

Homework III

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GW4975

EE 382C Requirements Engineering

11/06/2015

Installation Requirements

- 2 GHz processors
The administrators expect faster computers.
- 2 GB memory
The administrators expect more computational capability.
- support for gigabit networks The administrators expect faster and more robust network communication.

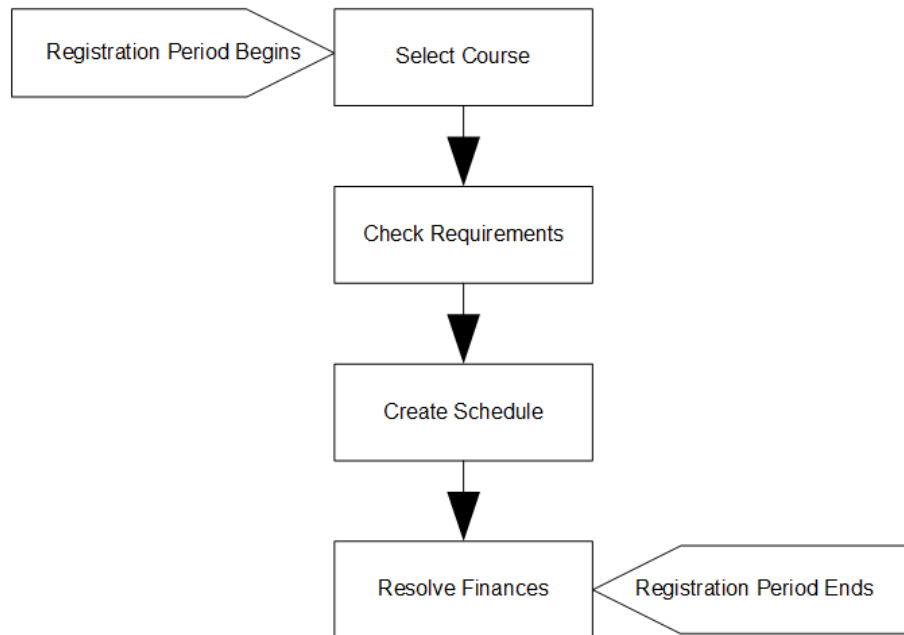
The hardware requirements change as better hardware becomes cheaper; better performance in systems is a constant want, if not need. Most local installations can expect the requirements for new hardware to increase with time.

Non-Functional Requirements

- "users expect no more than 2 seconds per transaction for all requests"
This applies to the system's runtime performance. It may be evaluated by executing system functionality and measuring system responsiveness.
- "Federal regulations require payment data to be encrypted when transmitted or stored"
This applies to the system's communication and data storage. It may be evaluated by grabbing dumps of databases or intercepting (sniffing) network communications of the system and ensuring the content is encrypted.
- "intention to extend the system with many additional services in the future" This applies to the system's architecture; an extensible framework must underpin the entire system so that it may be extended at a later date. This could be evaluated by having core pieces of the system implemented as modular plugins to some bare framework, bringing extensibility and demonstrative architecture to the system from the very beginning. If "registration" is a plugin, then it can be shown that additional functionality can be added later.

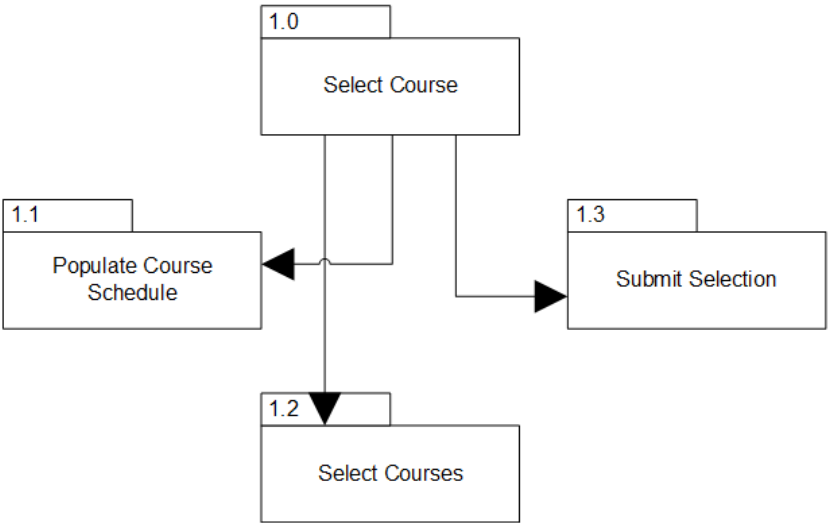
Operational Reference Model

RM Number	Admin_OR_001
RA Source	Admin_Overview_001
RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
Date Revised	
Date Revised	
Date Stakeholder Approval	
RM Reference	Admin_TD_001
RM Reference	
RM Reference	



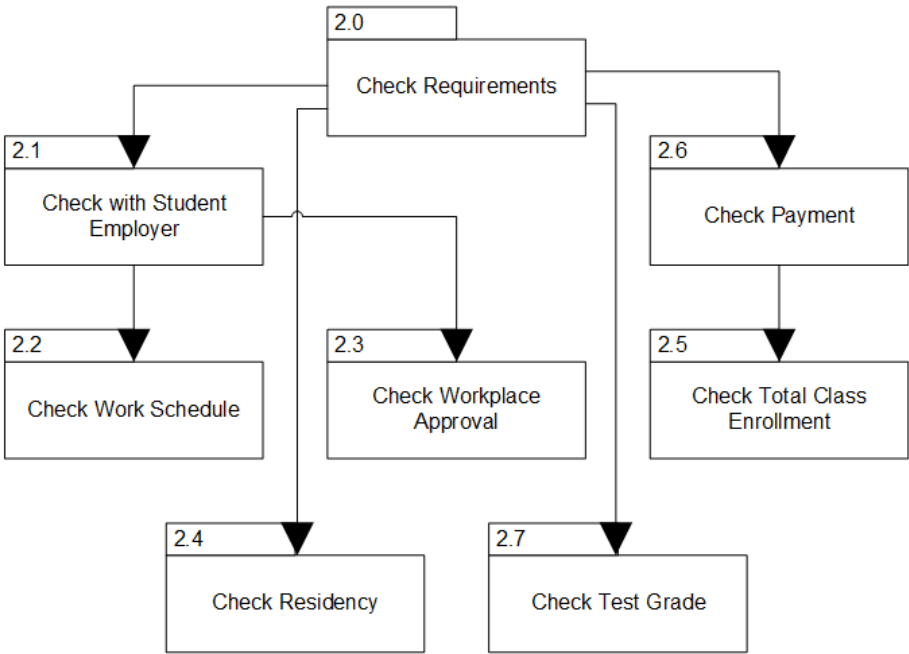
Task Decomposition

RM Number	Admin_TD_001
RA Source	Admin_Overview_001
RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
Date Revised	
Date Revised	
Date Stakeholder Approval	
RM Reference	
RM Reference	
RM Reference	



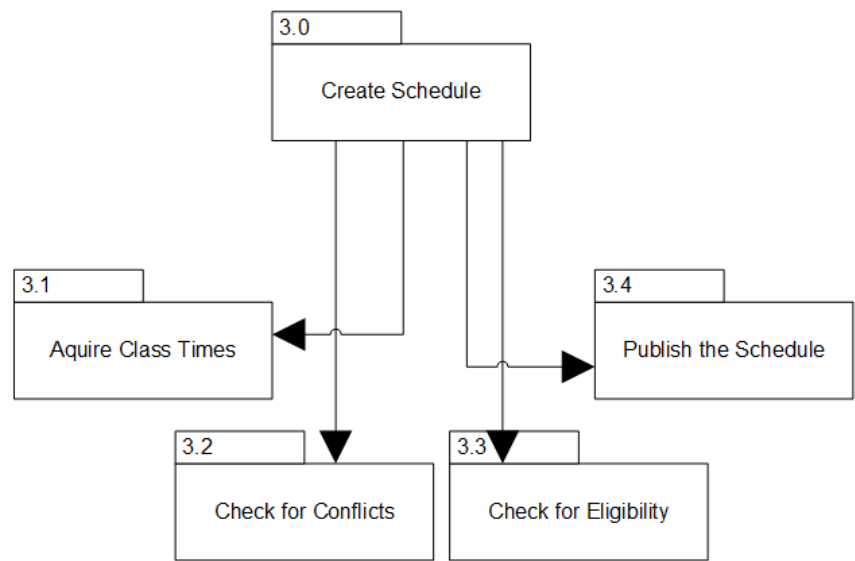
Task Decomposition

RM Number	Admin_TD_002
RA Source	Admin_Overview_001
RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
Date Revised	
Date Revised	
Date Stakeholder Approval	
RM Reference	Admin_TT_001
RM Reference	
RM Reference	



