

# **SATELLID: PERSONAL KNOWLEDGE MANAGER**

## with Web Technologies

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Introduction

Literature Study

Analysis & Design

Implementation & Testing

Conclusion & Suggestion

## INTRODUCTION

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There are tons of **daily personal knowledge** that must be managed,  
but they can't be handled with regular tools.

Daily personal knowledge are things like details or facts of:



People Profiles  
and contacts



Organizations, Schools,  
and Companies



Glossary of  
Definition



Hardware and Software  
Product Listing



Publication of Papers, Books,  
News, or Presentations



Known or Visited  
Places or Locations



Upcoming and Attended  
Events or Schedule



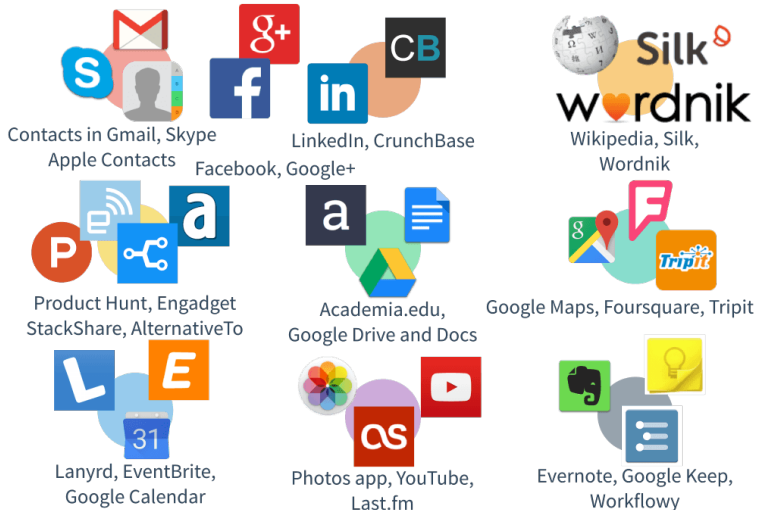
Multimedia Info such as  
Photo, Music, or video



Lot of Other  
Miscellaneous Things

All of these are also the context of knowledge

There are a lot of tools/systems for each, that contains knowledge



There is a need for a single personalized system

How to manage those daily personal knowledge with single system?

- Solve a problem around **daily knowledge management** with a system that is personal.
- Essential knowledge are mostly separated into too many softwares.
- Need for a simple and single personalized system.
- Managing knowledge should use a knowledge manager.



Define and develop a personal knowledge manager named “Satellid”, that built using Web technologies.

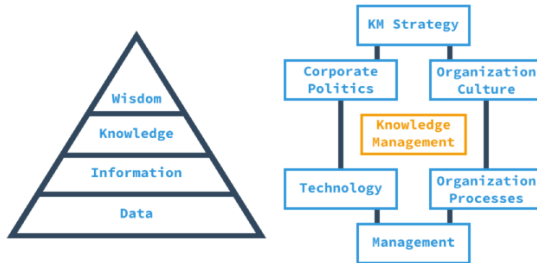
1. How to manage tons of personal knowledge with just a simple and single system of knowledge manager?
2. How can knowledge manager naturally structure the data into knowledge that has context?

- Create a **simple system** to do **daily knowledge management** for **personal** use
- The main methodologies are **agile**, **MVP**, and **ATDD**.
- The main technologies are **MongoDB**, **JavaScript**, and **Meteor framework**.

