

EcoSave Community Recycling System

EcoSave is an organization that aims to contribute towards efforts to combat climate change. One of the problems in communities is difficulty finding recycling centers to submit materials. EcoSave aims to overcome this by encouraging community members to become collectors for recyclable materials. Collectors will receive points for collecting materials, and recyclers will also receive points for submitting materials. The EcoSave admin will set up which kinds of materials can be collected, such as paper, plastic, cooking oil or even old computers, and how much each type of material will be worth, in points. The points can be redeemed for prizes later

Recyclers will receive points but also be recognized for the amount of materials that they Submit. If they receive 100 points they will be upgraded to “Eco Saver” level, for 500 points “Eco Hero” and 1000 points “Eco Warrior”.

The use case diagram is shown in Fig. 1.

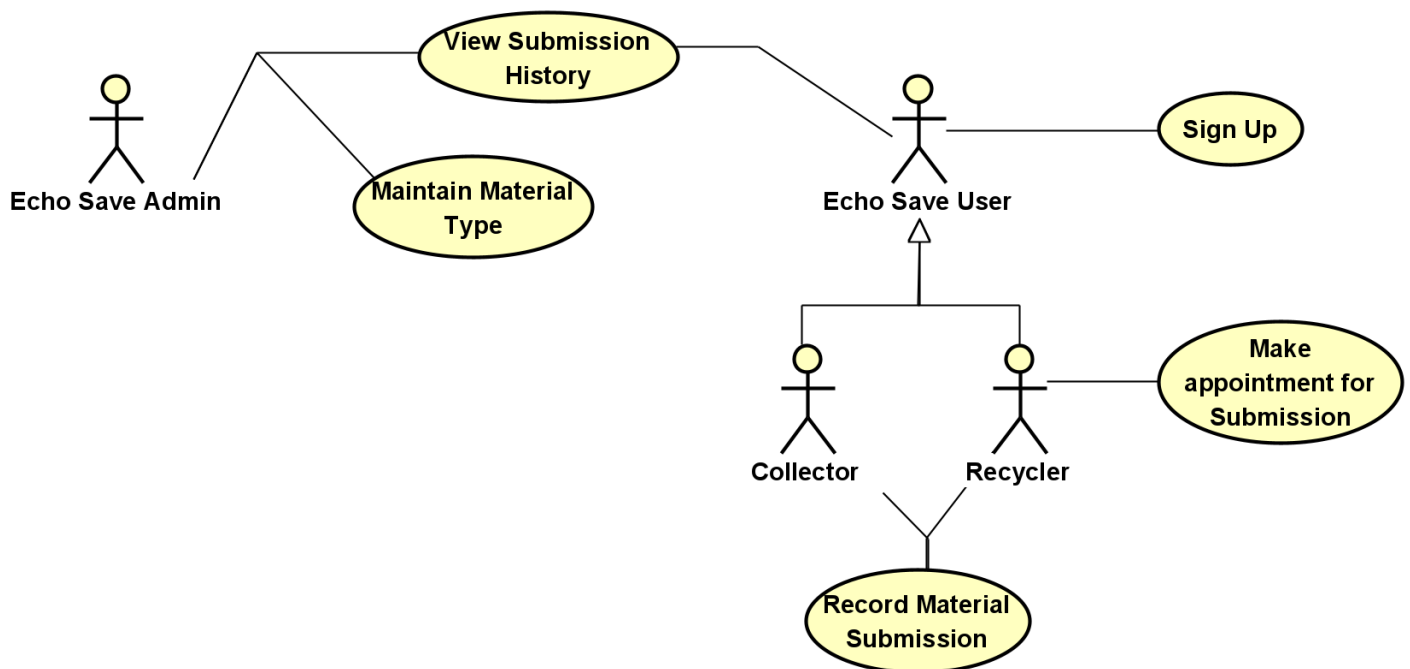


Figure 1: EcoSave Use Case Diagram

The domain class diagram (Figure 2) shows the main information requirements for the system.