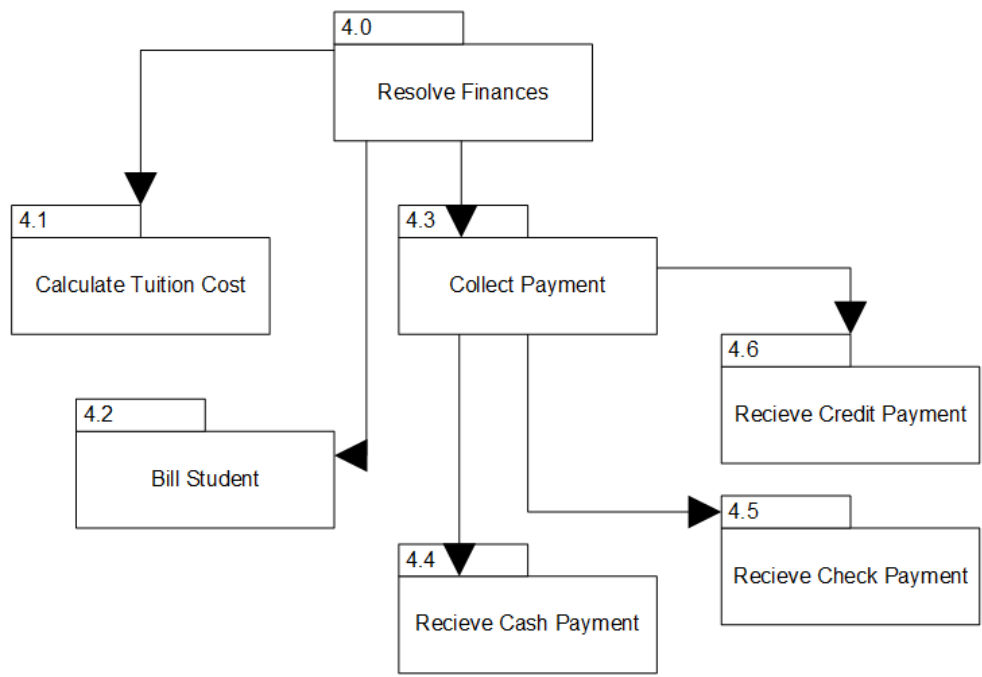
Task Decomposition

RM Number	Admin_TD_003
RA Source	Admin_Overview_001
RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
Date Revised	
Date Revised	
Date Stakeholder Approval	
RM Reference	
RM Reference	
RM Reference	



