	**System** **2.**System turn on. **3.**System detect hairs **4.**System will grab all hairs	
Alternative Flows:	There is no alternative flow for this system		
Exception	• System doesn't grab hairs where detected.		

Use Case ID:	UC-ID-14		
Use Case Name:	FILTERED DUST		
Actor	System		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	• System suctions dirt into the filtered dustbin through the air inlet.		
Preconditions:	PRE-1. System is ON PRE-2.System is in process of cleaning		
Postconditions:	System Suctions dirt into the filtered dustbin successfully		
Trigger	Suct dirt into dustbin		
Normal Flow:	User 1.user press on start button	System 2.System turn on the device 3.System detect dirt 4.Device Reached at point where it detects dirt 5.System Clean all dirt and Suctions dirt into the filtered dustbin	
Alternative Flows:	N/A		
Exception	System is not on Dustbin is fill System doesn't suck dirt into the filtered dustbin		
Use Case ID:	UC-ID-14		

Use Case ID:	UC-ID-15		
Use Case Name:	**CHECK level of dustbin**		
Actor	System		
Created by:		Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	system shall be able to detect when the dust bin is full and alert user.		
Preconditions:	PRE-1.system is ON PRE-2.system is in the process of cleaning		
Postconditions:	System Detects when dustbin is full and alert user		
Trigger:	Tell user level of dustbin		
Normal Flow:	**User** 1.User press on start button 5.User empty dustbin.	**System** 2.system start the device 3.System start the working of cleaning. 4.When dustbin is full and system detects and give alert to user.	
Alternative Flows:	There is no alternative flow for this system		
Exception	• System doesn't alert user to empty dustbin • System doesn't detect level of dustbin		

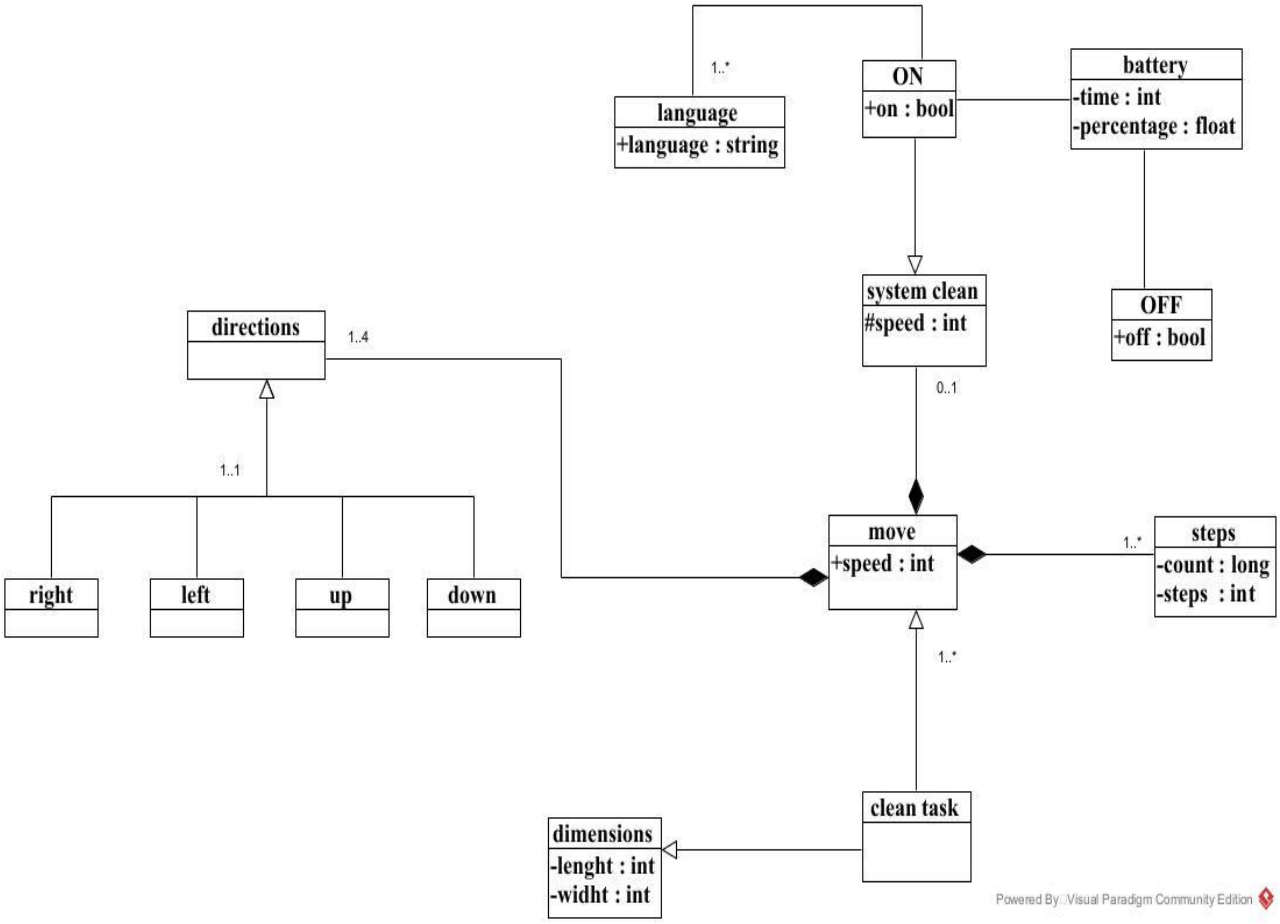
Use Case ID:	UC-ID-16		
Use Case Name:	**Save history**		
Actor	**System**		
Created by:	Suneha	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	System shall be able to save history of floor which spaces were cleaned or not.		
Preconditions:	PRE-1.system is ON PRE-2 system is in cleaning process		
Postconditions:	System save the History of cleaned places successfully		
Trigger:	Save history of cleaned area		
Normal Flow:	**User** 1.User turn on device by pressing start button	**System** 2.system start the device successfully 3.system detect dirt and start cleaning 4.system after cleaning save the history of cleaned areas and tell device of that areas which were cleaned.	
Alternative Flows:	There is no alternative flow for this system		

Use Case ID:	UC-ID-17		
Use Case Name:	Manage battery		
Actor	User ,System		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	system shall be able to manage the battery and the alert will show the user to charge the battery.		
Preconditions:	Battery should be low		
Postconditions:	Device will start working when its charged.		
Trigger:	Tell user battery timing of system		
Normal Flow:	**User** 1. User can see the battery percentage on the device. 3.User will connect the charger to the device.	**System** 2.The system will show an alert on the device that the battery is low. 4. system will show the battery life when it starts working.	
Alternative Flows:	There is no alternate flow to this system.		
exceptions	System will not charge while connecting to charger System Battery timing is less then the showing system battery time		

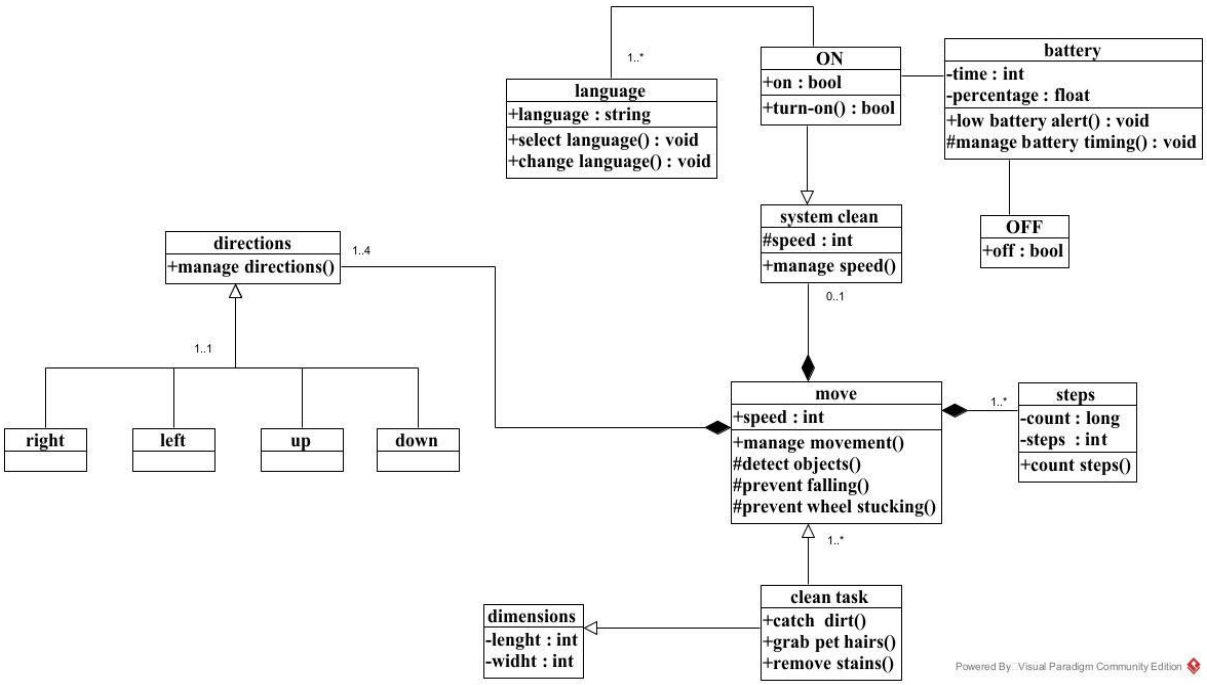
Use Case ID:	UC-ID-18		
Use Case Name:	Turn on sleep mode		
Actor	User ,system		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	User shall be able to put System on sleep by pressing **sleep button**		
Preconditions:	PRE-1.system should be start		
Postconditions:	Sleep mode turn on successfully		
Trigger:	Press on sleep mode button		
Normal Flow:	**Actor** 1.User press on start button 3.User press on ‘sleep’ button	**System** 2.System start the device 4.System Put device on sleep mode	
Alternative Flows:	There is no alternate flow to this system.		
Exceptions:	• System is not ON • By pressing sleep button system doesn’t sleep		

Use Case ID:	UC-ID-19		
Use Case Name:	Turn OFF		
Actor	User , system		
Created by:	RIMSHA RANI	Last Updated By:	RIMSHA ALI
Date Created:	5/28/2022	Last Revision Date:	5/30/2022
Description:	User shall be able to **stop** System by pressing **stop button**		
Preconditions:	PRE-1.system should be start		
Postconditions:	System shut-down successfully		
Trigger	Press on stop button		
Normal Flow:	**Actor** 1.user start the device by pressing start button 3.User press on ‘stop’ button	**System** 2.system starts the device 4.System turn off the device	
Alternative Flows:	There is no alternate flow to this system.		
Exceptions	System is not ON By pressing stop button system doesn’t stop		

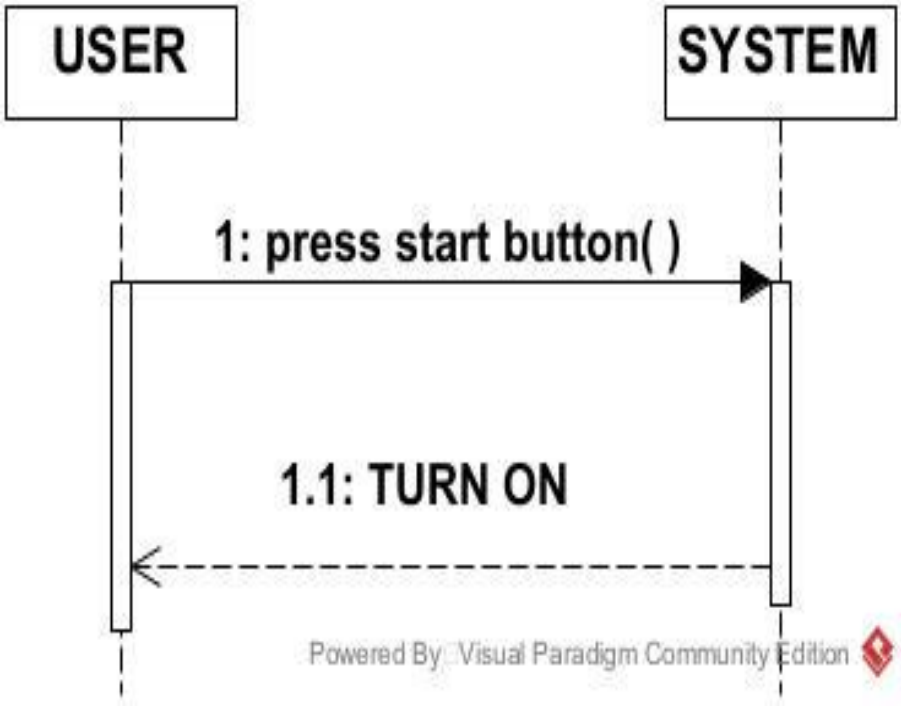
Domain model diagram.