## LITERATURE STUDY

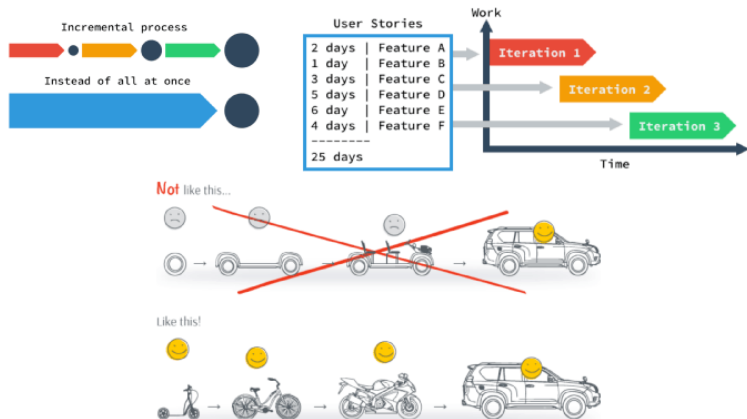
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# KNOWLEDGE MANAGEMENT SYSTEM



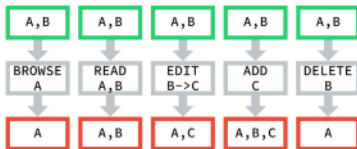
Data-Information-Knowledge-Wisdom (DIKW),  
Knowledge Management System (KMS),  
Personal Knowledge Manager

# SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC)



Agile methodologies,  
Minimum Viable Product (MVP)

# DESIGN PATTERN



Single Page  
App Design



Common/Traditional  
App Design



VS



BROWSE, READ, EDIT, ADD, DELETE (BREAD),  
simple interaction and interface design with mockup,  
Single Page Application (SPA)



Document/Schema-less  
Data Model



mongoDB

Document-based NoSQL database named MongoDB

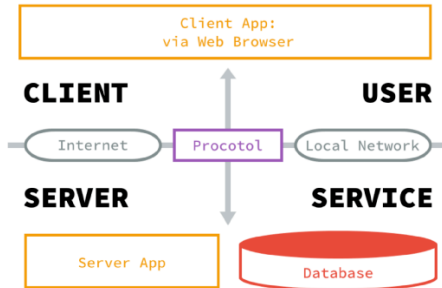




With JavaScript and JSON related technologies



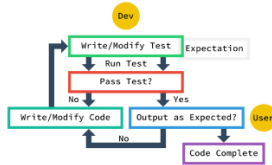
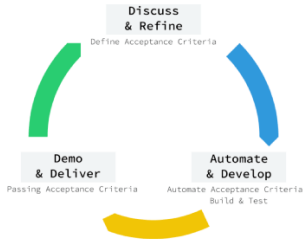
on top of **Node.js**



build a Web application



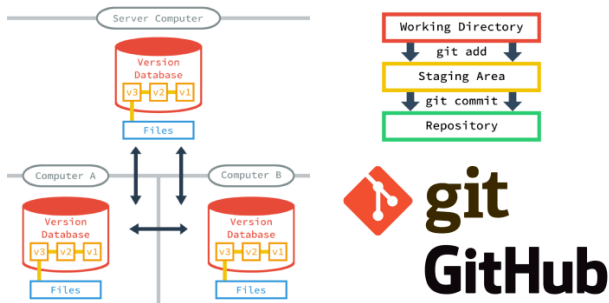
using full stack framework named Meteor



VELOCITY

software tested in Acceptance Test Driven Development (ATDD)

# SOURCE CODE MANAGEMENT



source code is version controlled using **Git**  
and distributed via **GitHub**

## ANALYSIS & DESIGN

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## Target User:

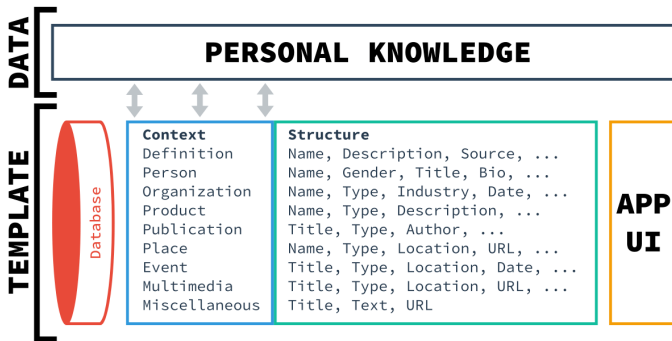
Person who frequently gather and really want to manage their tons of knowledge at almost everytime