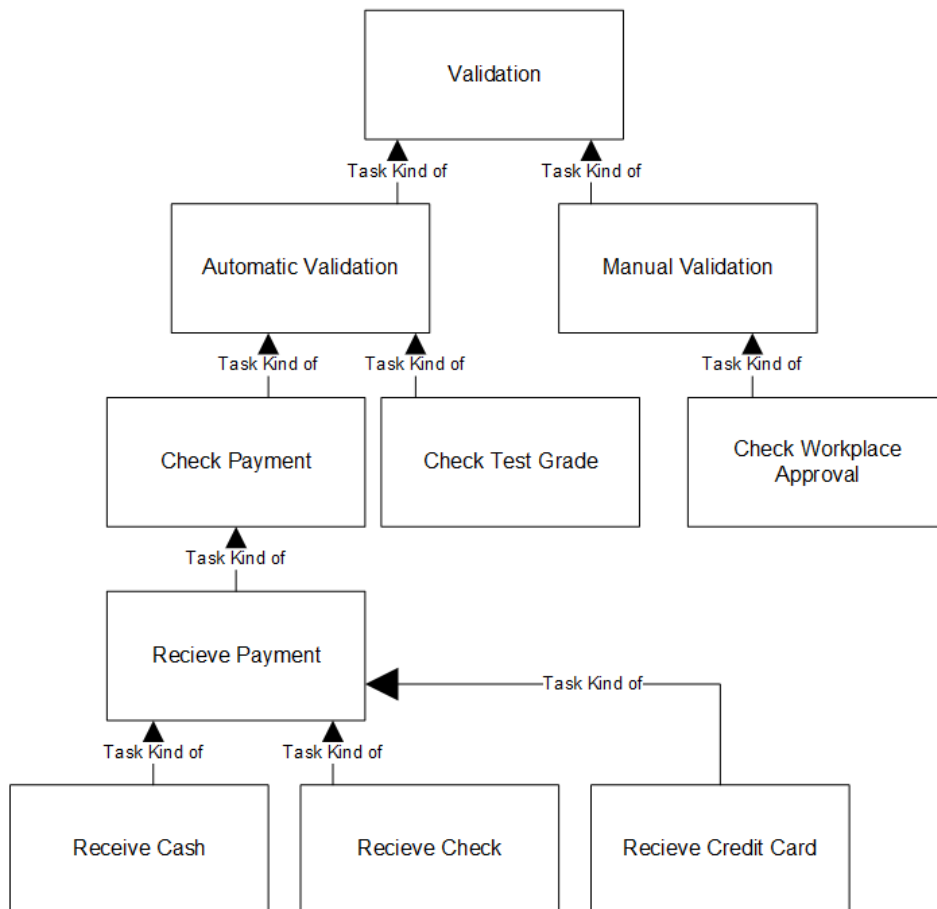
Task Decomposition

RM Number	Admin_TD_004
RA Source	Admin_Overview_001
RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
Date Revised	
Date Revised	
Date Stakeholder Approval	
RM Reference	Admin_TT_002
RM Reference	
RM Reference	



Task Hierarchy

RM Number	Admin_TH_001
RA Source	Admin_Overview_001
RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
Date Revised	
Date Revised	
Date Stakeholder Approval	
RM Reference	
RM Reference	
RM Reference	



Task Name: Check Residency Requirements

RM Number:	Admin_TT_001
RA/RM Source:	Admin_Overview_001
RE:	Gregory Williams
Perspective:	Admin
Date:	11/06/2015
Date Revised:	

Basic Task Information

<i>Decomposition Reference</i>	<i>Duration</i>	<i>Frequency</i>	<i>Location</i>
2.4	1 minute	Discrete	School Network

Performers

Registration System, Admin

Pre/Post Conditions

Pre Conditions

Input Data

<i>Input Data Name</i>	<i>Cardinality</i>	<i>Data Condition</i>	<i>Sending Performer</i>
Student Residency	One	AvailableAtTaskStart	
Response from Student Records			Student Records Database

Resource Constraints

<i>Resource Name</i>	<i>Resource Condition</i>
Student Record	AvailableAtTaskStart

Post Conditions

Output Data

<i>Output Data Name</i>	<i>Cardinality</i>	<i>Receiving Performer</i>
ResidencyStatus	one	
Check Requirements		Registration System

Output Event

<i>Output Event Name</i>	<i>Receiving Performer</i>
ResidencyEligibilityConfirmed	
Check Requirements	Registration System

Task Name: Bill Student

RM Number:	Admin_TT_002
RA/RM Source:	Admin_Overview_001
RE:	Gregory Williams
Perspective:	Admin
Date:	11/06/2015
Date Revised:	

Basic Task Information

<i>Decomposition Reference</i>	<i>Duration</i>	<i>Frequency</i>	<i>Location</i>
4.2	1 minute	Discrete	WWW

Performers

Registration System, Student

Pre/Post Conditions

Pre Conditions

Input Data

<i>Input Data Name</i>	<i>Cardinality</i>	<i>Data Condition</i>
<i>Sending Task</i>		<i>Sending Performer</i>
ClassSchedule	One	AvailableAtTaskStart
ClassSelection		Registration System
PricingTable	One	AvailableAtTaskStart
GetSemesterPricing		Registration System

Resource Constraints

<i>Resource Name</i>	<i>Resource Condition</i>
Student Record	AvailableAtTaskStart
Encryption	AvailableAtTaskStart

Post Conditions

Output Data

<i>Output Data Name</i>	<i>Cardinality</i>	<i>Receiving Performer</i>
<i>Receiving Task</i>		
SemesterCost	one	
PriceSemester		Registration System

