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Question 1.

The System Development Methodology is the approach used to develop a particular information system, whereas the System Development Life Cycle is the process of activities needed to build, launch, and maintain an information system.

Question 2.

i. An *Event* is an occurrence that takes place at a given time and location. An *External Event* is a non-system event that is usually originated by an external agent or actor. A *Temporal Event* is something that happens as a result of reaching a certain point in time. A *State Event* is an event that occurs when something arises within the system that initiates a procedure.

ii. All external, temporal, and state events are identified using the event decomposition technique. For each event, a use case will be identified and designated to describe the system's function when the event occurs. Because EBP is the same level as a use case definition, it identifies use cases at the appropriate level of analysis.

Question 3.

i. Four basic approaches to program development order:
    a. Input, process, output (IPO)
        - A development order that implements input modules first, process modules second and output modules last
    b. Top-down development
        - Implements top-level modules first
    c. Bottom-up development
        - Implements low-level detailed modules first
    d. Use-case driven
        - Selects specific use cases and orders the development based on said use cases

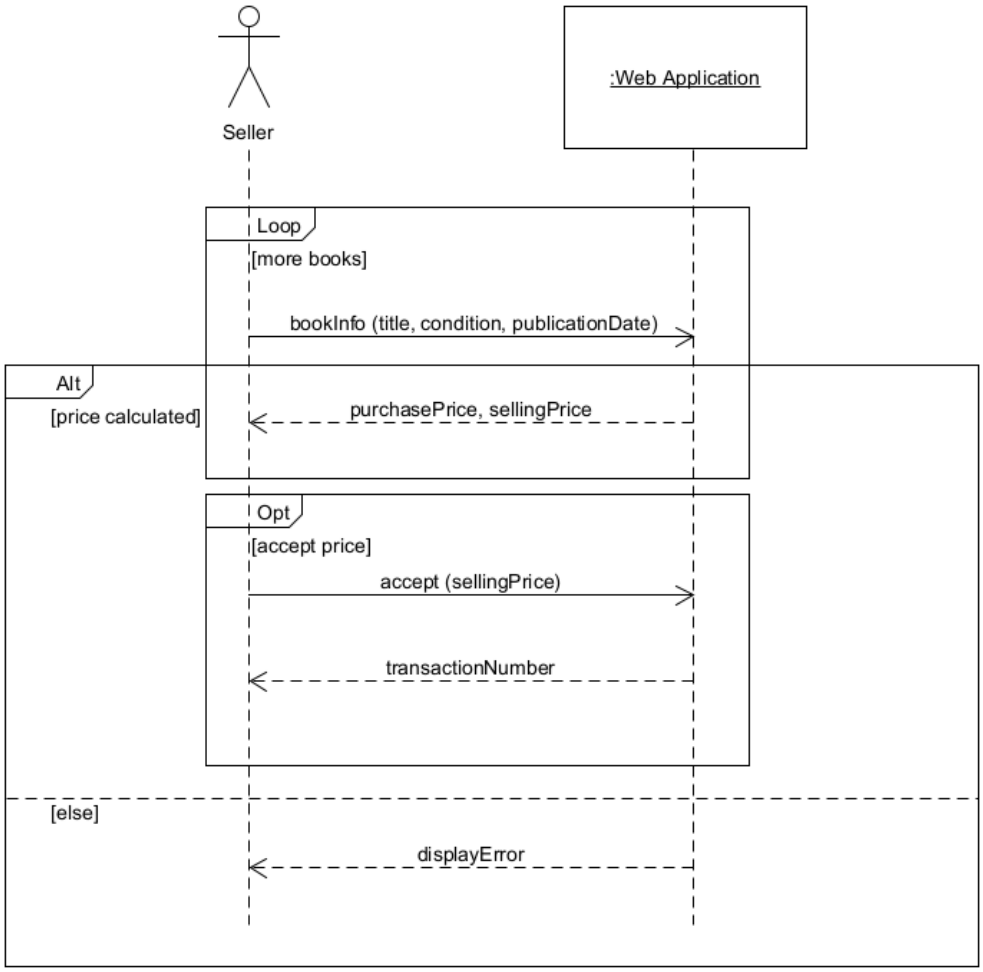
ii. Iterative development is a method of system development in which the system is established piece by piece over the course of several iterations. After completing a small portion of the system, the core procedures are repeated to refine and add to the system until it is complete. Use-case-driven development is well suited to iterative development since a new use case can be chosen for each iteration based on the present state of the system.