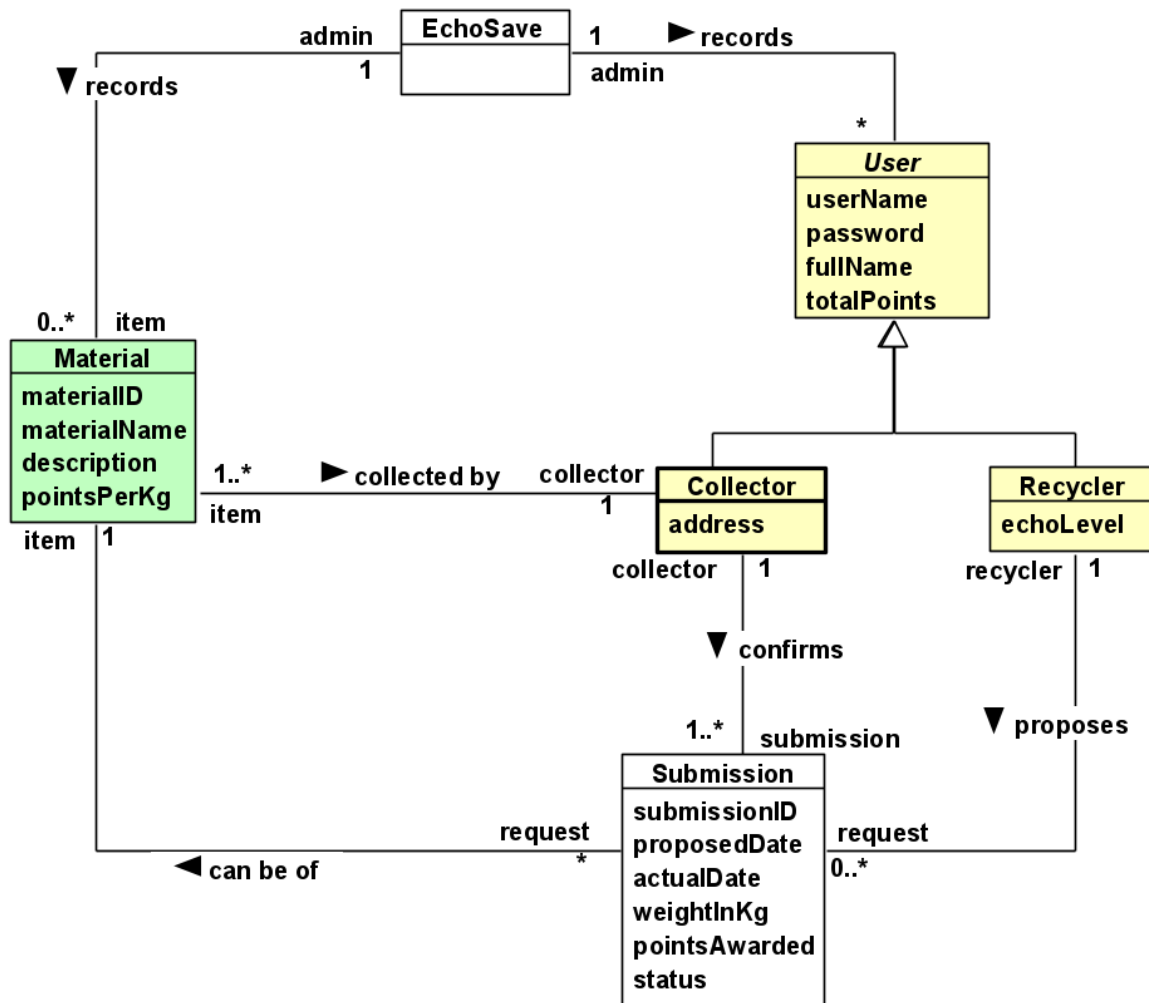


Figure 2: EcoSave Class Diagram

The Conceptual Model shown above depicts the relationship that exists between classes. The User class is an **abstract** class, and is the superclass to the two concrete subclasses – Recycler and Collector.

