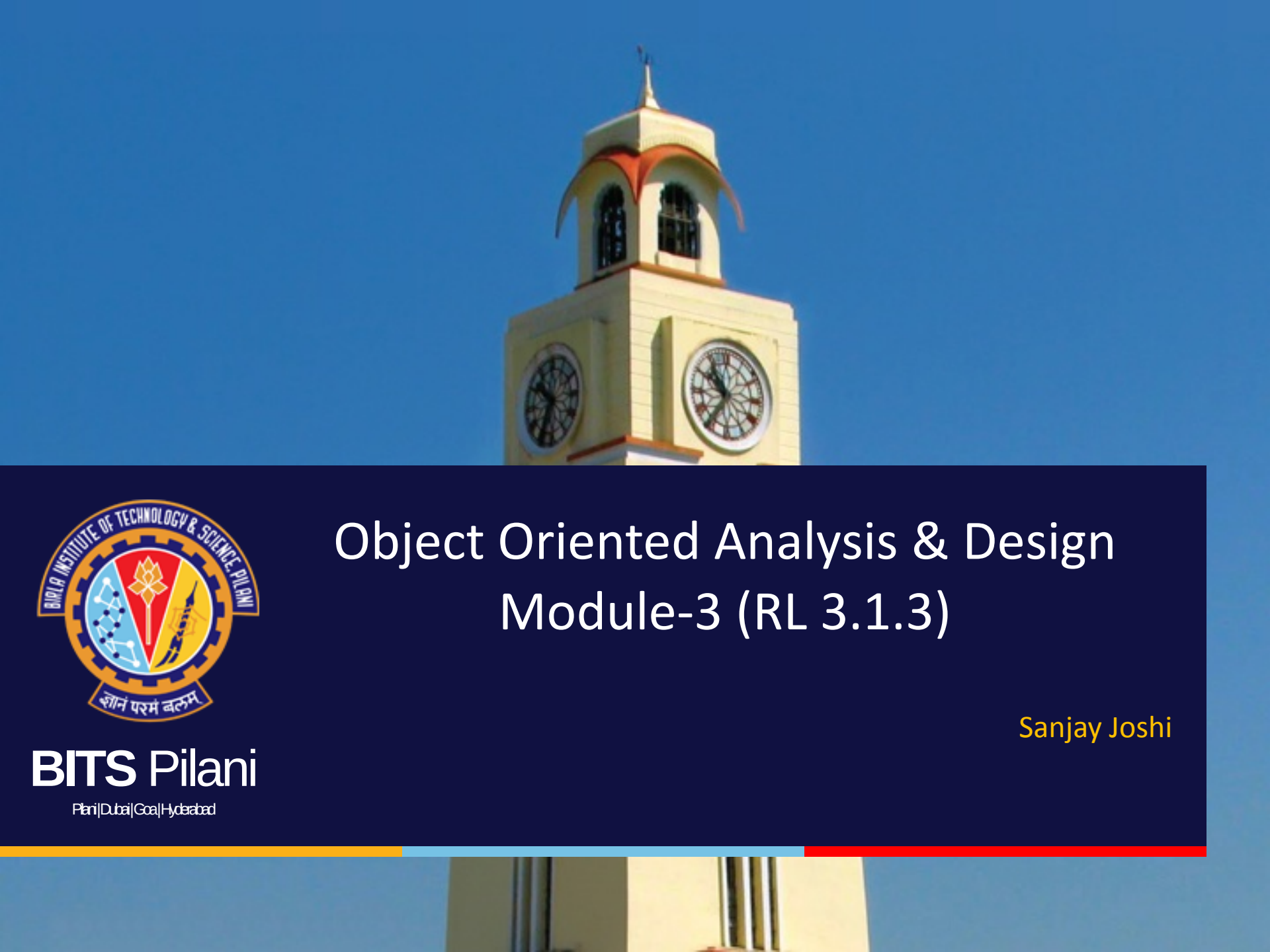

Object Oriented Analysis & Design
Module-3 (RL 3.1.3)