Output Event

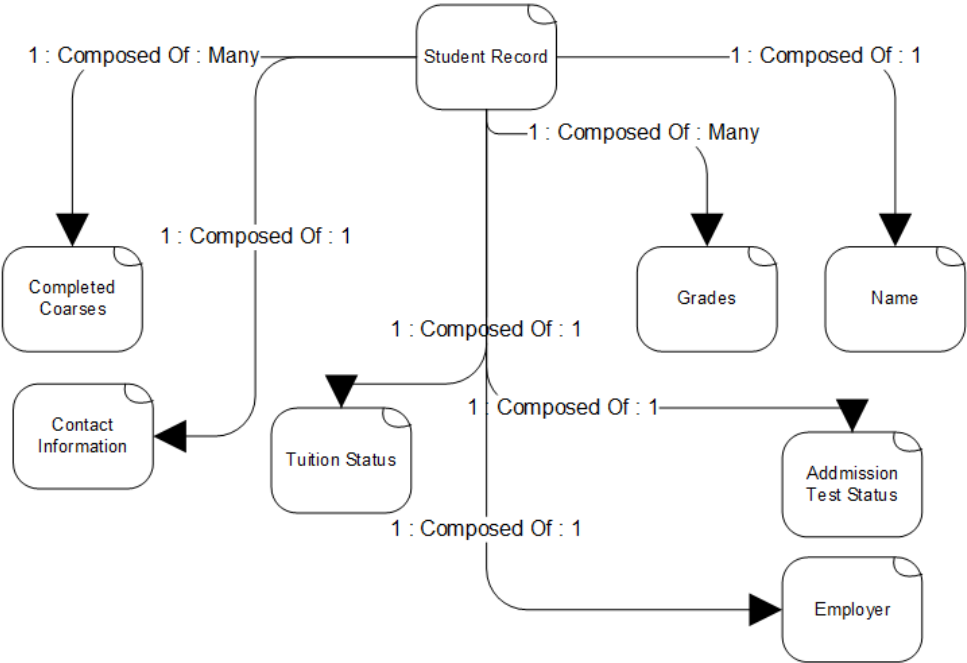
Output Event Name

Receiving Task
Student Billed
AlertStudent

Receiving Performer
Registration System

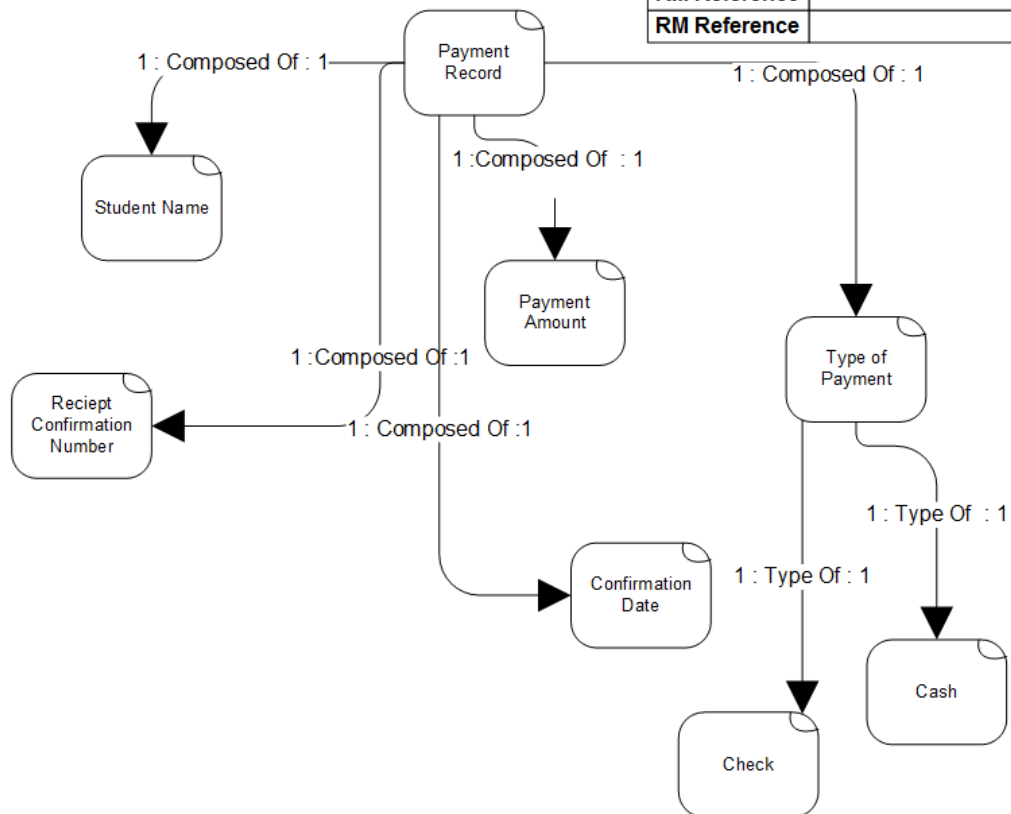
Entity Relationship Diagram

RM Number	Admin_ER_001
RA Source	Admin_Overview_001
RE	Gregory Williams
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RM Reference	



