COEN 160/275

OO Analysis, Design and Programming Winter2014

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Eco Recycle System

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GROUP: **SECTION: WF**

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Use-Case: (Goal): ***Recycle Item in recycle machine.***

Actors: *User (person recycling)*

Purpose and Description: *user recycle item(s) and get the cash/coupon from the recycle machine.*

Type: *Primary, Real*

Cross-references: *Recycle Item in recycle machine with session*

Scenario Details (Typical course of events): *if the user has only many items to recycle he can choose 'multi item recycle' here user session will be stored. User selects the type of payment, receipt or no receipt and loads the item in the machine on by one. After the last load machine will dispense cash/coupons to the user. If user has single item he will select quick recycle and get the cash amount no session is stored*

Actor Action	System Response
1. User on home screen	2. Select 'Quick recycle' or 'multi item recycle' button.
3. User selects 'multi item recycle'	4. Display option 'cash 'or 'coupon' button, (Items accepted, back, continue or checkout button are fixed at the bottom of all screen) and also save the user session and all the data till the end of transaction.
3. User selects 'cash 'and continue.	4. Display message, "Do you want receipt?" with 'yes' or 'no' button (also Items accepted, back, continue or checkout button).
5. User selects 'yes' and continue	5. Display, "Machine ready for recycle, please load the bin."
6. User loads the item (acceptable)	7. Sensor at the opening detects the type of item loaded and if the item is acceptable then it will display the list of item (loaded) details (type, weight, price per lbs., amount own to user. Prints "Machine ready for next load, please load the bin".
8. User loads item (not acceptable)	9. Sensor at the opening detected the type of item loaded and if item is not acceptable machine prompt error message to the user "Item not acceptable by machine", list the number of items accepted, return item to the user and display "Machine ready for next load, please load the bin".

9. User selects checkout.	10. Dispense cash/coupon (as selected by user) and print the receipt (if selected by user) and display message “Thank you for recycling” and return to home screen.(destroy the session)

Alternative Courses:

Line 3: User selects ‘quick recycle’ it just recycles one item and will return to home screen. No session is stored.

Line 4: Machine out of cash the display ‘out of cash’ and coupon is selected by default and user can continue or exit.

Line 5: User selects ‘coupon’ machine will dispense coupons at the end of transaction.

Line 5: User selects ‘both’ machine will ask for the percentage of cash to the user. Machine will dispense coupons and cash in specified percentage at the end of transaction.

Use-Case: (Goal): ***Emptying the recycle machine.***

Actors: *service person, administrator at RMOS (Recycle monitoring station).*

Purpose and Description: After Many usage the recycling machine is full and thus is out of use. Service is provided and the machine is activated again.

Type: *secondary, essential*

Cross-references:

Scenario Details (Typical course of events):

Actor Action	System Response
1. User recycles item	2. Machine is full so will deactivate and will send service notification to RMOS
3. Service man will collect the items And empty the machine. Refill cash, coupon paper and ink.	4. Machine updates status 'ready for activation'.
5. Administrator will activate the machine	6. Machine will be ready for recycling

Use-Case: (Goal): **Monitors and checks the statistics**

Actors: Admin

Type: Primary, Essential

Description: Admin can analyze based on the statistics.

Cross-references:

Scenario Details (Typical course of events)

Actor Action	System Response
1. *Admin logs in with a username and password*	*2. Options like Add RCM, Statistics, List of RCMs with machine id ,location, status icon and last removal date appear on the screen.*
3.Selects the statistics.	*4.The statistics like total weight recycled by machine/unit of time, total value issued in cash or coupons for all the RCMs on the whole and individually are displayed.*

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Use-Case: (Goal): **Monitor and Change the status of the machine.**

Actors: Admin

Type: Primary, Essential

Description: Admin can active or de active the machine.

Cross-references:

Scenario Details (Typical course of events)

Actor Action	System Response
1. *Admin logs in with a username and password*	*2. Options like Add RCM, Statistics, List of RCMs with machine id ,location and last removal date appear on the screen.*
3. Click on the status icon following the machine id	4.Pop-up will appear which will provide the option to activate or de activate the machine.