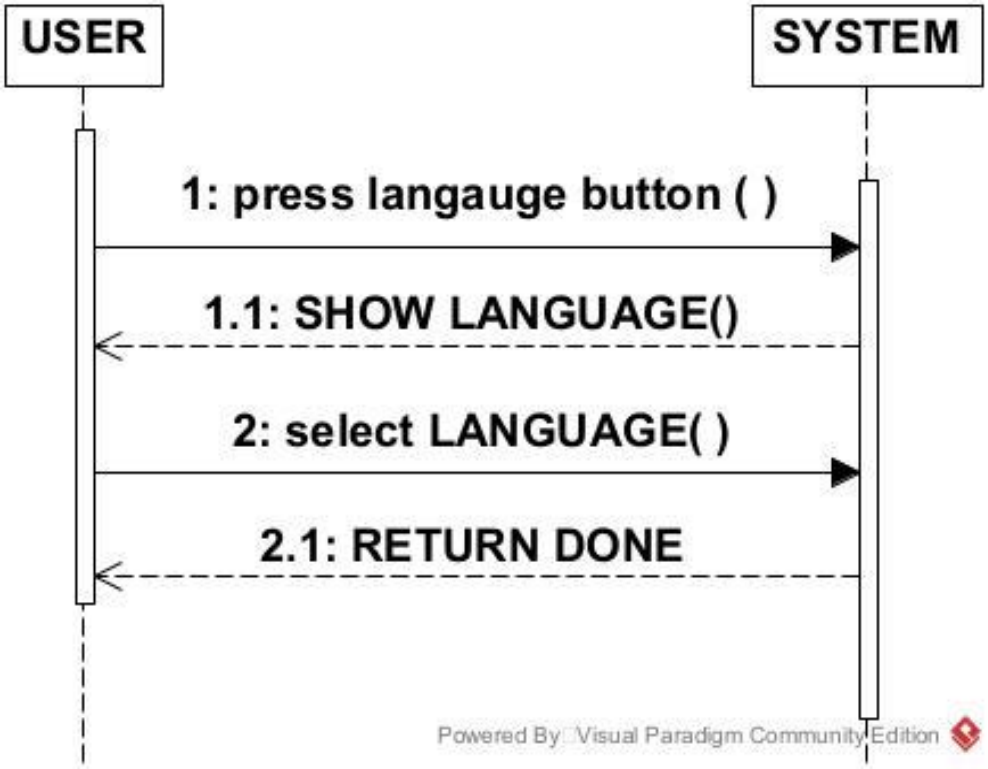
Class diagram.



