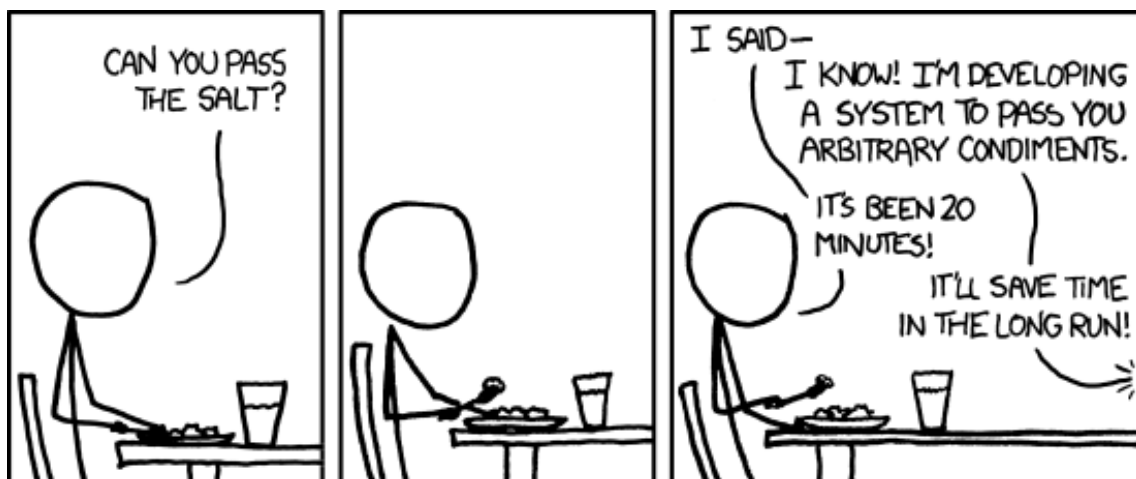


# Swimming Pool Automated Checking System

CITS4401 Software Requirements and Design - Practical Assignment

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# **1 Introduction**

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# **2 Design Constraints**

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# **3 Design Pattern**

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## 4 Use Case Diagram



NAME: regularUpdate

ACTORS: PoolTestingUnit

GOAL: store collected information from the PTU in the system

PRECONDITIONS: PoolTestingUnit is authenticated

BASIC FLOW: - Use case starts when ptu sends data - validate data - store it so that it can be used later - The use case ends

ALTERNATIVE FLOW: - Data is malformed - Recieved data is logged for analysis - Issue storing data - Fall back to logging data and alert the administrator

POSTCONDITIONS: Success: Data has been stored Failure: Data has been stored in a log for

analysis by admin

NAME: urgentUpdate

ACTORS: PoolTestingUnit, PoolShopAdministrator, PoolOwner

GOAL: store collected information from the PTU in the system and alert the pool owner and pool shop that there is a problem

PRECONDITIONS: PoolTestingUnit is authenticated

BASIC FLOW: - use case starts when ptu sends data with alerts - validate data - store it so that it can be used later - email is sent to the PoolShopOwner and PoolOwner - the use case ends

ALTERNATIVE FLOW: - Data is malformed - Recieved data is logged for analysis - Issue storing data - Fall back to logging data and alert the administrator - Email fails - Email gets retried and event is logged

POSTCONDITIONS: Success: Data has been stored, email has been sent to PoolShopOwner and PoolOwner Failure: Data has been stored in a log for analysis by admin

NAME: generateReport

ACTORS: PoolOwner, PoolShopAdministrator

GOAL: provide latest data to

PRECONDITIONS: First week of the PTU or a month since the last report

BASIC FLOW: - use case starts at the same time every day - gets a list of pools that need reports - for each pool - gets the information that should be on the report - generates the report as a pdf - emails it off

ALTERNATIVE FLOW:

POSTCONDITIONS: Success: Report generated and emailed to pool owner and pool shop Failure: Any errors logged for admin to look over

NAME: addPoolShop

ACTORS: Administrator

GOAL: To add a pool shop to the system.

PRECONDITIONS:

BASIC FLOW: - Administrative user enters information about the pool shop

ALTERNATIVE FLOW: - Invalid Information - Error displayed and user is able to re-enter

POSTCONDITIONS: Success: Data is stored and can be retrieved later Failure: User is given achance to modify data

NAME: editPoolShop

ACTORS: Administrator

GOAL: To edit a pool shop in the system.

PRECONDITIONS:

BASIC FLOW: - Administrative user enters updated information about the pool shop

ALTERNATIVE FLOW: - Invalid Information - Error displayed and user is able to re-enter

POSTCONDITIONS: Success: Data is stored and can be retrieved later Failure: User is given achance to modify data

NAME: removePoolShop

ACTORS: Administrator

GOAL: To remove a pool shop from the system.

PRECONDITIONS:

BASIC FLOW: - Administrative selects the pool shop - Confirms that the pool shop should be

disabled

ALTERNATIVE FLOW: - Cancelled - No change is made

POSTCONDITIONS: Data is no longer accessible. User no longer able to log in

No change

NAME: addPool

ACTORS: PoolShopAdministrator

GOAL: To add a pool to the system.

PRECONDITIONS:

BASIC FLOW:

ALTERNATIVE FLOW:

POSTCONDITIONS:

NAME: editPool

ACTORS: PoolShopAdministrator

GOAL: To edit a pool in the system.

PRECONDITIONS:

BASIC FLOW:

ALTERNATIVE FLOW:

POSTCONDITIONS:

NAME: removePool

ACTORS: PoolShopAdministrator

GOAL: To remove a pool from the system.

PRECONDITIONS:

BASIC FLOW:

ALTERNATIVE FLOW:

POSTCONDITIONS:

## 5 Object Models

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## 6 Dynamic Models

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# Bibliography

[1] Info