Use-Case: (Goal): **Monitor and make changes to the RCM**

Actors: Admin

Type: Primary, Essential

Description: Admin monitors all the Recycle Machines from the Recycle Monitoring Station

Cross-references:

Scenario Details (Typical course of events)

Actor Action	System Response
1. *Admin logs in with a username and password*	*2. Options like Add RCM, Statistics, List of RCMs with machine id ,location and last removal date appear on the screen.*
3. Click on any RCM id recyclable	4. Details like Operational Status, list of items with prices, Amount left, Current capacity and available capacity ,last time emptied appear with a edit option.
5.Admin chooses to Edit RCM.	6. Admin can edit by changing the list of recyclable items and item prices or remove
7. Makes the required changes and chooses SAVE option.	8. The changes are saved and displayed.

Alternative Courses:

Line 7: In case CANCEL is chosen, all the changes are undone.

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Use-Case: (Goal): **Add or Remove machine from the Recycle Monitoring Station**

Actors: Admin

Type: Primary, Essential

Description: Admin can add a new machine or remove the current machine from the Recycle Monitoring Station

Cross-references:

Scenario Details (Typical course of events)

Actor Action	System Response
1. *Admin logs in with a username and password*	*2. Options like Add RCM, Remove RCM, Statistics, with machine id ,location ,status,last removal date and Remove icon appear on the screen.*
3.Admin clicks on Add RCM .	4. System asks the admin for all the required details.
5. Add the required details and chooses SAVE option.	6. The changes are saved and displayed.
7. Admin clicks on the Remove RCM	*8. The list of RCMs currently in the RMOS appear with an option to select multiple RCMs.*
9.Admin selects all the RCMs to removed and submits	*10.Selected RCMs are removed and changes are updated.*

CRC Cards

Class name:	**Money**
SuperClasses:	
SubClasses	
Responsibility	**Collaborator**
Sets/gets the amount and currency units	
Converts currency units (dollars, euros, rupees)	

Class name:	**Weight**
SuperClasses:	
SubClasses	
Responsibility	**Collaborator**
Sets/gets the weight and weight units (default pound)	
Converts weight into different units (pound, kg, grams)	

Class name:	**volume**
SuperClasses:	
SubClasses:	
Responsibility	**Collaborator**
Sets/gets the volume and volume units (default cubic meter)	
Converts volume into different units (cubic meter, cubic inches, cubic ton, cubic foot)	

Class name:	**item**
SuperClasses:	
SubClasses:	
Responsibility	**Collaborator**
Gives type of item, item id	
Gives rate (price/weight)	

Money, Weight

Class name:	**Communication**
SuperClasses:	
SubClasses	
Responsibility	**Collaborator**
Create/closes connection to the remote server	
Send message	

Class name:	**session**
SuperClasses:	
SubClasses	
Responsibility	**Collaborator**
Create and destroy session	
Store user session data	

Interface name:	**service**
SuperClasses:	
SubClasses: recycleCenter	
Responsibility	**Collaborator**
Empty recycle machine notification toRMOS	
Other maintenance notification to RMOS (out of paper, ink, cash or some software or hardware problem).	

Class name:	**xmlReader**
SuperClasses:	
SubClasses	
Responsibility	**Collaborator**
Read xml file node by node (node reader)	
Read xml text (text reader)	

Class name:	**xmlWriter**
SuperClasses:	
SubClasses	
Responsibility	**Collaborator**
Write xml document	

Class name**:** RecycleCenter	
SuperClasses: RecycleMachine,Service	
SubClasses:	
Responsibility	**Collaborator**
Used to maintain session, Recycle, display details of recycle items and display current cart	Session, Item, Money, Weight, Xml Writer
Choose the payment type(Cash/Coupon) and produce cash	Money

Class name**: RecycleMachine**	
SuperClasses:	
SubClasses :RecycleCenter	
Responsibility	**Collaborator**
Has the properties like id, status, location, list of recyclable items and their prices and maintains the list of items recycled.	Item, Money, xmlReader
Gives the total weight and volume recycled, last time emptied and produce cash	Weight, volume, Money

Class name**:** RecycleMonitoringStation	
SuperClasses:	
SubClasses	
Responsibility	**Collaborator**
Used to add, remove or activate machine.	RecycleMachine, xmlReader, xmlWriter, Session