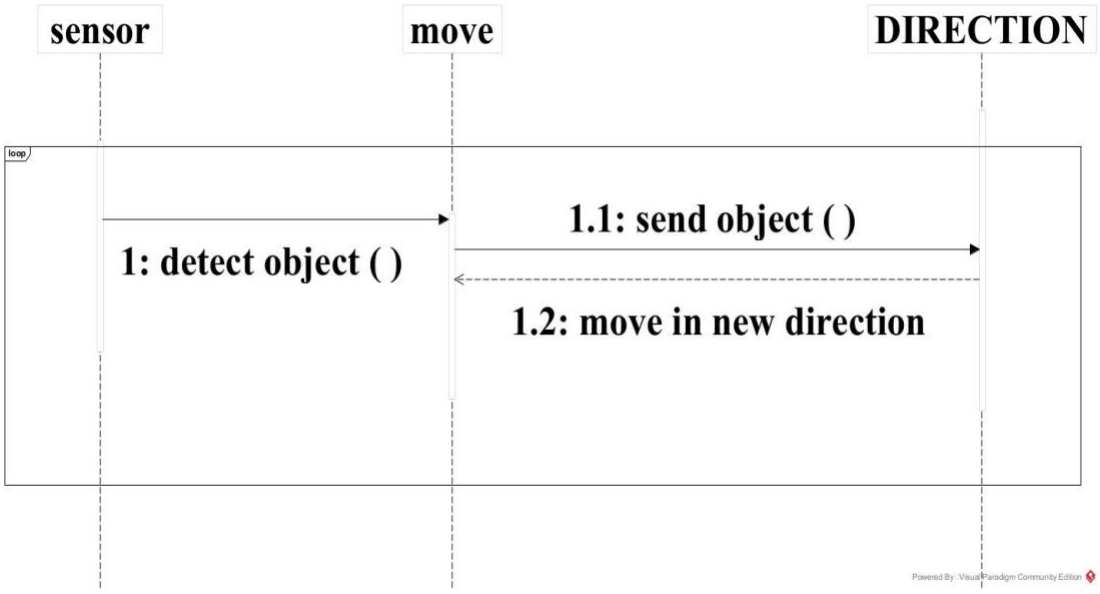
System Sequence Diagram 1



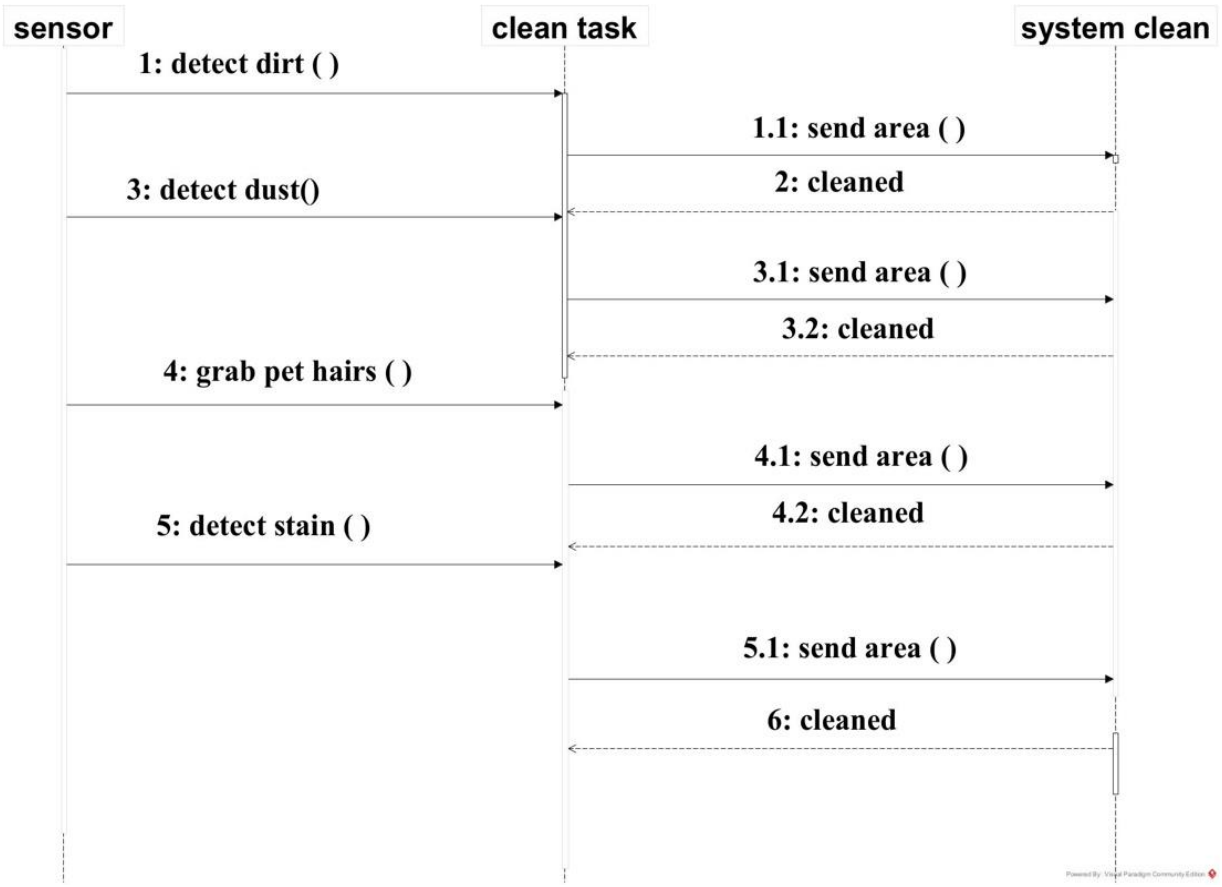
System Sequence Diagram 2



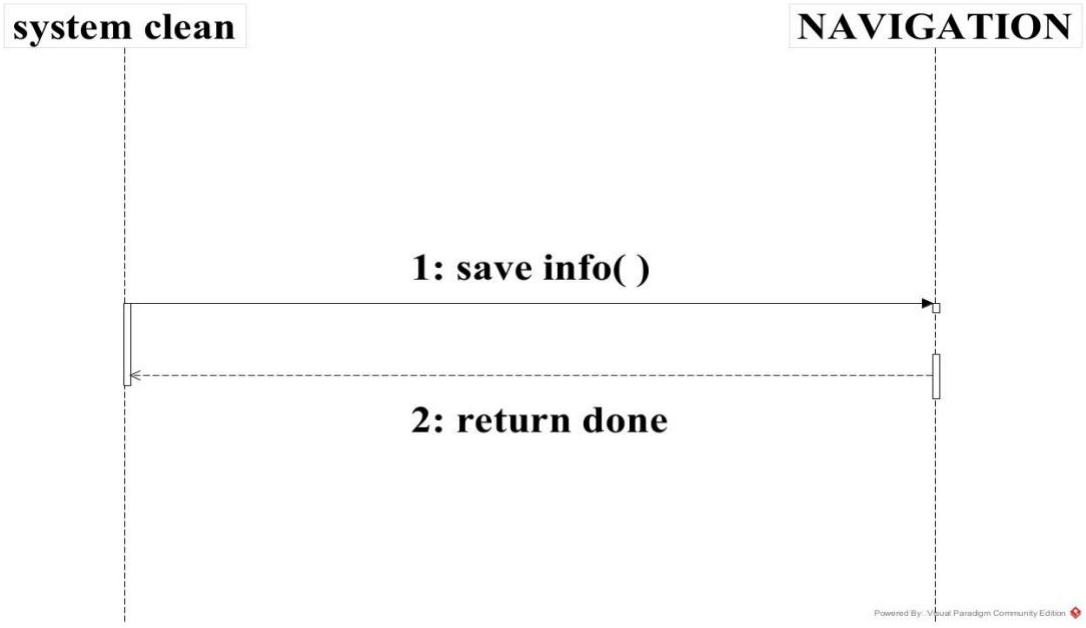
System Sequence Diagram 3



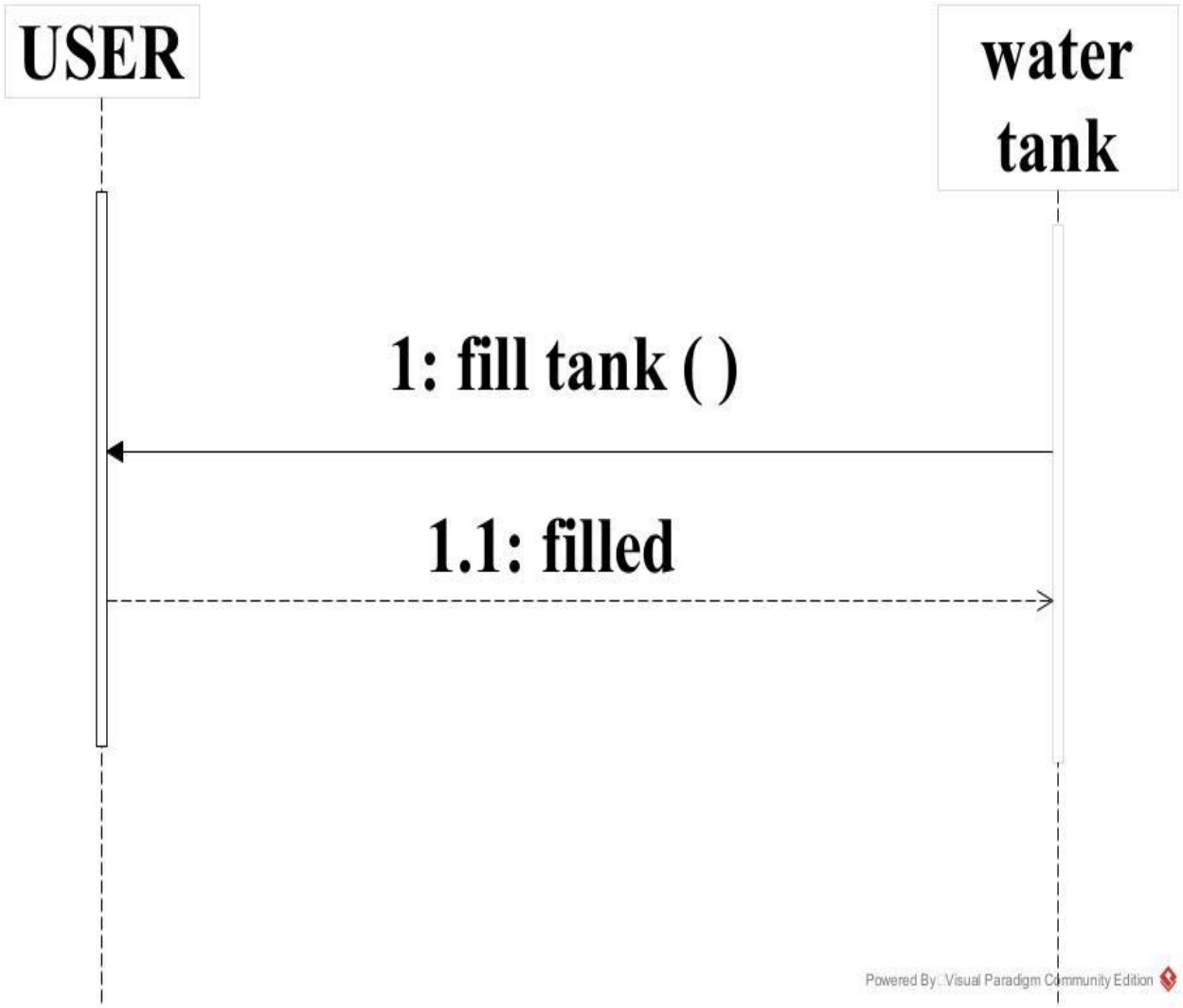
System Sequence Diagram 4



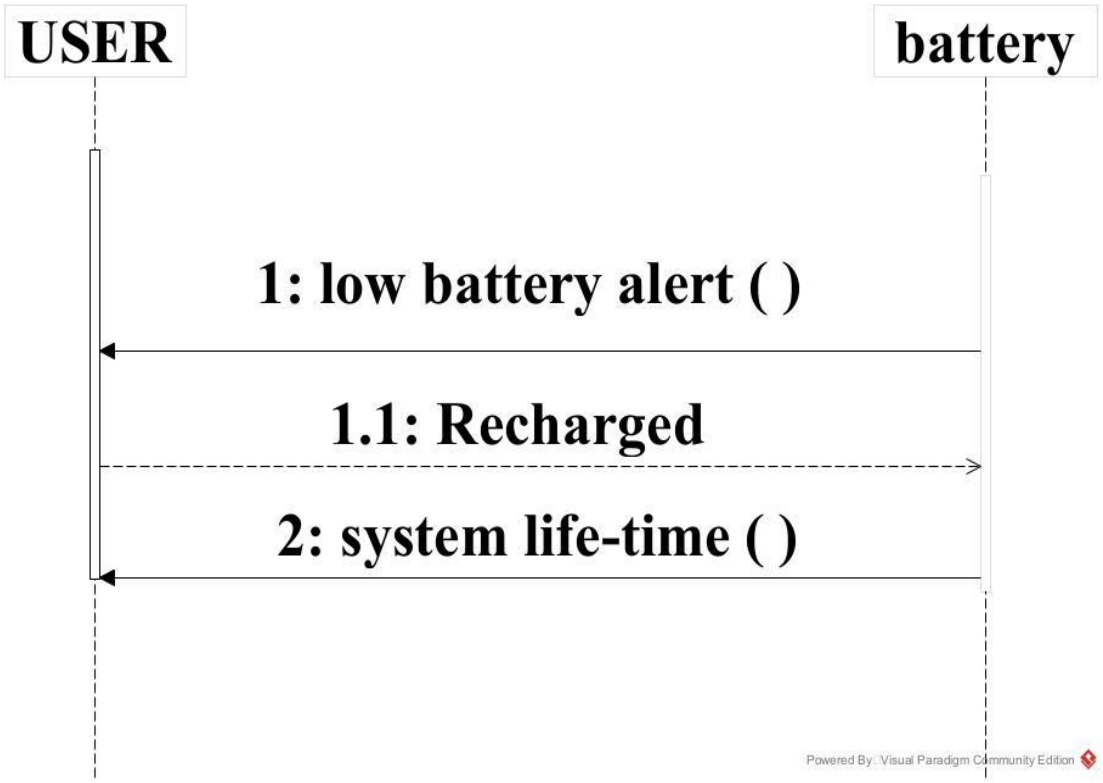
System Sequence Diagram 5



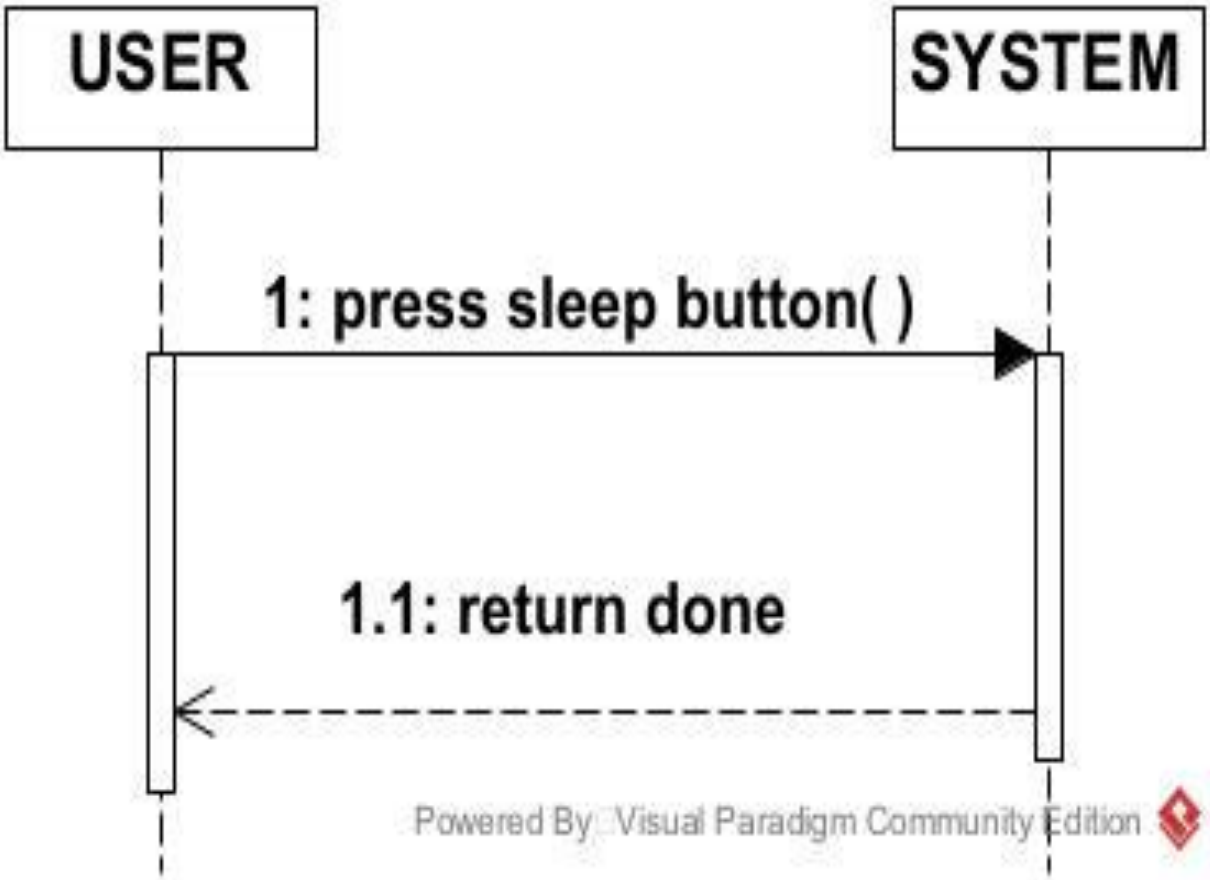
System Sequence Diagram 6



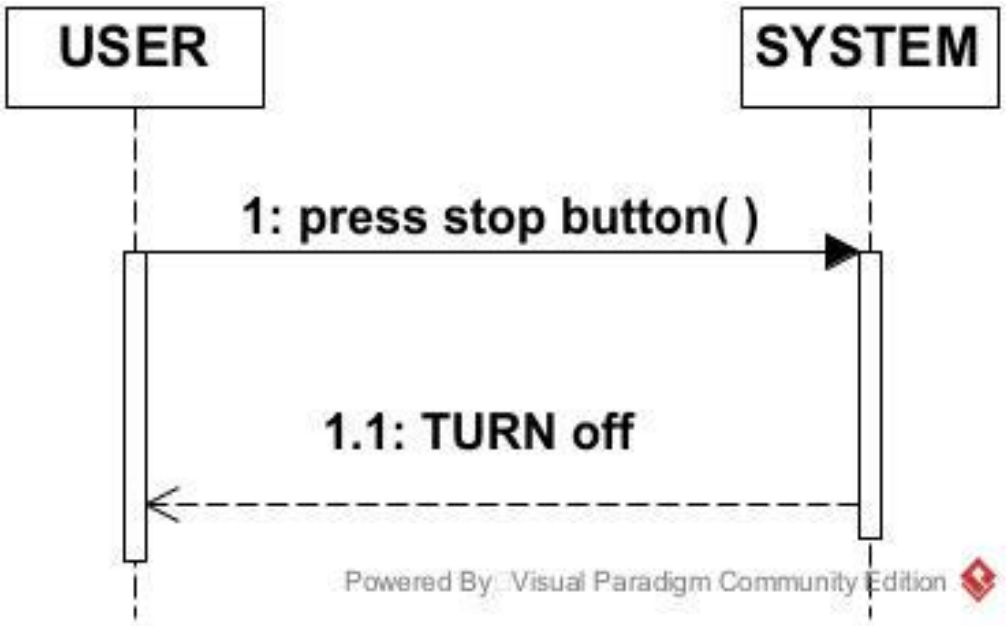