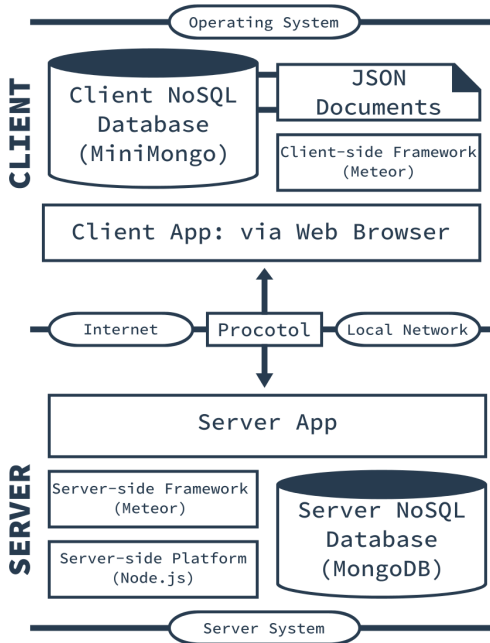
## User Types:

Regular person, researcher, engineer, developer, designer, information architect, event speaker, student, teacher, leader, collaborator, colleagues, recruiter, etc

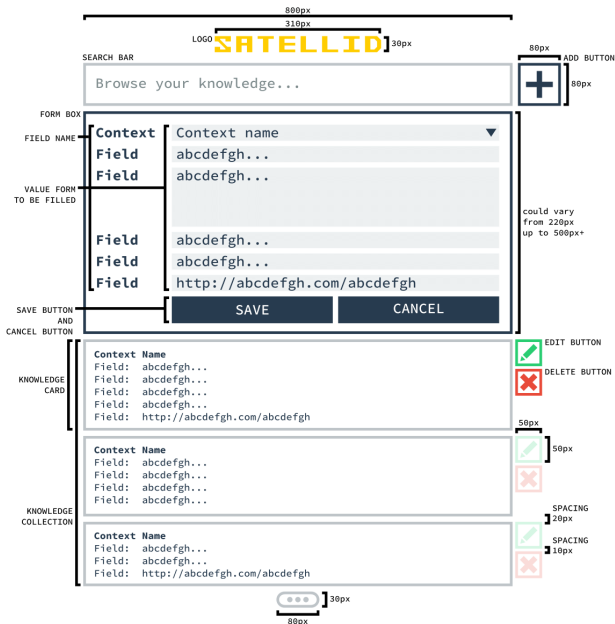


A data and template approach to classify the knowledge with its context and structure.

# DESIGN: APPLICATION ARCHITECTURE



# DESIGN: USER INTERFACE MOCKUP



# DESIGN: USER INTERACTION

## TERMINAL / CLI

```
$ meteor
[[[[[ /path/to/satellid/app ]]]]]
=> ...
=> Running at: http://localhost:3000
```

TURN ON/OFF  
THE SYSTEM  
VIA  
TERMINAL/CLI

## USER

### WEB BROWSER

TYPE AND SEARCH Could automatically  
show the search result

Context	Context name ▼
Field A	Value A...
Field B	Value B...
Field C	Value C...
Field D	Value D...
Field E	Value E...
SAVE CANCEL	

Context name  
Field A: Value A  
Field B: Value B  
Field C: Value C  
Field D: Value D  
Field E: Value E

Modifier buttons will  
be visible or opaque  
when a knowledge  
is hovered or selected



ADD KNOWLEDGE  
Will show the  
form box

FORM BOX TO  
TYPE KNOWLEDGE  
CONTENT  
WITH CONTEXT

Save will store  
the knowledge

Cancel will close  
the form box



EDIT KNOWLEDGE



DELETE KNOWLEDGE

ACCESS AND USE  
THE SYSTEM  
VIA  
WEB BROWSER

Edit will have the edit mode  
with form box which  
the context could not  
be changed

