**Stored Procedures**

* Advantages:
  + Reduce the number of round trips between application and database server
  + Increase the application performance, because user-defined functions are pre-compiled and stored in the database server uses its full-power
  + Be able to be reused in many applications
* Disadvantages:
  + Slow software development because it requires specialized skills that many developers do not possess (PL/SQL)
  + Make it difficult to manage versions and hard to debug
  + Less portable code to other database management systems (MySQL, SQL Server, PostgreSQL, Oracle, DB2)

**Breadcrumbs**

* Used when hierarchical structure has 2 or more levels

**AJAX**

* Always needs to have return code (“Returns”)
* Responses to AJAX requests can be HTML, XML, JSON and others

**LBAW Framework**

* When an error occurs in a web resource action, it should be redirected to another web resource

**Transactions**

* ACID properties:
  + **Atomicity** guarantees multiple operations are treated as an indivisible unit
  + **Consistency** guarantees that the database moves from one consistent state into another consistent state
  + **Isolation** guarantees that the outcome of multiple transactions executed concurrently is the same as if every transaction was executed in isolation.
  + **Durability** refers to the fact that the effects of a committed transaction should be persisted into the database.

**Laravel**

* **Eloquent** used to manage data access
* **Blade**  used to define HTML views

**Wireflows**

* Used to describe main interactions with system

**Business Rules**

* Defines or constraints one aspect of the business
* Ex.:
  + Item return date must be greater than item loan date

**Third Normal Form**

* Desnormalizing third normal form:
  + Advantage:
    - accelerates system performance

**Diagram, schematic

Description automatically generatedUML**

* **Disjoint:**
  + cannot have 2 instances at the same time (cannot be male and female at same time)
* **Overlapping (not-disjoint):**
  + can have 2 instances at same time (can be male and be employee)
* Text, letter

  Description automatically generated**Complete:**
  + all subclasses are specified in UML
* **Incomplete:**
  + Diagram

    Description automatically generatednot all subclasses are specified in UML
* Example is **complete** because all 3 options are displayed in the UML
* **Composition:**
  + child class cannot exist without parent
  + Ex.:
    - hotel room and hotel => room cannot exist without hotel
* **Agregation:**
  + child class can exist without parent
  + Ex.:
    - wheel and car => wheel can be used for other things

**Independent signals in interrogation research**

* Calculated when document indexation occurs

**“Estudo da carga do sistema usado no desenho do Esquema Físico”**

* Estimation of number of tuples and associated growth rate

**HTTP**

* Defines how servers and web clients should structure and organize the messages they use to communicate

**SQL**

* FOREIGN KEY must refer to UNIQUE value in other table

**User Stories**

* Designed for project stakeholders

**Indexes**

* B-tree:
  + tree-like structure
  + allow for search, order and range search in log time
* Hash:
  + map keys to values
  + only considered when equality operator is used