

Database Application Programming

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Introduction

Introduction

Project

Software

Program

Conclusion

Outlook

- Task
- Software
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- Outlook

The Project

- Technical maintenance for governmental property
- 3000 Operations a year
- Transition from manual document management to automatical processing

Task

Process all emails from a certain sender with a certain content.

Check the contained information for formal and contentwise correctness.

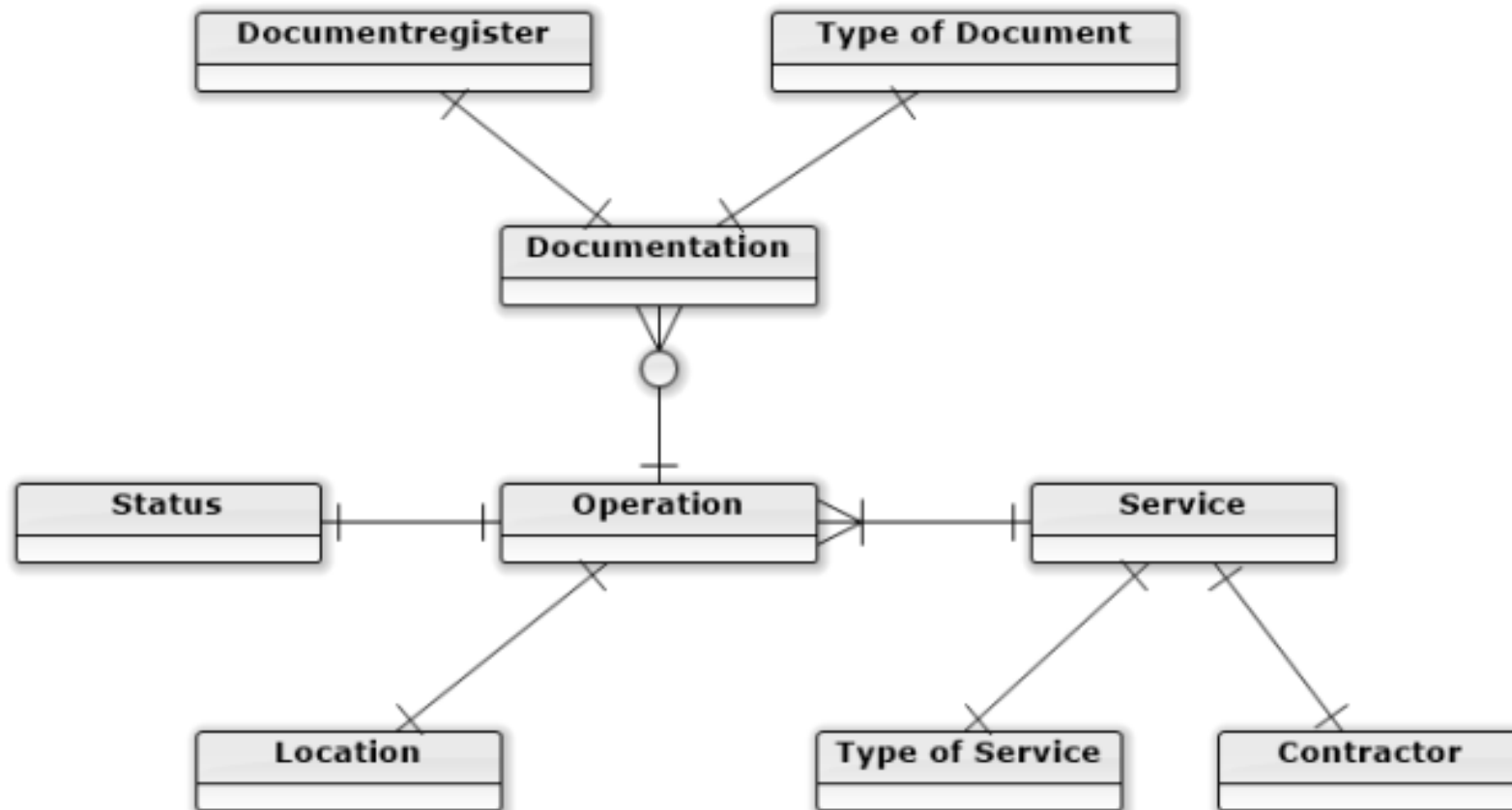
Update data in the database.

Software

- Microsoft Access 2007
 - Jet (Joint Engine Technology) Engine
 - (ACE – Access Database Engine)
 - Relational Database
 - VBA (Visual Basic for Applications)
 - SQL Language
- Microsoft Exchange Server

Database

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Problems

- Invalid informations
- Invalid information formatting
- Non uniform email formatting
- Interference of multiple Users
- Unexpected errors

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Methods

- ACID Principles
 - **A**tomicity
 - **C**onsistency
 - **I**solation
 - **D**urability

- MAPI
 - Messaging Application Programming Interface

Program

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Atomicity

A transaction cannot be executed partly.
Either all changes take place or none.

Isolation

Transactions cannot interfere with each other
when executed concurrently.