System Sequence Diagram 7



System Sequence Diagram 8

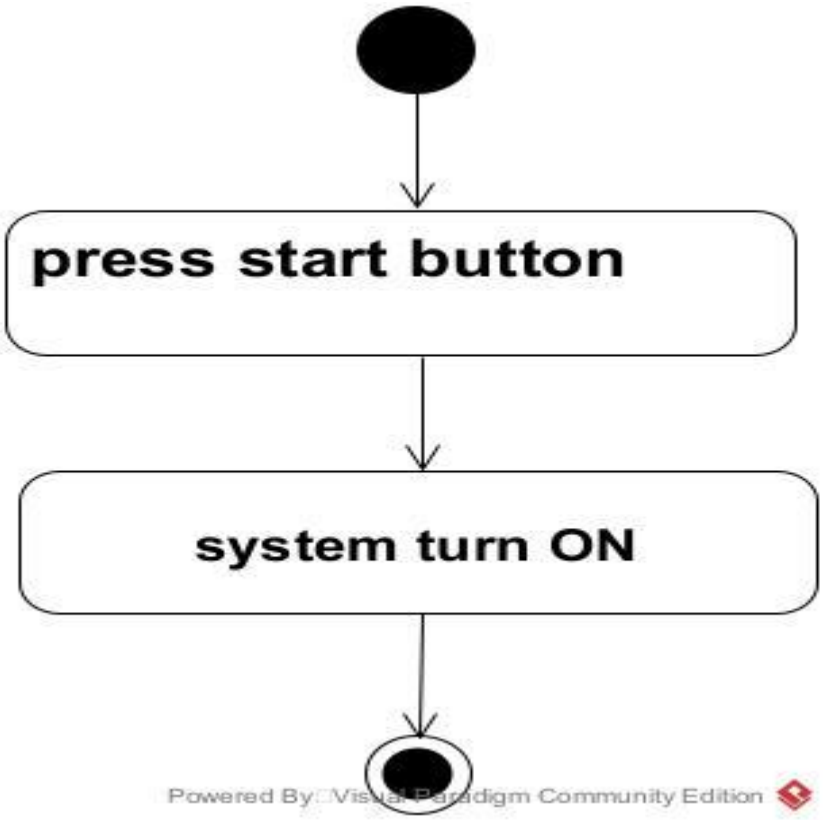


System Sequence Diagram 9

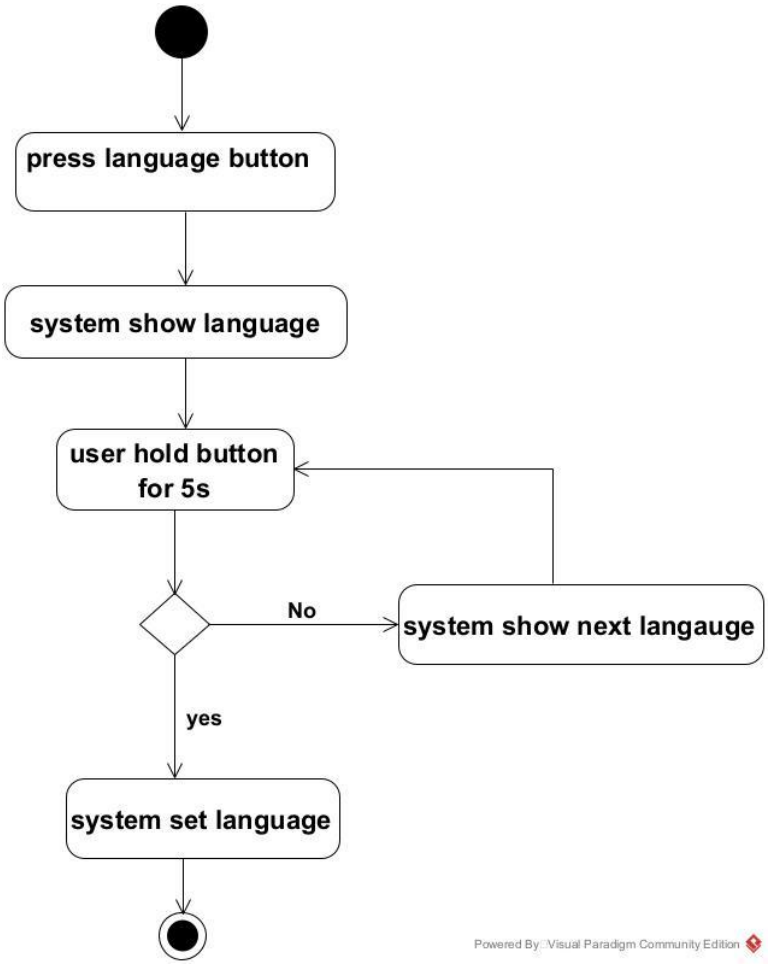


Sequence Diagram

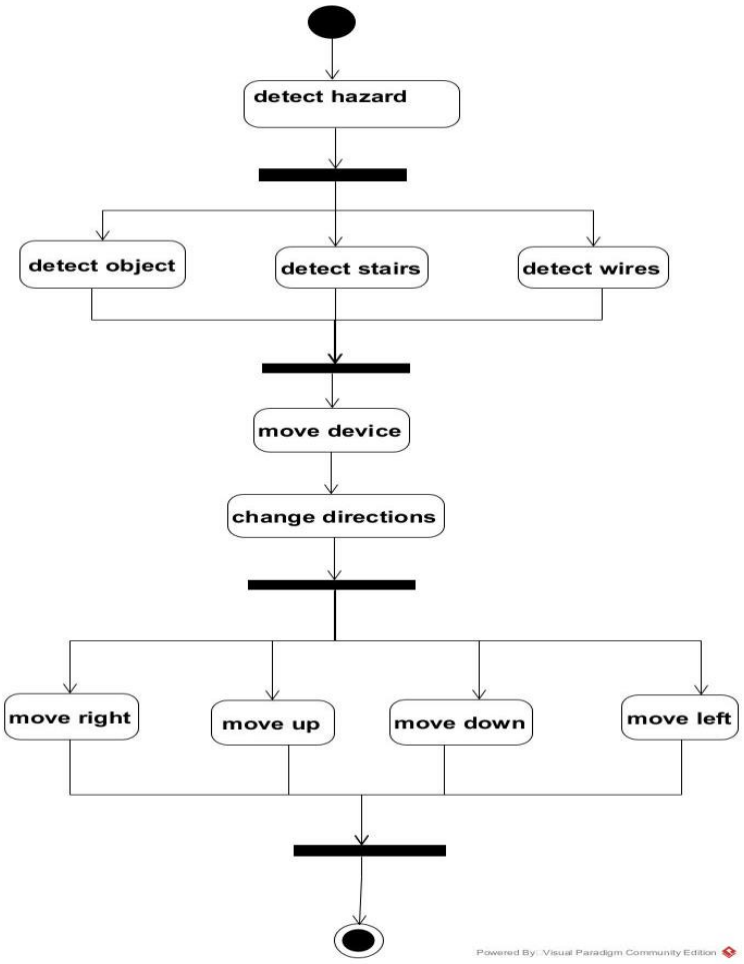
Activity Diagram 1



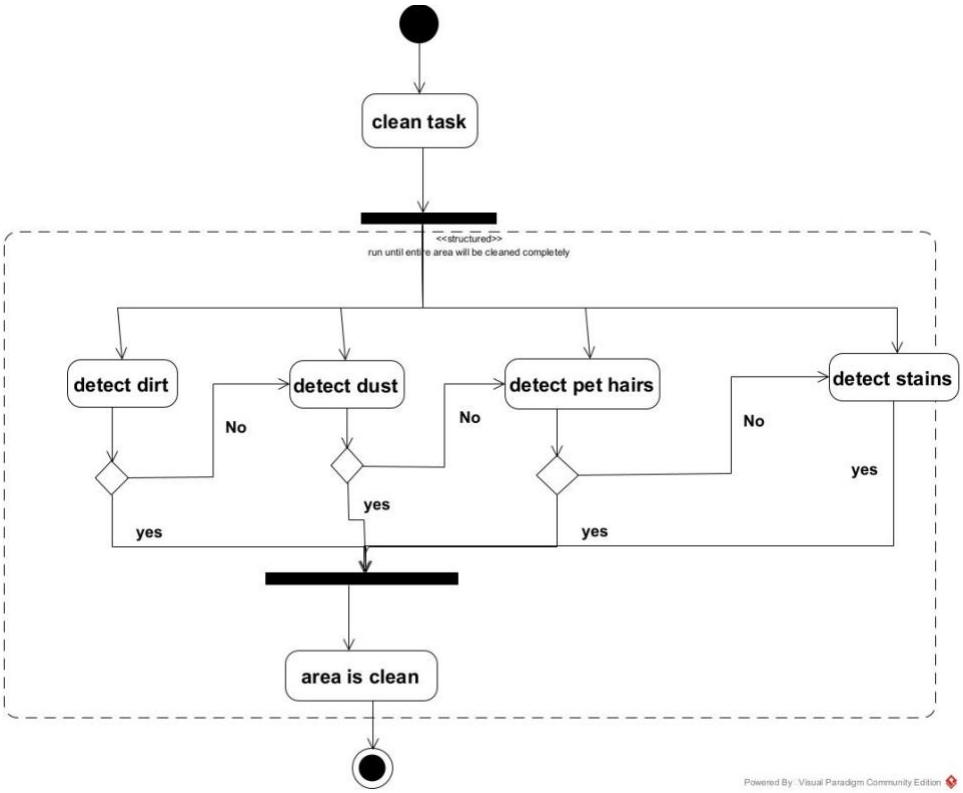
Activity Diagram 2



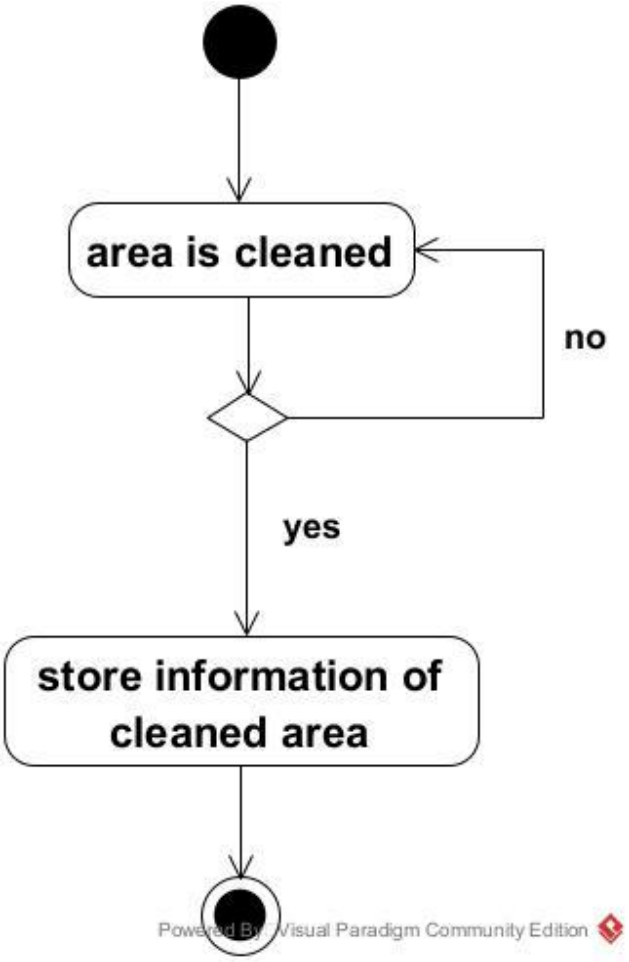
Activity Diagram 3



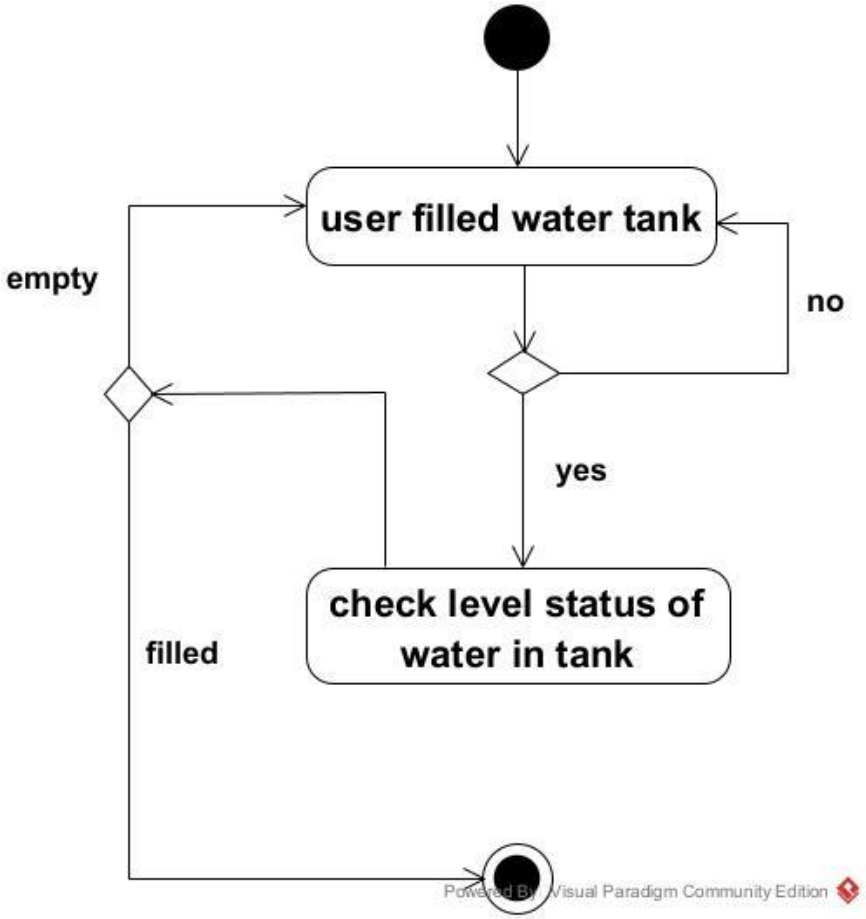
Activity Diagram 4



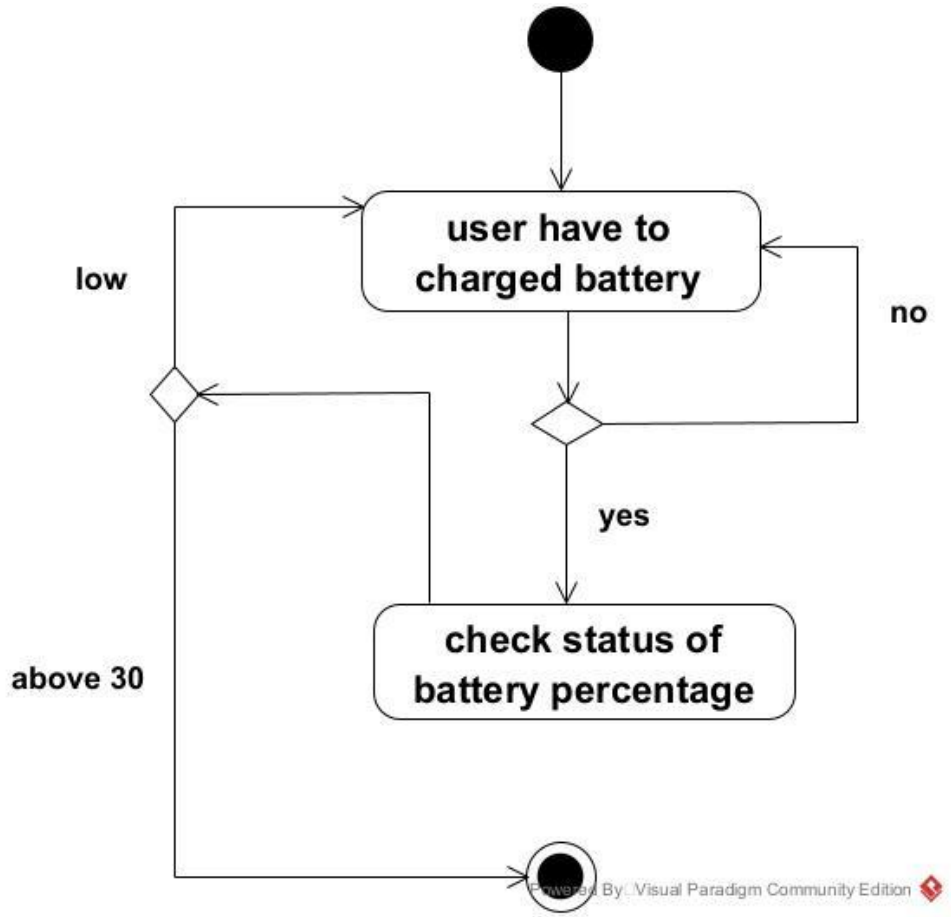