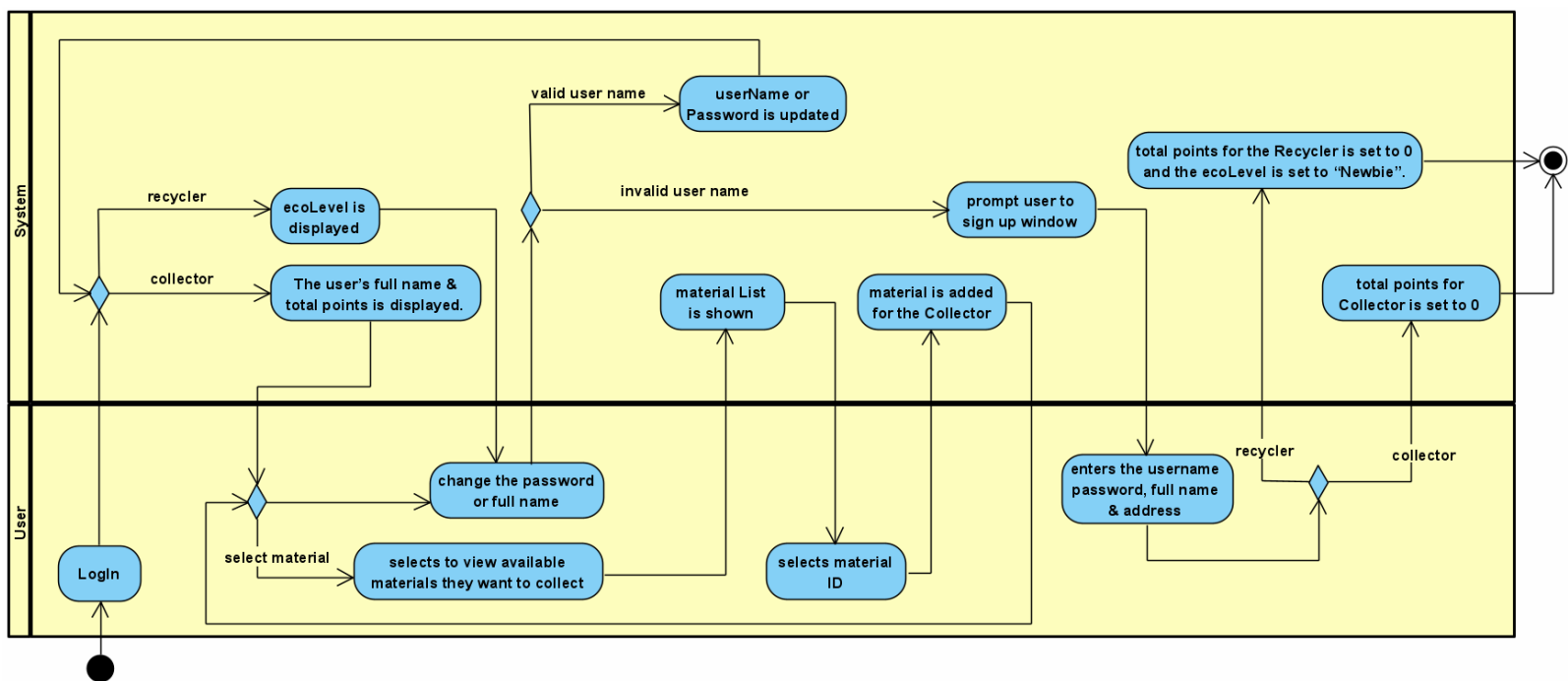
An EcoSave object references a collection of Users and a collection of Materials. These two collections are separate. You will also notice that Materials are linked to the Submission class. Submission class can be created by both Recycler and Collector classes, and modified by Collector class.

The following shows the high level use cases for the functionalities stated above.

Use Case Name	Maintain Material Type	
Goal in Context	To allow the EcoSave Admin to manage material types that can be collected.	
Primary Actor	EcoSave Admin	
Trigger	An EcoSave Admin wants to add or change a material type.	
Typical Course of Events Actor Action		System Response