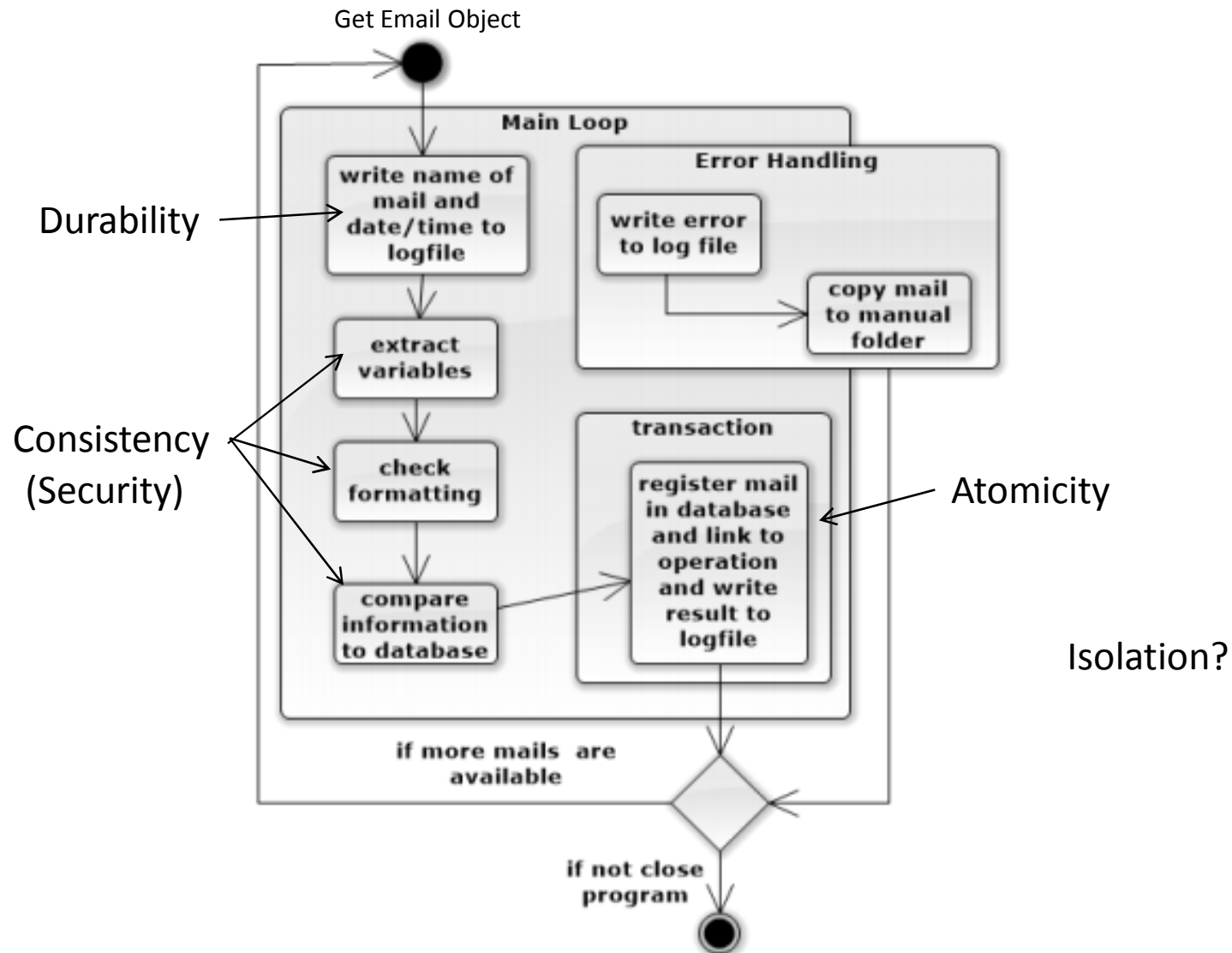
Consistency

A transaction must change the database from
one consistent state into another consistent
state.

Durability

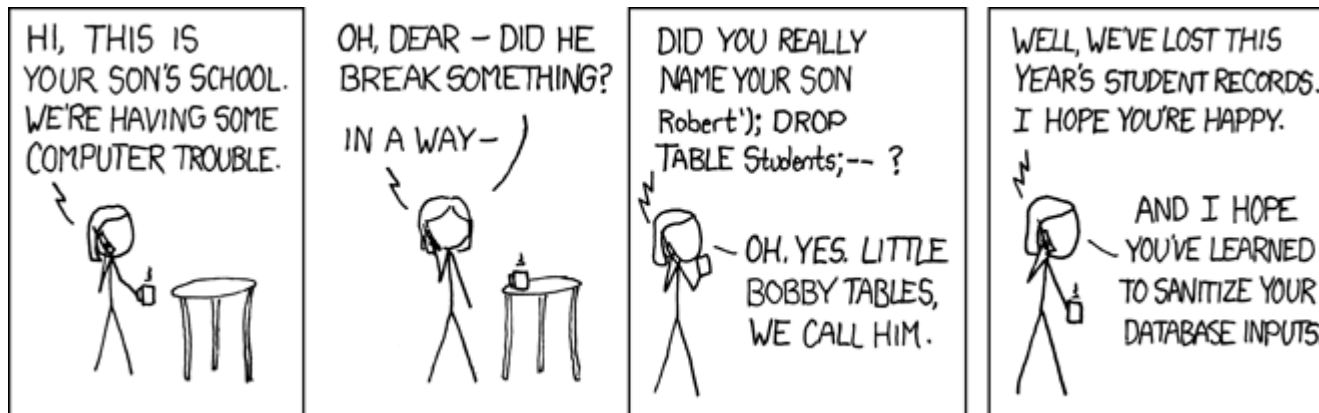
A transaction has to be permanent
even in the case of a system crash.

Program



Security

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(<http://stackoverflow.com/questions/512174/non-web-sql-injection/512234#512234>)

Conclusion

- Develop a structure before starting programming
- Let other people test your script
- Write comments in the code
- Write good and informative errorhandling
- Have a backup

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- Create/Improve Multiuser handling
 - Locking Mailbox
 - Global Configuration file
- Expand functions
 - Documents, Attachments, Scans, (OCR)

Thank you for your attention