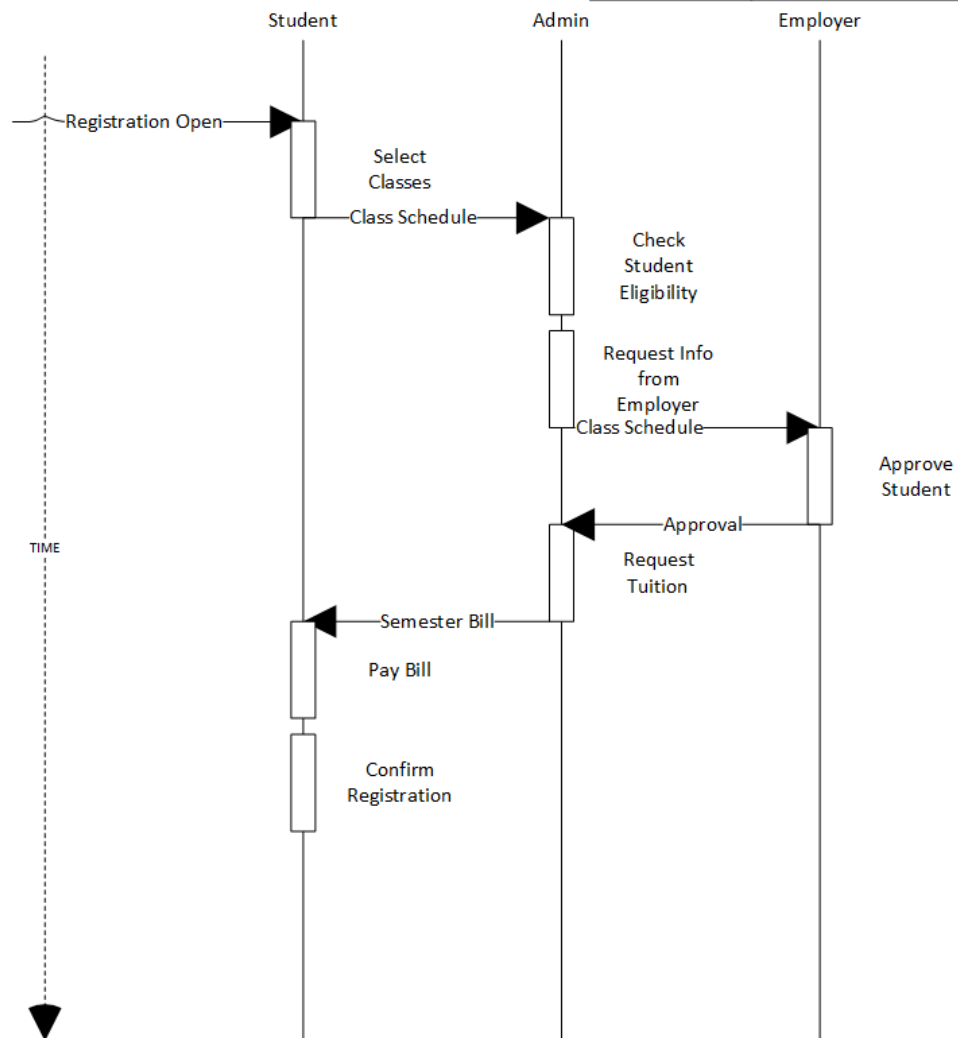
Entity Relationship Diagram

RM Number	Admin_ER_002
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RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
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RM Reference	
RM Reference	



Temporal Sequence Diagram

RM Number	Admin_TS_001
RA Source	Admin_Overview_001
RE	Gregory Williams
Perspective	Admin
Date	11/06/2015
Date Revised	
Date Revised	
Date Stakeholder Approval	
RM Reference	
RM Reference	
RM Reference	



Inconsistent Requirements

The type of payment received by the system must support cash, check, or credit card. But the financial record can only hold check or cash. This inconsistency will have to be resolved when the representations are synthesized.

Additional Acquirement Priorities

- **Admin_TD_003**

The Task Decomposition does not indicate any of the concrete requirements in how students and administrators will validate that the conflicts have indeed been resolved. I would want to follow up with the administration and with current students on their expectations for how the conflicts are communicated if they exists, and if there is any desired functionality or interaction expectations in both the no-conflict case and the conflict case.

- **Admin_TS_001**

The Temporal Sequence Diagram does not include any information about what administrators need to do if/when the income constraint prevents a class from being offered that students are currently registered for. We would need to acquire the timing and task that administrators would take in the case that a class is canceled.