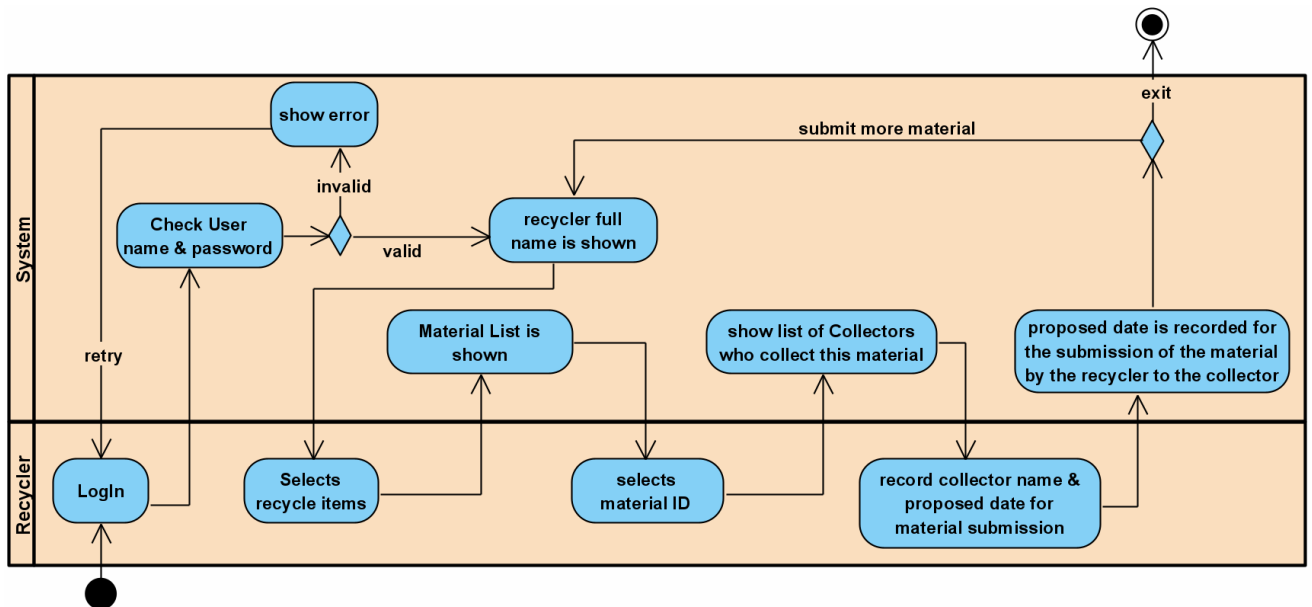
1. This use case begins when an EcoSave Admin logs in with the admin username and password and wants to add or change a material type.	A list of materials showing materialID, material names, description and points per Kg is shown.
2. The EcoSave Admin enters the materialID to change information.	The material name, description and pointsPerKg is shown.
3. The EcoSave Admin enters the new material name, description or pointsPerKg.	The material information is updated.
Alternative Course of Events	
Line 2a. If the EcoSave Admin would like to add a new material type, the new material name, description and pointsPerKg is entered. A new materialID is generated.	
Line 2b. If the EcoSave Admin would like to delete the material type, the material ID is entered to select the material type to delete.	
Line 3b: If the EcoSave Admin would like to manage another material, repeat lines 2 – 3.	

Use Case Name	Manage User Profile	
Goal in Context	To allow a user to sign up or login as a Recycler or Collector	
Primary Actor	EcoSave User	
Trigger	An EcoSave user wants to sign up as a Recycler or Collector	
Typical Course of Events Actor Action		System Response
1. This use case begins when an EcoSave User wants to maintain a user profile with EcoSave.		
2. The EcoSave user logs in with the username and password.		The user's full name and total points is displayed.
3. The EcoSave user may choose to change the password or full name.		
4. The Collector selects to view available materials they want to collect.		A list of materials showing materialID, material names, description and points per Kg is shown.
5. The Collector selects the materialID of the material that they would like to collect.		The material is added for the Collector.
Alternative Course of Events		
2a. If the EcoSave User is a Recycler, the ecoLevel is displayed.		
3a. If the username does not exist, the EcoSave User signs up as a Collector by entering username, password, full name and address. The total points for Collector is set to 0.		
3b. If the EcoSave User wants to sign up as a Recycler, the EcoSave User enters the username password, full name and address. The total points for the Recycler is set to 0 and the ecoLevel is set to "Newbie". Skip Lines 4 and 5.		
5a: If the Collector would like to add additional materials, repeat lines 3 and 4.		



Manage User Profile Activity Diagram

Use Case Name	Make Appointment for Submission	
Goal in Context	To allow a Recycler to find Collectors and propose a Submission Date	
Primary Actor	Recycler	
Trigger	A Recycler has materials to submit to Collectors	
Typical Course of Events Actor Action		System Response
1. This use case begins when a Recycler has materials to recycle.		
2. The Recycler logs in with a username and password		The Recycler's full name is shown.
3. The Recycler selects to recycle items.		A list of materials showing materialID, material names, description and points per Kg is shown.
4. The Recycler selects the materialID of the material that they would like to recycle.		A list of collectors who collect the material is shown.
5. The Recycler records the collector's username and proposed date for submission of material.		The proposed date is recorded for the submission of the material by the recycler to the collector. The status of the submission is set to "Proposed". The SubmissionID is automatically generated.
Alternative Course of Events		
2a. If the Recycler does not have a valid username and password, indicate error and allow to retry to sign up.		
5a. If the Recycler would like to propose more materials, repeat line 5.		