Activity Diagram 5



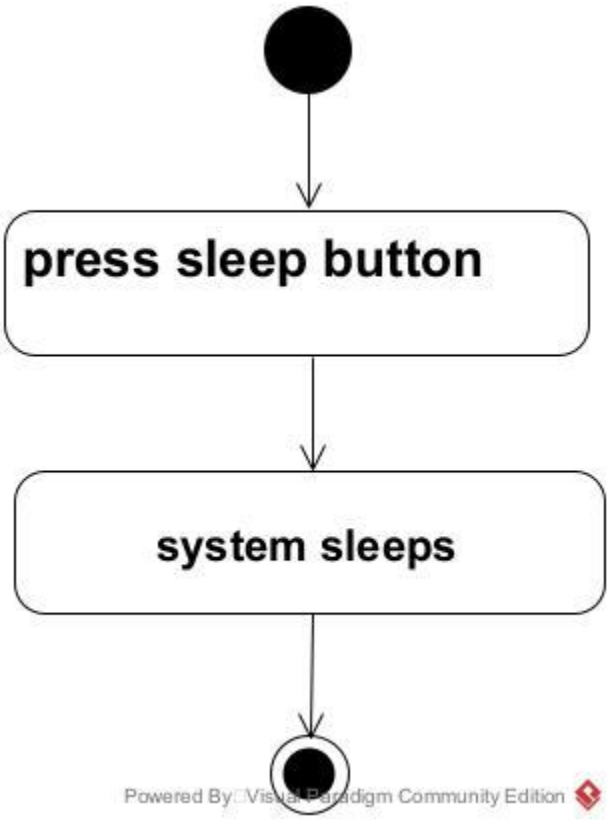
Activity Diagram 6



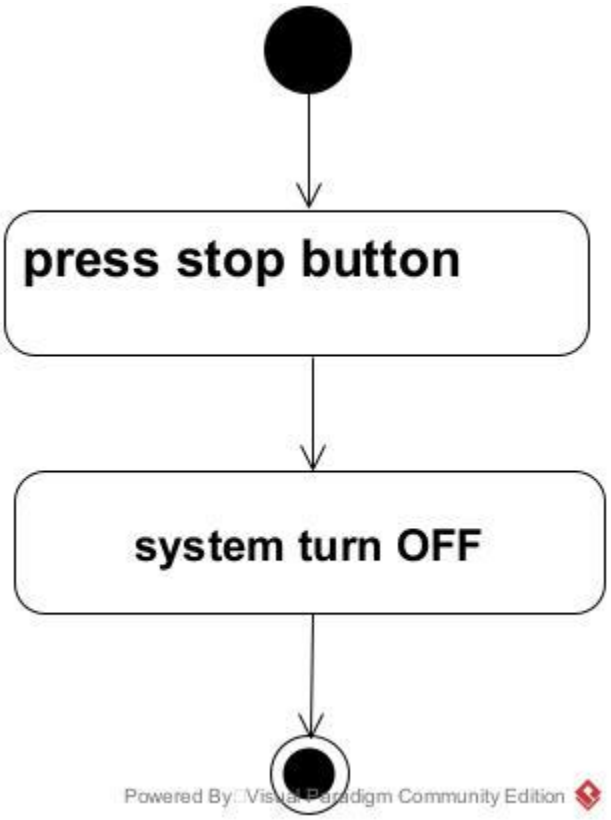
Activity Diagram 7



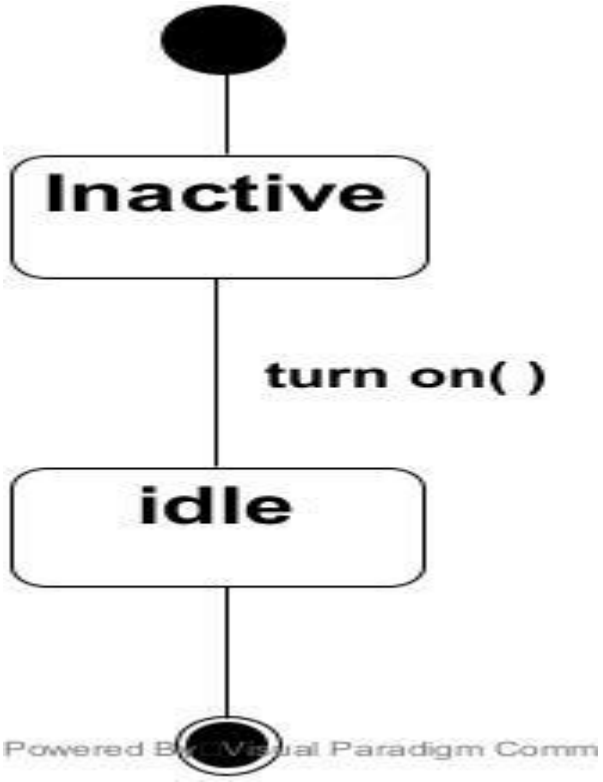
Activity Diagram 8



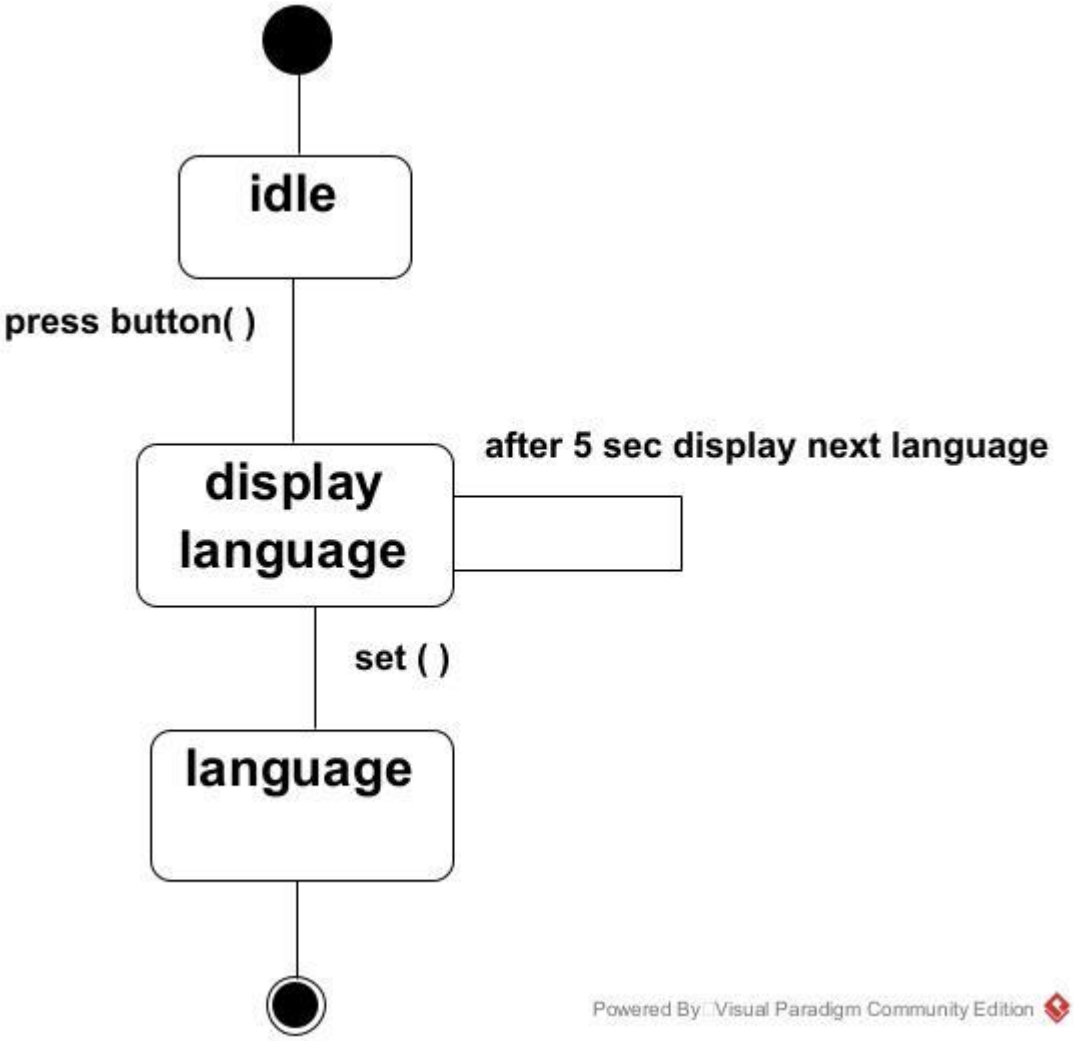
Activity Diagram 9



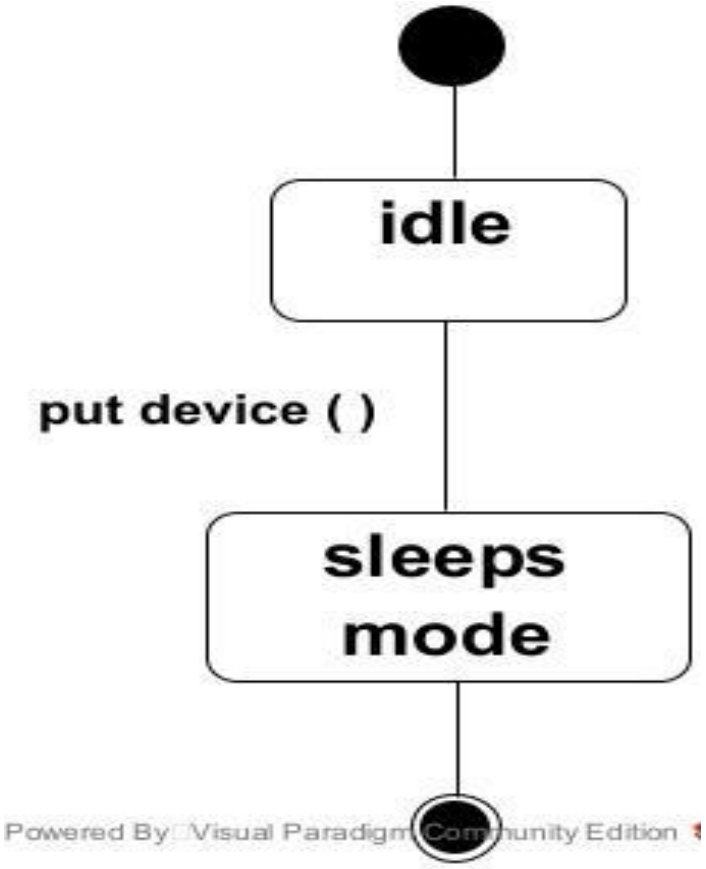
State diagram 1:



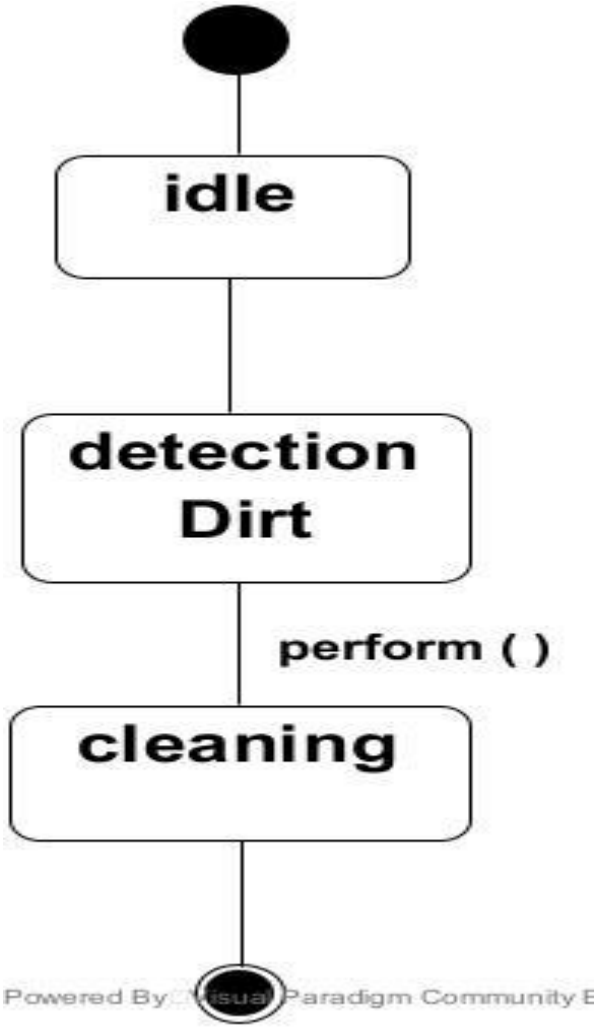
State diagram 2:



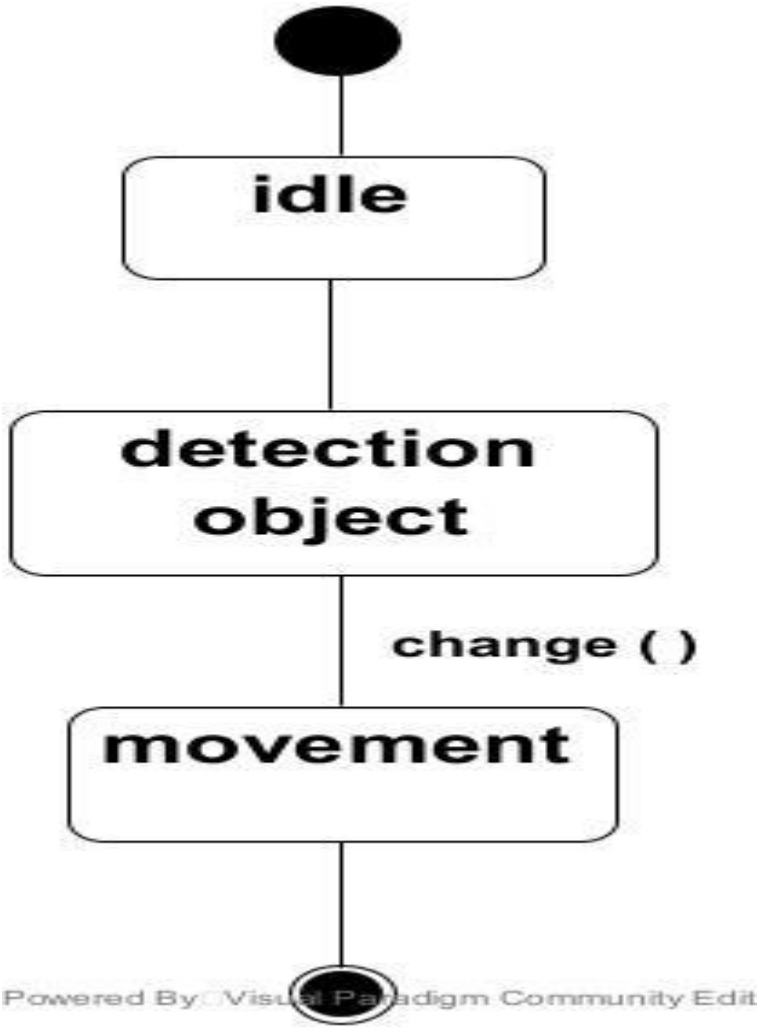
State diagram 3:



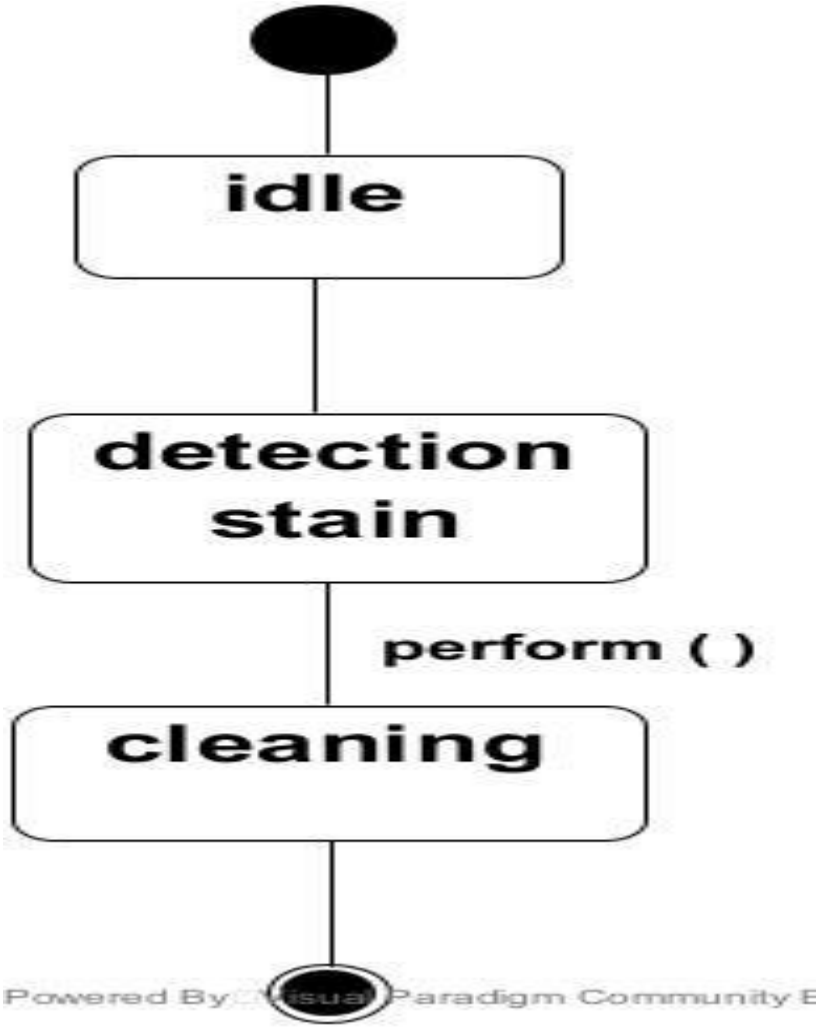
State diagram 4:



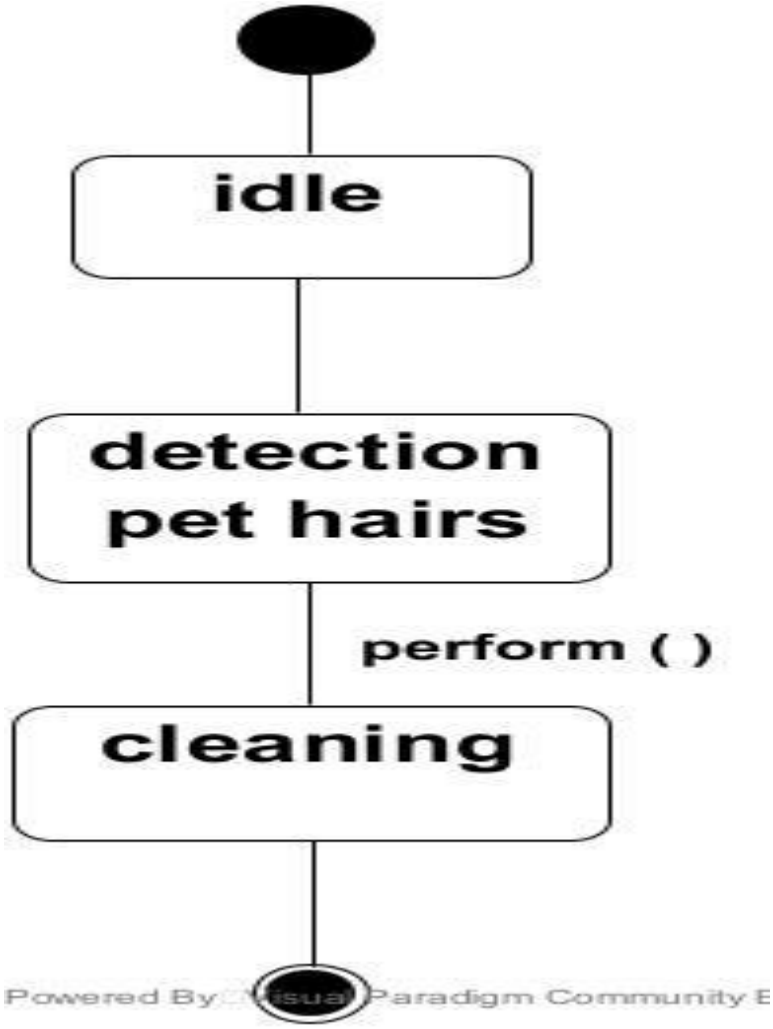
State diagram 5:



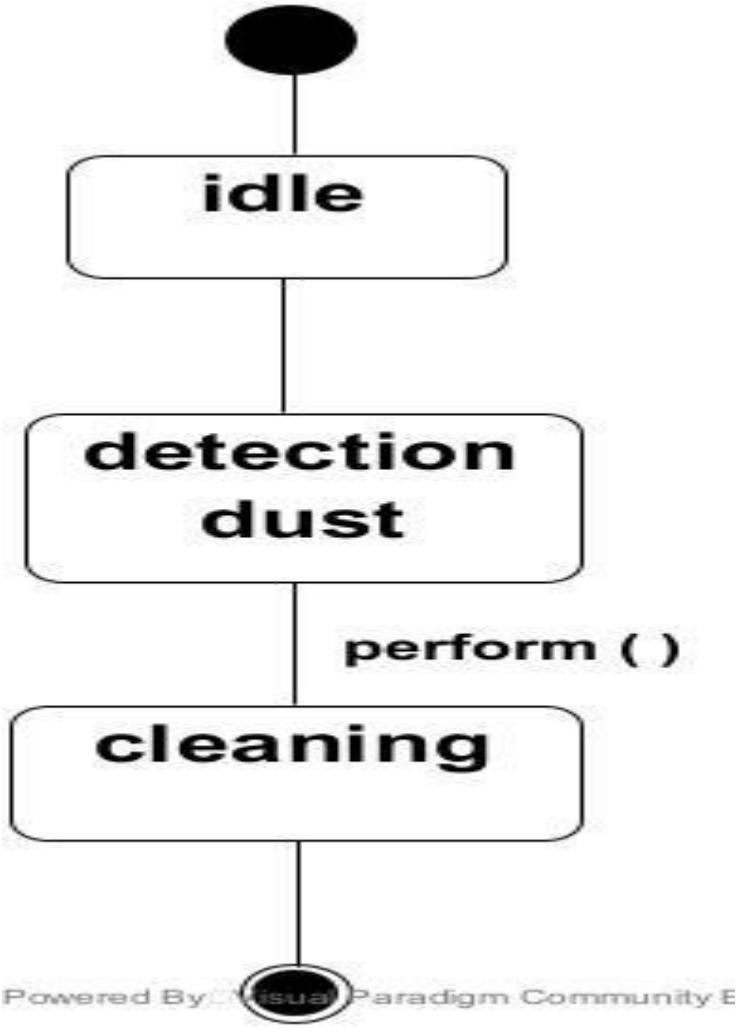
State diagram 6:



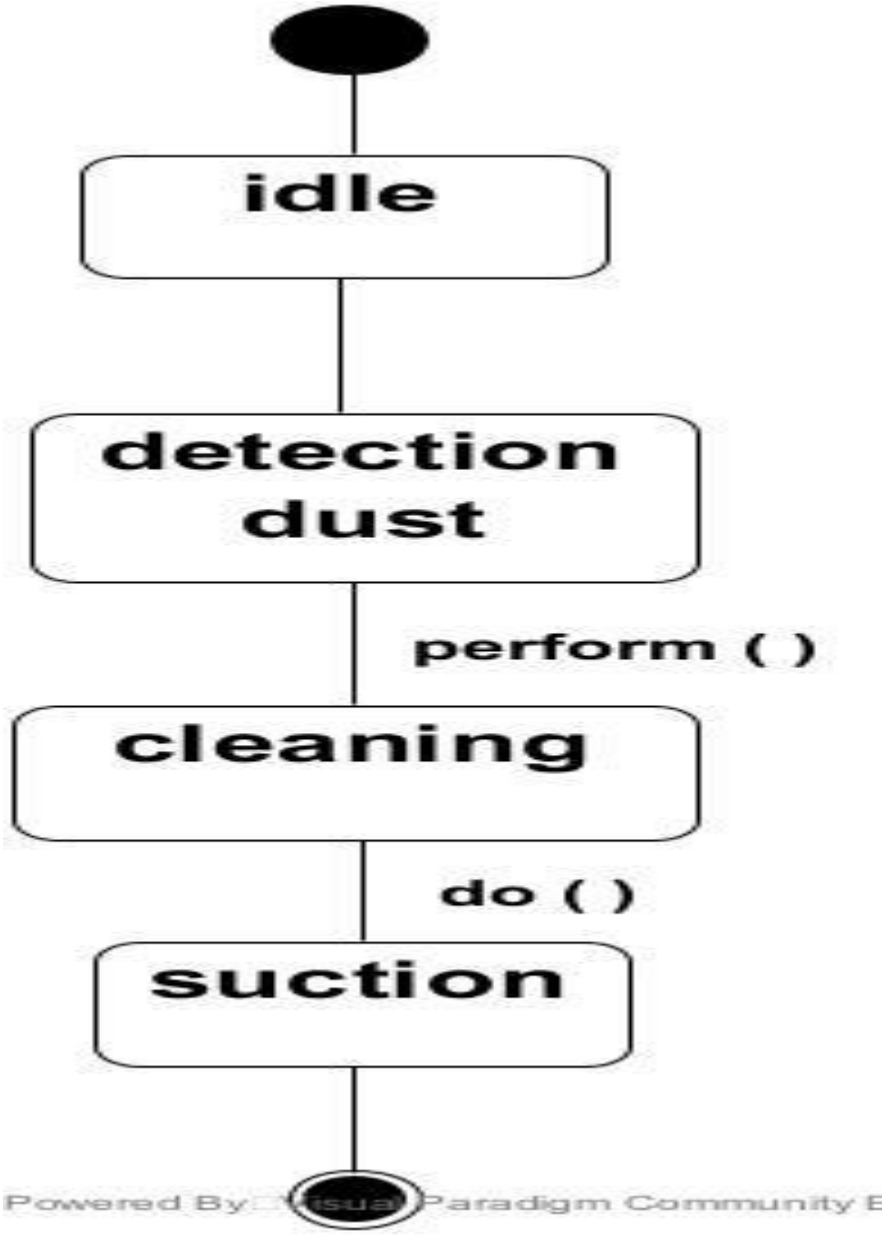
State diagram 7:



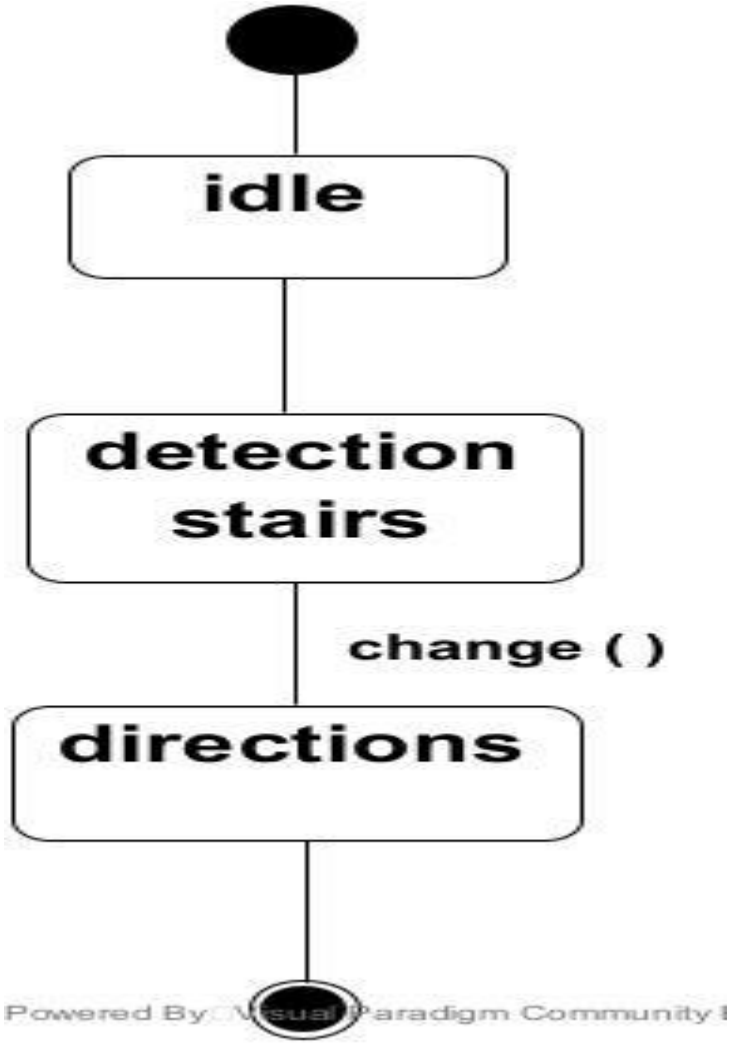
State diagram 9:



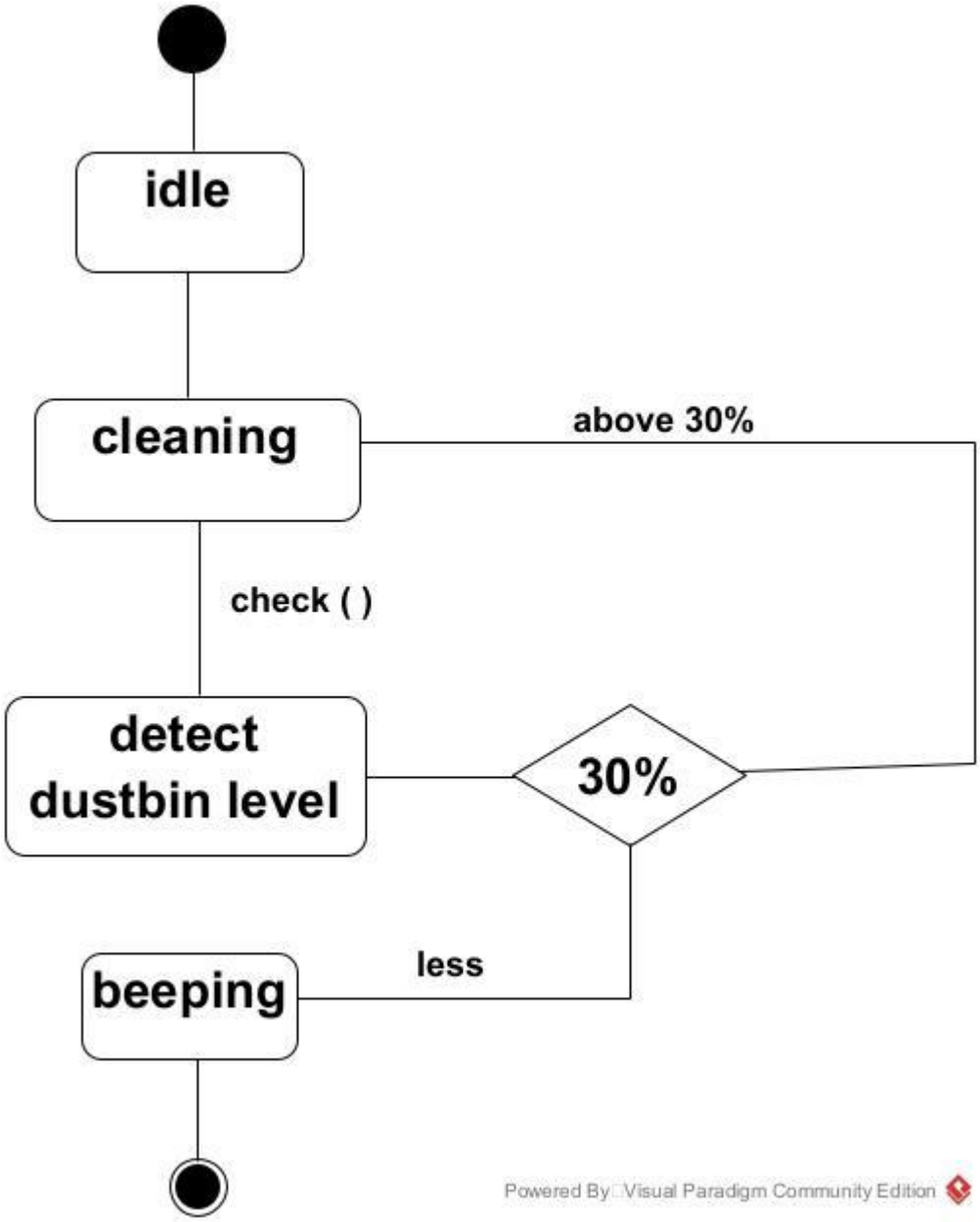
State diagram 10:



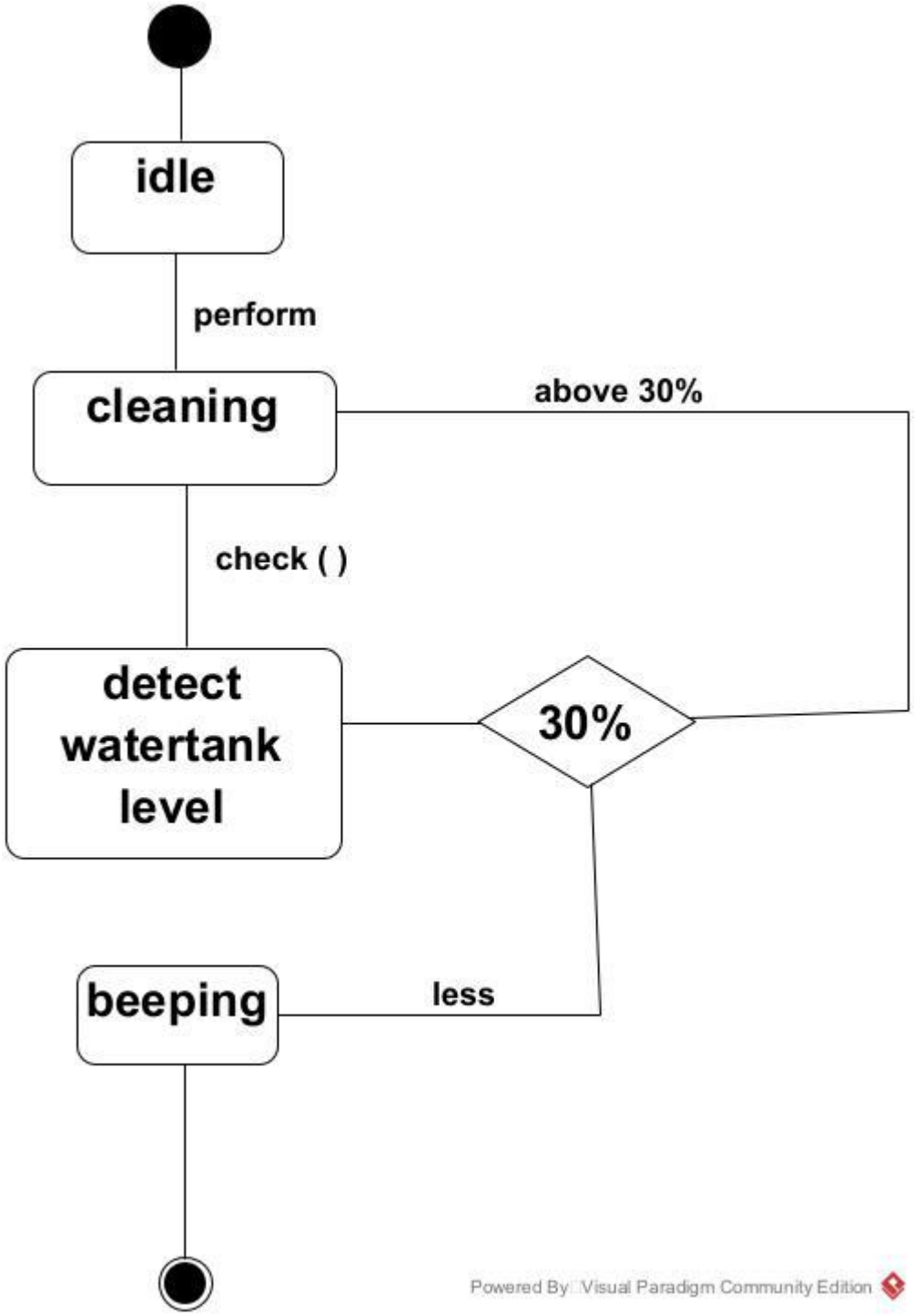
State diagram 9:



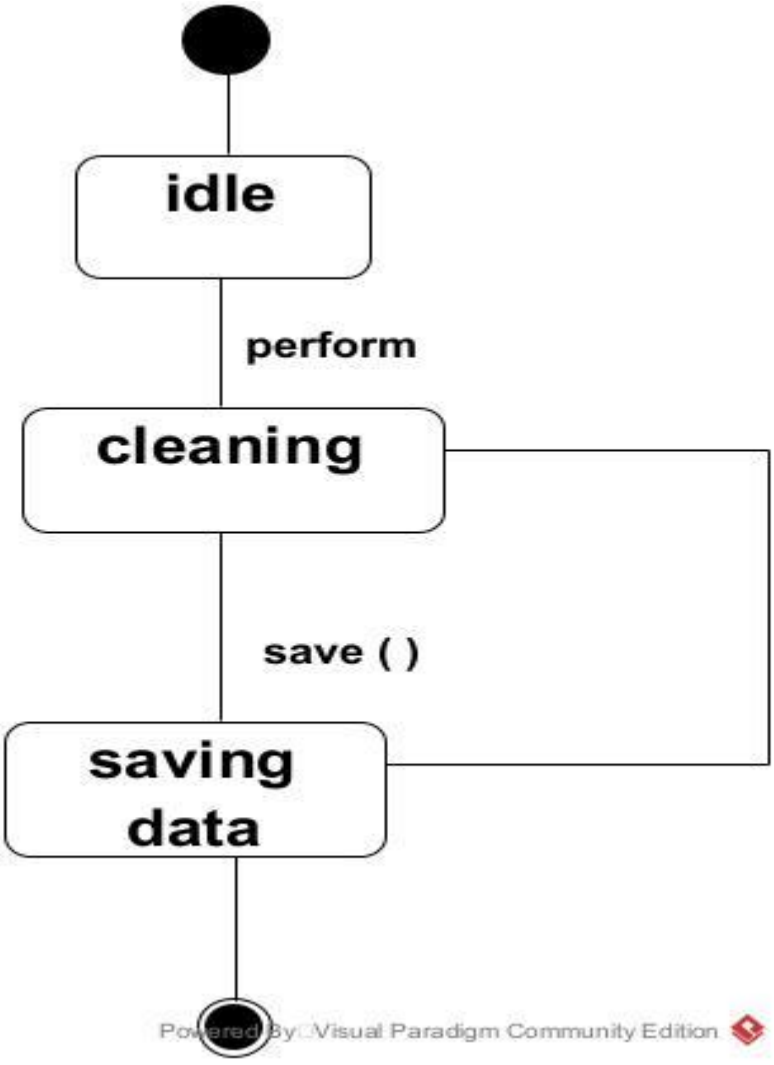
State diagram 10:



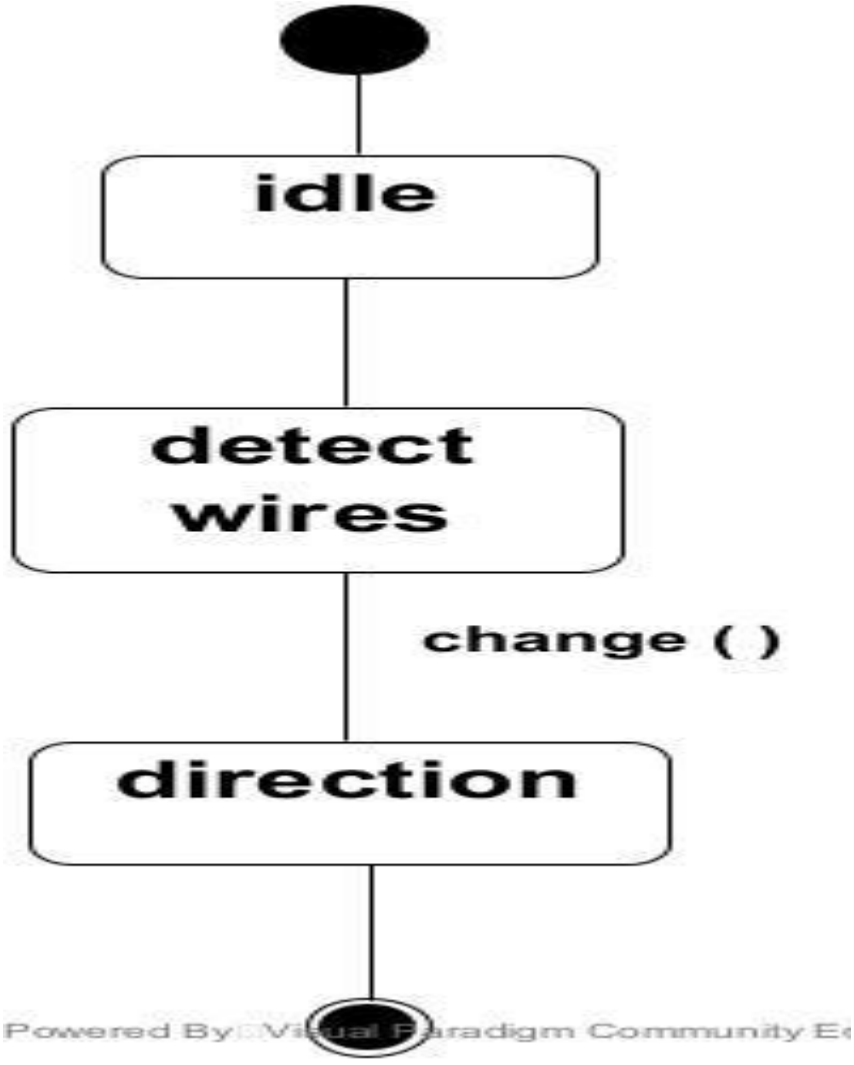
State diagram 11:



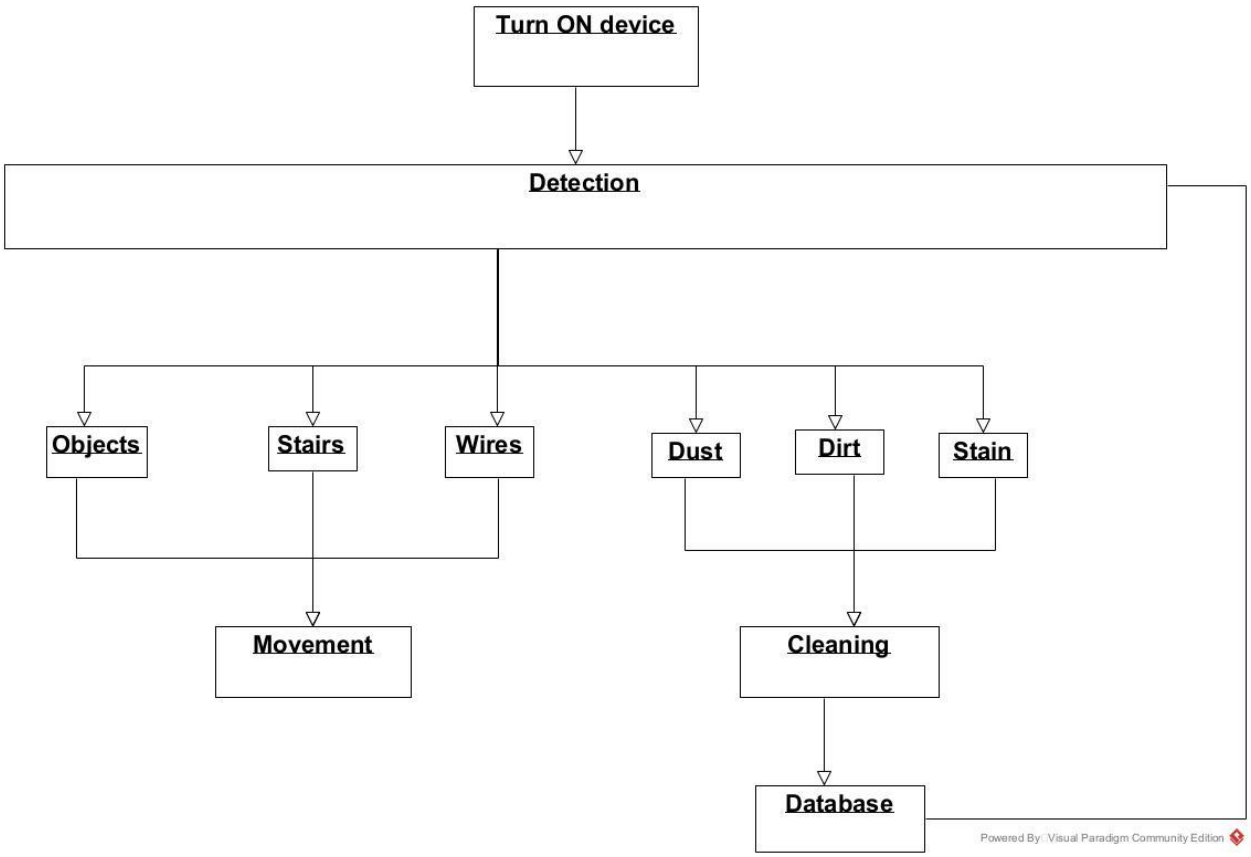
State diagram 12:

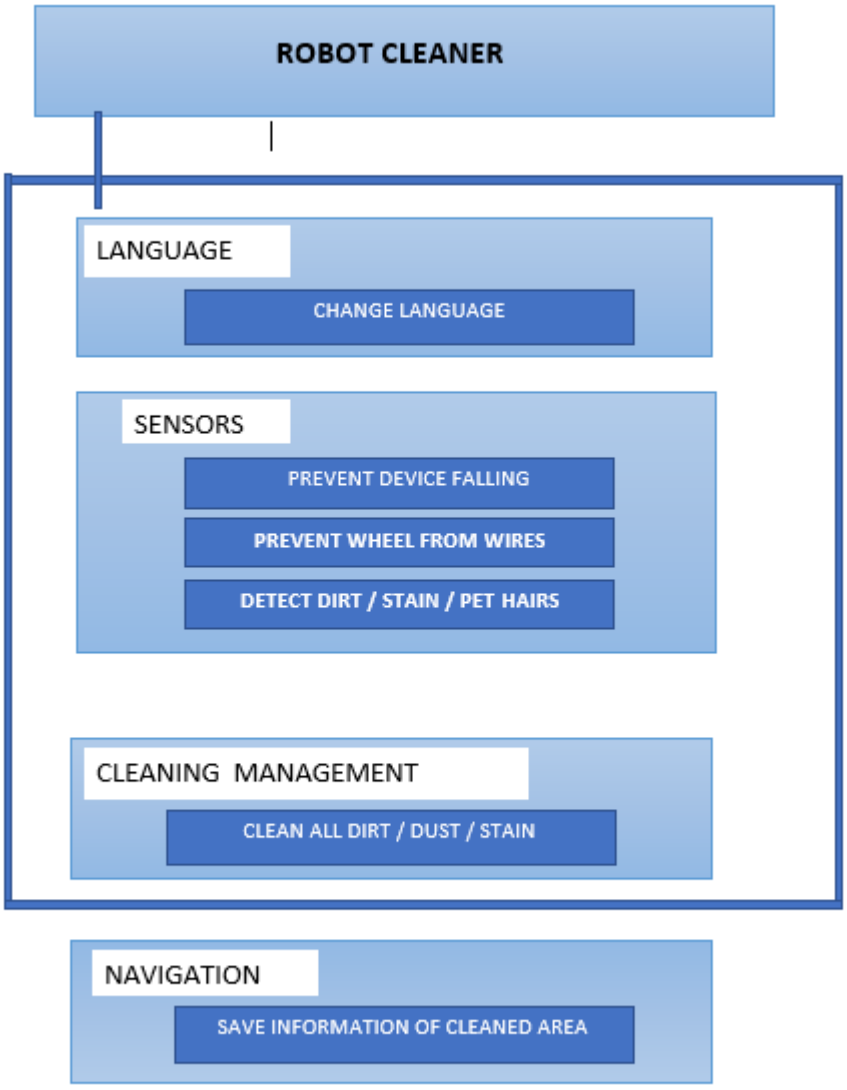


State diagram 13:



Architecture design:




ROBOT CLEANER
LANGUAGE
CHANGE LANGUAGE
SENSORS
PREVENT DEVICE FALLING
PREVENT WHEEL FROM WIRES
DETECT DIRT / STAIN / PET HAIRS
CLEANING MANAGEMENT
CLEAN ALL DIRT / DUST / STAIN
NAVIGATION
SAVE INFORMATION OF CLEANED AREA

Test case 01

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: Device Turn On	**Test ID:** T-ID-1
Objective: turn on the device	**Test Type:** Unit testing
Version: 01	
Input: user press on start button	
Expected result: System Turn ON	
Actual result: Passed	

Test case 02

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: Set language	**Test ID:** T-ID-2
Objective: user can set language for device	**Test Type:** Unit testing
Version: 01	
Input: user press on language button	
Expected result: language set for device	
Actual result: Passed	

Test case 3

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: Manage Directions	**Test ID:** T-ID-3
Objective: Device change direction if there is any obstacle.	**Test Type:** Unit testing
Version: 01	
Input: Put any object in front of device	
Expected result: Device change its direction	
Actual result: Passed	

Test case 04

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: Prevent falling	**Test ID:** T-ID-4
Objective: Device detect stairs and change its direction	**Test Type:** Unit testing
Version: 01	
Input: put device near the stairs	
Expected result: Device does not fall from stairs	
Actual result: Passed	

Test case 05

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: prevent wheel stucking	**Test ID:** T-ID-5
Objective: Device save wheel from Stucking	**Test Type:** Unit testing
Version: 01	
Input: placed some hairs , dirt , debris around wheels of device	
Expected result: wheels work properly	
Actual result: Passed	

Test case 06

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: Prevent wires twining	**Test ID:** T-ID-6
Objective: Device detect wires and make sure don’t stuck in wires	**Test Type:** Unit testing
Version: 01	
Input: spread wires around the device	
Expected result: Device don’t stuck in wires	
Actual result: Passed	

Test case 07

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: sensor	**Test ID:** T-ID-8
Objective: Device detect dirt	**Test Type:** Unit testing
Version: 01	
Input: put some dirt at different areas	
Expected result: Device detect stairs successfully	
Actual result: Passed	

Test case 08

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: sensor	**Test ID:** T-ID-9
Objective: Device detect hair	**Test Type:** Unit testing
Version: 01	
Input: put hair at different areas	
Expected result: Device detect hair successfully	
Actual result: Passed	

Test case 09

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: cleaning	**Test ID:** T-ID-10
Objective: remove dirt	**Test Type:** Unit testing
Version: 01	
Input: put some dirt at different areas	
Expected result: remove dirt successfully	
Actual result: Passed	

Test case 10

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: water tank	**Test ID:** T-ID-11
Objective: dispense liquid	**Test Type:** Unit testing
Version: 01	
Input: fill the water tank	
Expected result: dispense liquid on micro-fiber cloth	
Actual result: Passed	

Test case 11

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: cleaning	**Test ID:** T-ID-12
Objective: remove stain	**Test Type:** Unit testing
Version: 01	
Input: put device near the stain	
Expected result: remove the stain successfully	
Actual result: Passed	

Test case 12

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: cleaning	**Test ID:** T-ID-13
Objective: remove hair	**Test Type:** Unit testing
Version: 01	
Input: put some hair at different areas	
Expected result: grab all hairs successfully	
Actual result: Passed	

Test case 13

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: filtered dust	**Test ID:** T-ID-14
Objective: filtered dust / allergens from the air	**Test Type:** Unit testing
Version: 01	
Input: put device in dusty environment	
Expected result: device remove all dust / allergens from air	
Actual result: Passed	

Test case 14

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: check dustbin level	**Test ID:** T-ID-15
Objective: alert user when dustbin is full	**Test Type:** Unit testing
Version: 01	
Input: dustbin is empty and put dirt / garbage so that device clean entire area and store it in dustbin	
Expected result: alert user when dustbin is full	
Actual result: Passed	

Test case 15

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: navigation	**Test ID:** T-ID-16
Objective: save history of cleaned places	**Test Type:** Unit testing
Version: 01	
Input: put dirt / garbage at different locations	
Expected result: Device store history of cleaned places and cleaned new place after save information of last cleaned area	
Actual result: Passed	

Test case 16

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: manage battery	**Test ID:** T-ID-17
Objective: alert user when battery is low	**Test Type:** Unit testing
Version: 01	
Input: turn on device	
Expected result: alert user when battery is low	
Actual result: Passed	

Test case 17

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: sleep mode	**Test ID:** T-ID-18
Objective: turn on sleep mode	**Test Type:** Unit testing
Version: 01	
Input: user press on sleep button	
Expected result: device sleeps	
Actual result: Passed	

Test case 18

Date: 2 July 2022	**Test case designed by:** Rimsha Ali
System: Device Turn Off	**Test ID:** T-ID-1
Objective: turn off the device	**Test Type:** Unit testing
Version: 01	
Input: user press on stop button	
Expected result: System Turn Off	
Actual result: Passed	

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