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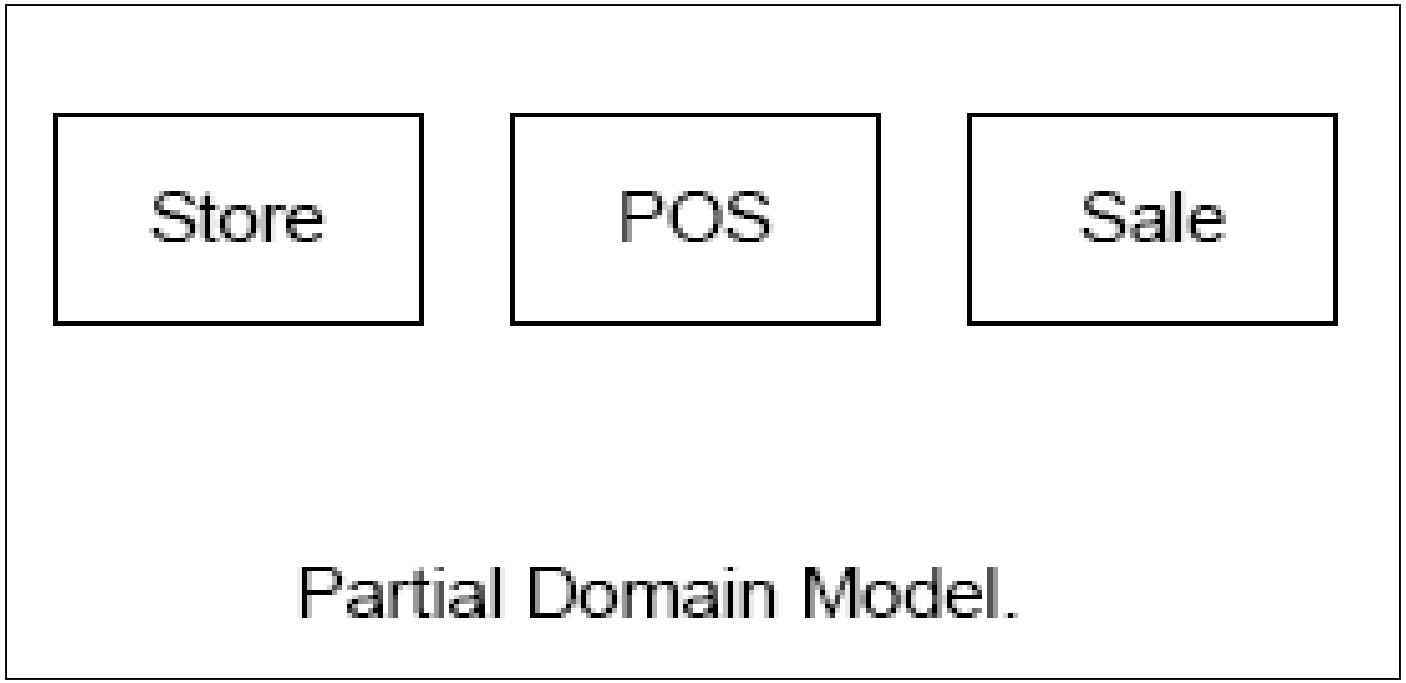
Identification of Domain Concepts from Use Case

Domains Concepts in PoS

- A central distinction between Object oriented and Procedure Oriented: division by concepts (objects) rather than division by functions.



Strategy to Identify Conceptual Classes

- Use noun phrase identification.
  - Identify noun (and noun phrases) in textual descriptions of the problem domain, and consider them as concepts or attributes.
  - Use Cases are excellent description to draw for this analysis.

Finding Conceptual Classes with Noun Phrase Identification

1. This use case begins when a **Customer** arrives at a **POS checkout** with items to purchase.
2. The **Cashier** starts a new sale.
3. **Cashier** enters **item identifier**.

...

- The fully addressed Use Cases are an excellent description to draw for this analysis.
- Some of these noun phrases are candidate concepts; some may be attributes of concepts.
- A mechanical noun-to-concept mapping is not possible, as words in a natural language are (sometimes) ambiguous.

Fully-dressed Use Case: Process Sale

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Use case UC1: Process Sale
Primary Actor: Cashier
Stakeholders and Interests:
-Cashier: Wants accurate and fast entry, no payment errors, …
-Salesperson: Wants sales commissions updated.
…
Preconditions: Cashier is identified and authenticated.
Success Guarantee (Postconditions):
-Sale is saved. Tax correctly calculated.
…
Main success scenario (or basic flow): [see next slide]
Extensions (or alternative flows): [see next slide]
Special requirements: Touch screen UI, …
Open issues: What are the tax law variations? …

Fully dressed example: Process Sale

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Main success scenario (or basic flow):

1.The Customer arrives at a POS checkout with items to purchase.
2. The cashier records the identifier for each item. If there is more than one of the same item, the Cashier can enter the quantity as well.
3. The system determines the item price and adds the item information to the running sales transaction. The description and the price of the current item are presented.
4. On completion of item entry, the Cashier indicates to the POS system that item entry is complete.
5. The System calculates and presents the sale total.
6.The Cashier tells the customer the total.
7.The Customer gives a cash payment ("cash tendered") possibly greater than the sale total.

Extensions (or alternative flows):

2a. If sticker is tampered. Enter item id mannually
If invalid identifier entered. Indicate error.
If customer didn't have enough cash, cancel sales transaction.
*If Power failure. Restart the transaction.

The NextGen POS (partial) Domain Model