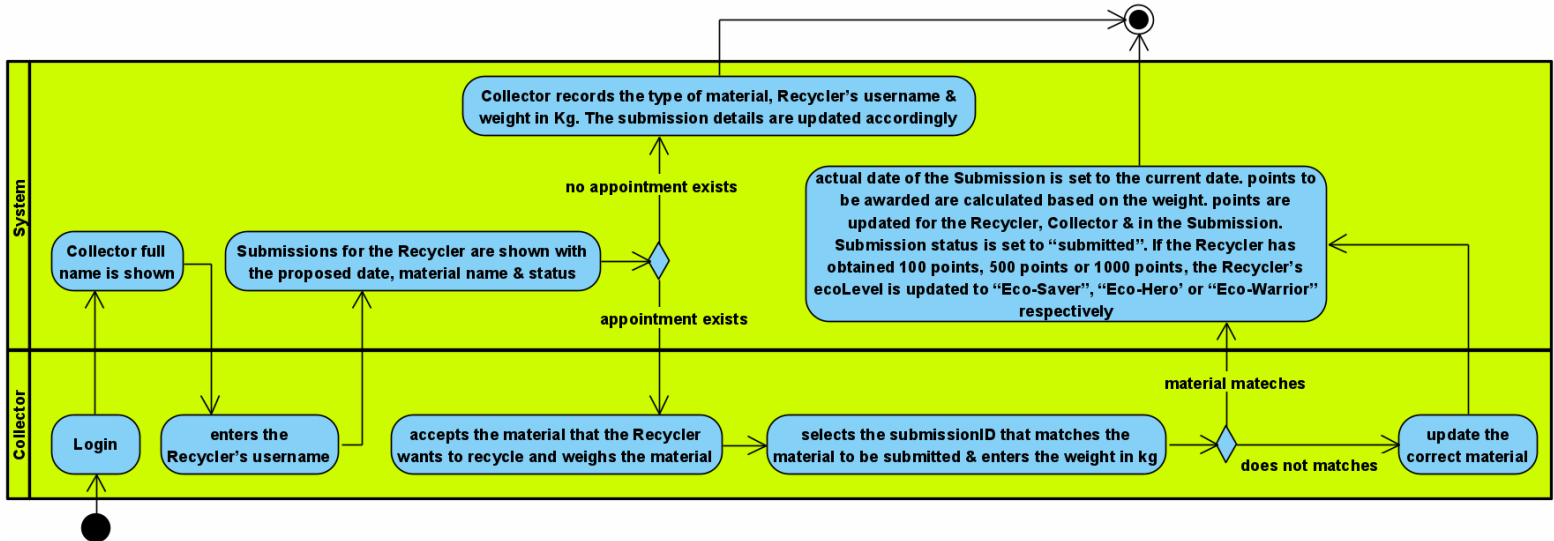


Make Appointment for Submission Activity Diagram

Use Case Name	Record Material Submission.	
Goal in Context	To allow Collector to record that some material have been submitted for recycling.	
Actors	Collector, Recycler	
Trigger	A Recycler arrives with materials to submit.	
Typical Course of Events Actor Action		System Response
1. This use case begins when a Recycler has brought materials to submit to the Collector.		
2. The Collector logs in with a username and password		The Collector's full name is shown.
3. The Collector enters the Recycler's username		Submissions for the Recycler are shown with the proposed date, material name and status.
4. The Collector accepts the material that the Recycler wants to recycle and weighs the material.		
5. The Collector selects the submissionID that matches the material to be submitted and enters the weight in kg.		The actual date of the Submission is set to the current date. The points to be awarded are calculated based on the weight. The points are updated for the Recycler, Collector and in the Submission. The Submission status is set to "submitted". If the Recycler has obtained 100 points, 500 points or 1000 points, the Recycler's ecoLevel is updated to "Eco-Saver", "Eco-Hero" or "Eco-Warrior" respectively.
Alternative Course of Events		
3a. If the Recycler did not make an appointment for submission, skip to line 5b.		
5a. If the material to be submitted does not match the Recycler's proposed submission, the Collector updates the		

correct material.

5b. If the submission is without a prior appointment, the Collector records the type of material, Recycler's username and weight in Kg. The submission details are updated accordingly.

