Software Engineering

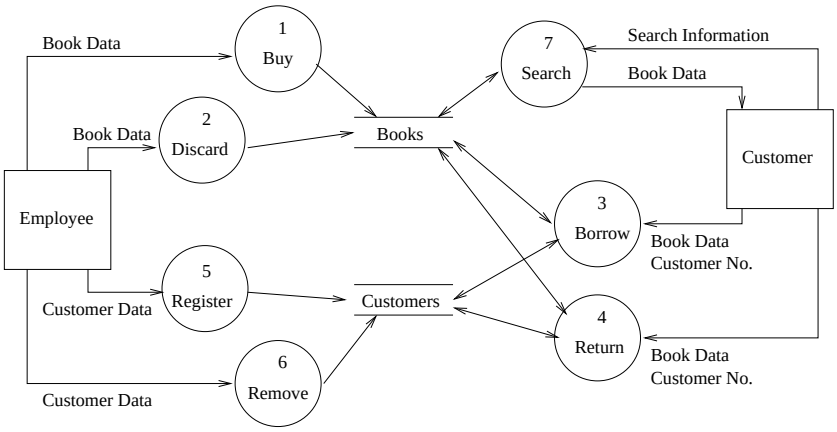
http://proglang.informatik.uni-freiburg.de/teaching/swt/2005/

Exercise Sheet 4

Deadline: May 10th, 2005

Exercise 1 – Data Flow Diagramm: (3 points)
Model the data flow of a library with a Data Flow Diagram.
This simplified library has employees, who can buy or sort out books, and customers, who can borrow and return books. New customers have to be registered by an employee and known customers can be removed by them. In addition, customers shall be able to search for books.

Solution:



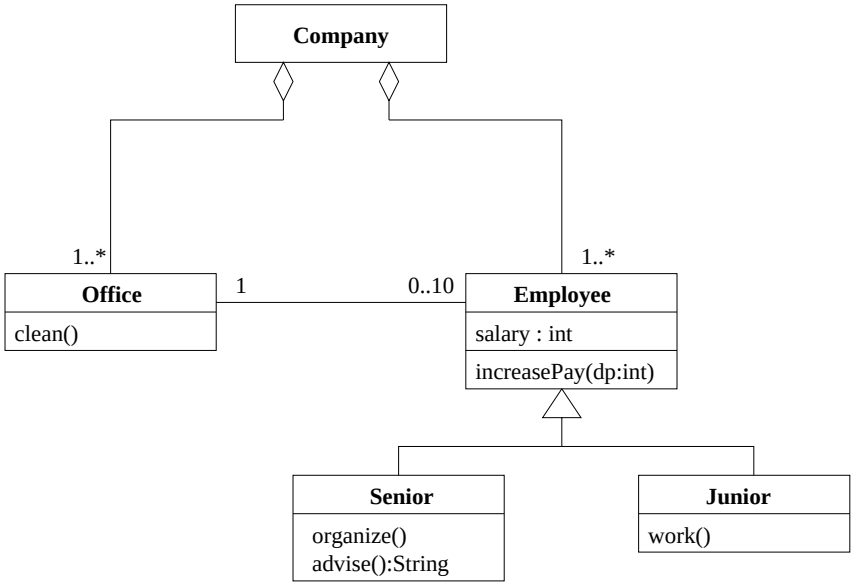
Exercise 2 – Decision Table: (3 points)
Orders at a supplier company are executed as follows:
If the incoming payment is received within 2 weeks, 4 % discount are granted. If in addition the order value was greater than 1000 Euro, no costs for shipping are billed. If the order value was less than 50 Euro and the incoming payment was not received within 2 weeks, the shipment will be of low priority.

1. Draw a decision table which defines the actions of the company.
2. Reduce your decision table.

Solution:

DT1: Delivery		R1	R2	R3	R4	R5	R6	R7	R8
B_1	Payment received in 2 weeks	Y	Y	Y	Y	N	N	N	N
B_2	Order Value > 1000 Euro	Y	Y	N	N	Y	Y	N	N
B_3	Order Value < 50 Euro	Y	N	Y	N	Y	N	Y	N
A_1	4% Discount		X	X	X				
A_2	charge for shipment			X	X		X	X	X
A_3	low priority shipment							X	
A_4	illogical	X				X			

DT1: Delivery		R2	R3/R4	R7	else
B_1	Payment received in 2 weeks	Y	Y	N	
B_2	Order Value > 1000 Euro	Y	N	N	
B_3	Order Value < 50 Euro	N	-	Y	
A_1	4% Discount	X	X		
A_2	charge for shipment		X	X	X
A_3	low priority shipment			X	

Exercise 3 – Class Diagramm: (4 points)
Draw a class diagram modelling the following company:
The company consists of at least one office, which can be cleaned. There is also at least one employe in the company. Every employee has a salary and their salary may be raised by *dp*. Every employee has his office, while a office may contain up to 10 employees.
There are senior and junior employees. The senior employees organize the workflow and offer good advice (of type String), while the junior employees work.

Solution: