

**Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and
Technology**

(Deemed to be University Estd. u/s 3 of UGC Act, 1956)

School of Computing

B.Tech. – Computer Science and Engineering



VTR UGE2021- (CBCS)



**Academic Year: 2025–2026
SUMMER SEMESTER - SS2526**

Course Code : 10211CS207

Course Name: Database Management Systems

Slot No : S2L5

DBMS TASK - 13 REPORT

Title: Using Clauses, Operators, and Functions in Queries **System Name:** Online Food Ordering System

Submitted by:

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Use Case-1: Building a Cart Analysis for Myph

Myph has introduced a new mobile phone product range into the consumer market. Each product has a data model containing product ID, title, description, stock quantity, pricing details, and associated categories. To efficiently list products under any category, the data model is enhanced by creating category documents that include the category path in a category tree. This allows faster browsing and hierarchical retrieval of products.

Enhanced Data Model:

Product Document Includes:

- Product ID • Title • Description • Stock Quantity • Price • Category IDs / Category Path

Category Document Includes:

- Category ID • Category Name • Parent Category • Path in Category Tree • Product References

Cart Analysis for Consumer Selection Options:

Cart analysis provides insights into frequently selected products, quantity selection patterns, category preference, market basket analytics, and cart abandonment reasons. This enables product recommendations, promotional offers, and inventory optimization.

Outlier Detection in Cart:

Cart analysis detects abnormal or surplus product selections and prevents stock misuse. Therefore, yes — outlier detection is supported.

Relational Database Transaction Support:

Relational databases ensure ACID properties in cart operations such as product add/remove, price and stock updates, and successful order transactions.

Recovery in Carting & Commerce:

Commerce systems implement session restore, rollback on failure, and event logs to recover incomplete transactions or interrupted payment processes ensuring continuous and reliable customer experience.

Conclusion:

- Product categorization supported through hierarchical category documents
- Cart analytics supports personalized shopping and fraud detection
- Relational DB ensures secure transactional processing
- Recovery maintains system integrity and user trust

Example Code Representation:

```
{
  "ProductID": "P101",
  "Title": "Myph A1",
  "Description": "Latest 5G smartphone from Myph",
  "StockQty": 50,
  "Price": 19999,
  "CategoryPath": "Electronics/Mobile Phones/Myph Series"
}

{
  "CategoryID": "C10",
  "CategoryName": "Mobile Phones",
  "ParentCategory": "Electronics",
  "Path": "Electronics/Mobile Phones",
  "ProductReferences": ["P101", "P102"]
}
```