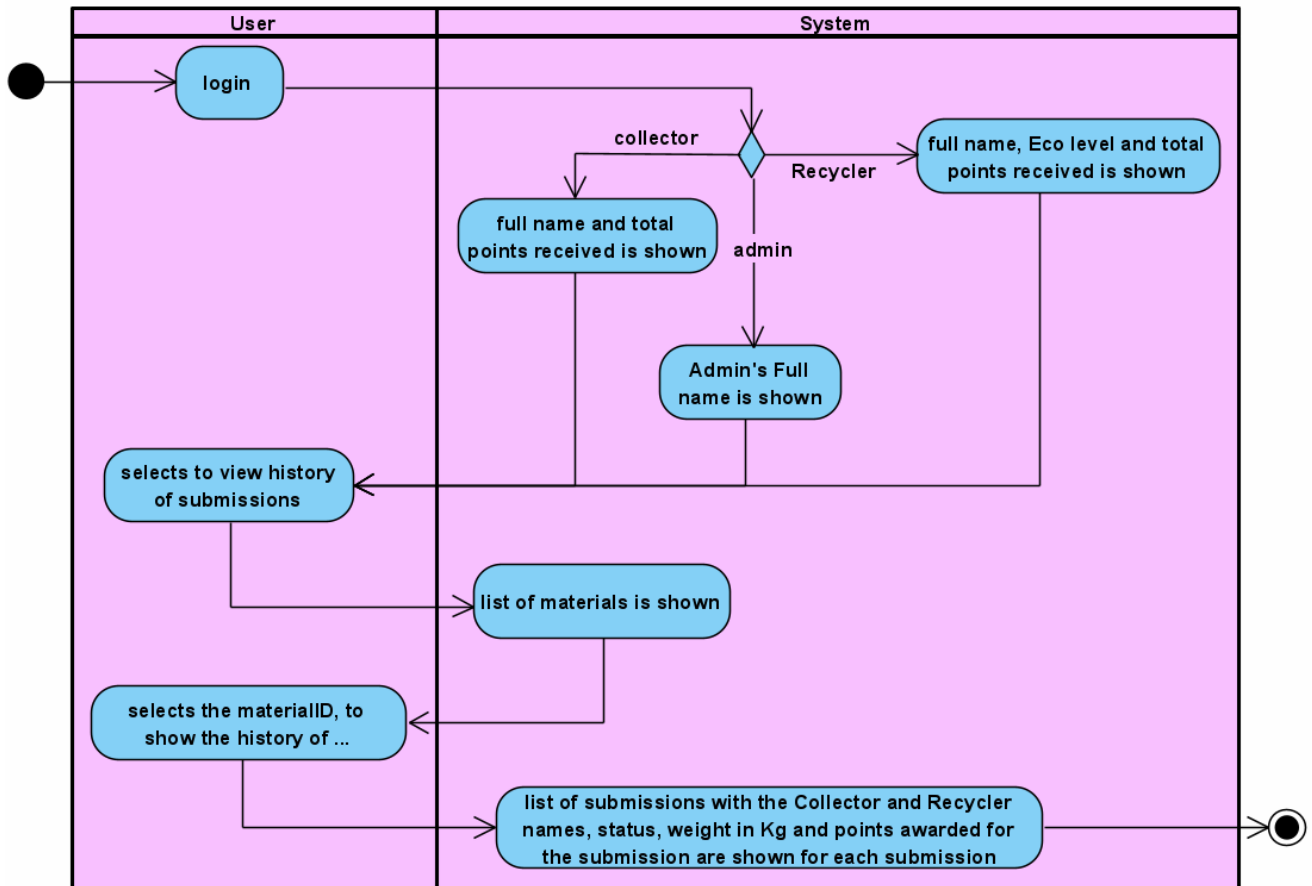


Record Material Submission Activity Diagram

Use Case Name	View Submission History	
Goal in Context	To view submissions that have been made	
Primary Actor	EcoSave Admin	
Secondary Actor	EcoSave User	
Trigger	The EcoSave Admin or EcoSave User wants to view history	
Typical Course of Events Actor Action		System Response
1. This use case begins when a EcoSave Admin or User wants to view history		
2. The EcoSave Admin logs in with a username and password		The Admin's full name is shown.
3. The user selects to view history of submissions.		A list of materials showing materialID, material names, description and points per Kg is shown.
4. The user selects the materialID, to show the history of Submissions.		A list of submissions with the Collector and Recycler names, status, weight in Kg and points awarded for the submission are shown for each submission. The total weight and total points for the material is also shown.
Alternative Course of Events		
2a. If the EcoSave user is a Recycler, the full name, Eco level and total points received is shown.		

2b. If the EcoSave user is a Collector, the full name and total points received is shown.

4a. The user may want to filter the results by actual date of submission or status of submission.



Record Material Submission Activity Diagram