BROWSE & READ  
EXISTING KNOWLEDGE  
AND  
SEARCH RESULT

All knowledge collection  
will be represented in  
card-like visual

\*\*\* Loading indicator will be visible  
when retrieving other knowledge

## SYSTEM

## IMPLEMENTATION & TESTING

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### Snippets of Server Code

```
if (Meteor.isServer) {  
  Meteor.startup(function() {  
    // ...  
  });  
}
```

### Snippets of Client Code

```
if (Meteor.isClient) {  
  Template.add.events({  
    "click": function() {  
      // ...  
    }  
  });  
}
```

## SATELLID

Browse your knowledge...



### Definition

Name: Knowledge  
Desc: The psychological result of learning that has a context  
Source: Open Thesaurus  
Author: Open Thesaurus Team  
URL: <http://openthesaurus.com/knowledge>

### Person

Name: Muhammad Haidar Hanif  
Gender: Male  
Title: Technology Generalist, JavaScript Developer  
Website: <http://mhaidarhanif.org>

### Product

Name: Google Search  
Type: Software, Service  
Desc: Internet search engine  
Creator: Google Inc.  
URL: <https://google.com>

### Miscellaneous

Title: Random example  
Text: Random sentence example  
URL: <http://example.com>

### Product

Name: Meteor  
Type: Software



## SATELLID

JavaScript

**Definition**Name: **JavaScript**

Desc: Lightweight, interpreted, object-oriented language with first-class functions, most known as the scripting language for Web pages

Source: Mozilla Developer Network (MDN)

URL: <https://developer.mozilla.org/en-US/docs/Web/JavaScript>**Person**

Name: Muhammad Haidar Hanif

Gender: Male

Title: Technology Generalist, **JavaScript** DeveloperWebsite: <http://mhaidarhanif.org>**Product**

Name: Meteor

Type: Software

Desc: Complete open source platform for building web and mobile apps in pure **JavaScript**

Creator: Meteor Development Group (MDG)

URL: <https://meteor.com>**Miscellaneous**

Title: Random example

Text: Random sentence example with **JavaScript** wordURL: <http://exampleofjavascript.com>**Event**

Title: JSConf

## SATELLID

Browse your knowledge...



Context  ▼

Name

Type  ▼

Desc.

Location

DateTime  to

URL

SAVE

CANCEL

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SAVE

CANCEL

**Product**

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### Product

Name: Meteor  
Type: Software

## CLOSING

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Simple and **single system** of managing tons of **personal daily knowledge** that implemented with **Web technologies**

## SUGGESTION FOR FUTURE WORK

- Can have custom form
- Can easily import and export, including backup
- BREAD a template
- Multimedia support
- Integration with other networks
- Encryption

THANK YOU



## EXTRA NOTES

1. As a System, I need to be run on supported platform and via a network
2. As a System, I can have the data imported without the app opened
3. As a User, I want to use the app via web browser
4. As a User, I want to read knowledge that already stored
5. As a User, I want to search a knowledge and view the search result
6. As a User, I want to add a new knowledge based on context
7. As a User, I want to delete a stored knowledge
8. As a User, I want to edit a stored knowledge

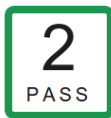
**Feature:** Example feature title

As a user of this feature  
I want to have these steps  
So that I can have the expected result

**Scenario:** Specific situation description  
Given a condition  
And an other condition  
When a performed action by someone  
Then an output is presented

VELOCITY

✕ 100%



2 tests passed in 2 ms



mocha



## Server initialization

should have a Meteor version defined



1 ms

## a group of tests

should respect equality

1 ms

# SQL VS DOCUMENT-BASED (NOSQL)

id	name	loc
0	abc	1,2
1	def	3,4
2	ghi	5,6

Relational/Table  
Data Model



Document/Schema-less  
Data Model

- ✓ Represent document in real world
- ✓ Flexible schema
- ✓ Data nesting
- ✓ Various or complex data structure

THANK YOU