Question 4.

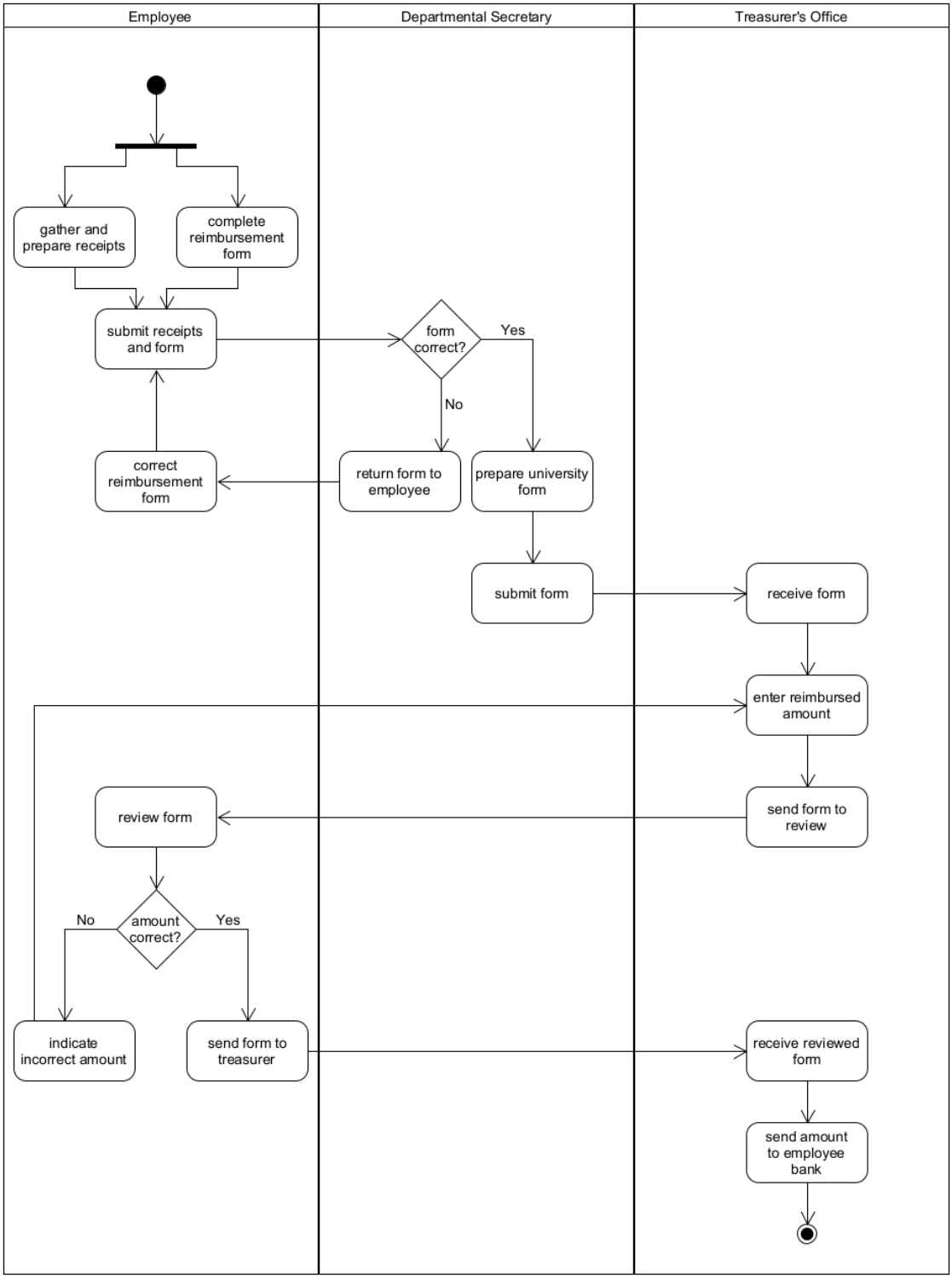
i. **CRUD Analysis** the *Buyer* domain class:

CRUD	Use case
Create	Register buyer membership
Read/report	Display transaction details
Update	Loan book
Delete	Cease buyer membership

ii. **System Sequence Diagram** showing the communication between the *seller* and the *web application* when *selling a book*

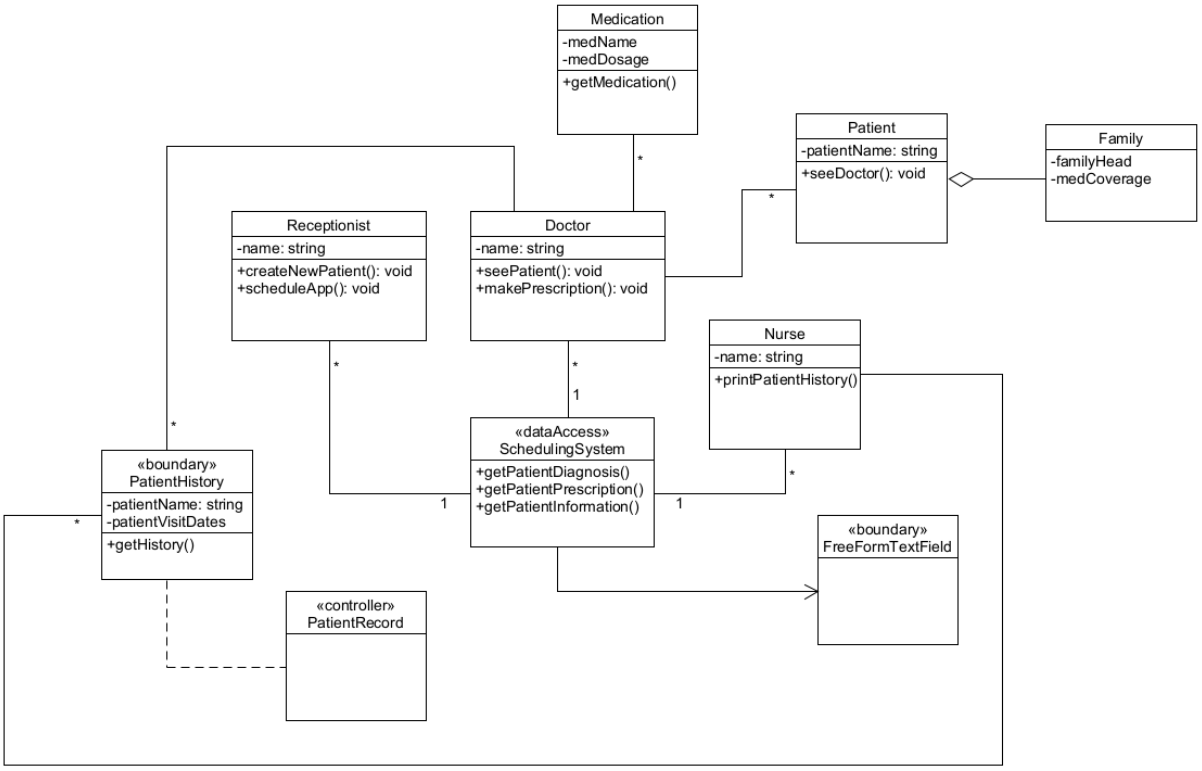


Question 5.


Employee
Departmental Secretary
Treasurer's Office
gather and prepare receipts
complete reimbursement form
submit receipts and form
form correct?
Yes
No
correct reimbursement form
return form to employee
prepare university form
submit form
receive form
enter reimbursed amount
review form
send form to review
No
amount correct?
Yes
indicate incorrect amount
send form to treasurer
receive reviewed form
send amount to employee bank

Question 6.

i.



ii.

Use case	Brief use case description
View patient history	Doctor/nurse enters patient information, system retrieves patient history and displays the data, system prints history if needed
Prescribe medication	Doctor/nurse enters medication information to prescribe and the patient's information, system displays and prints the prescription