

SATELLID: PERSONAL KNOWLEDGE MANAGER

with Web Technologies

Muhammad Haidar Hanif

18 March 2015

Informatics Engineering - Gunadarma University

Introduction

Literature Study

Analysis & Design

Implementation & Testing

Conclusion & Suggestion

INTRODUCTION

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



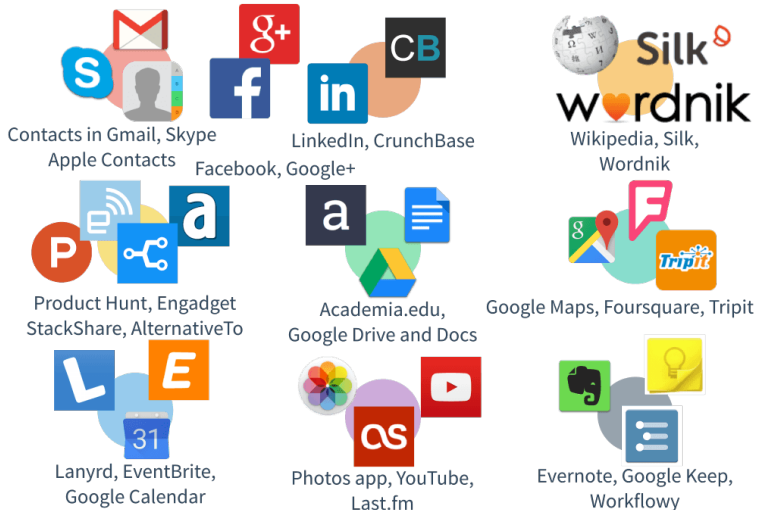
Multimedia Info such as
Photo, Music, or video



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.

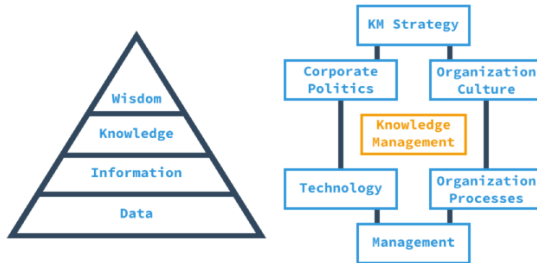
Define and develop a personal knowledge manager named “Satellid”, that built using Web technologies.

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**.

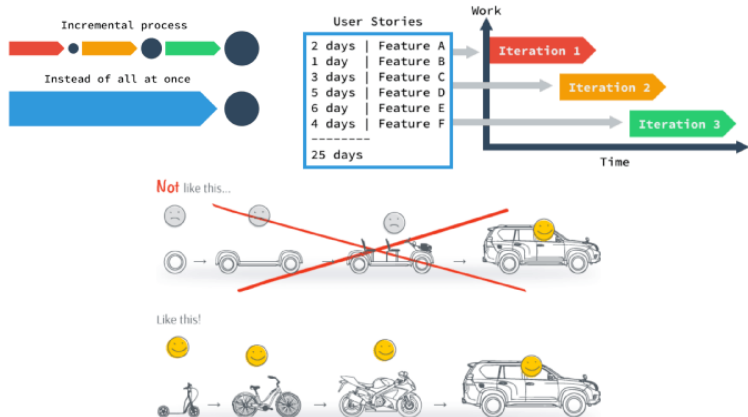
LITERATURE STUDY

KNOWLEDGE MANAGEMENT SYSTEM



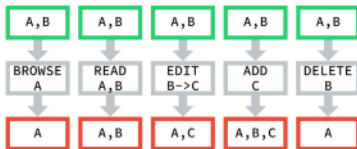
Data-Information-Knowledge-Wisdom (DIKW),
Knowledge Management System (KMS),
Personal Knowledge Manager

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

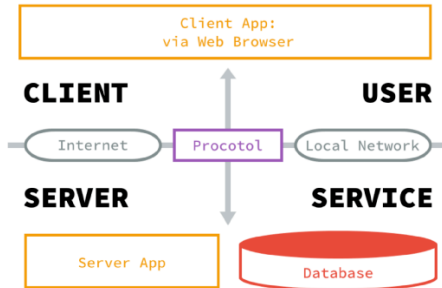
Document-based NoSQL database named MongoDB



With JavaScript and JSON related technologies



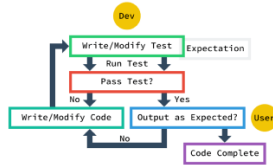
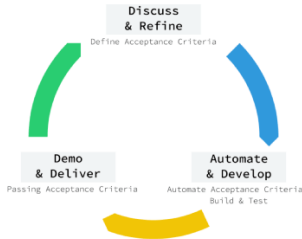
on top of Node.js



build a Web application



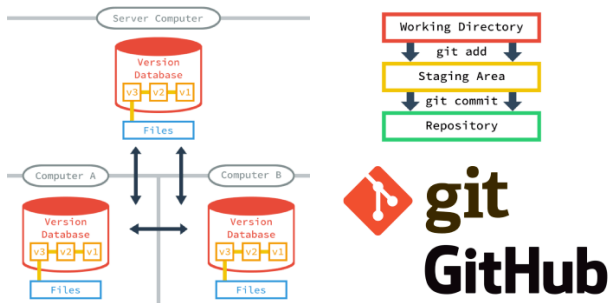
using full stack framework named Meteor



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

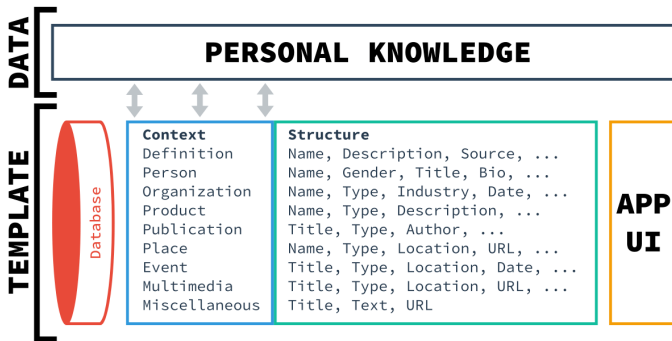
Target User:

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



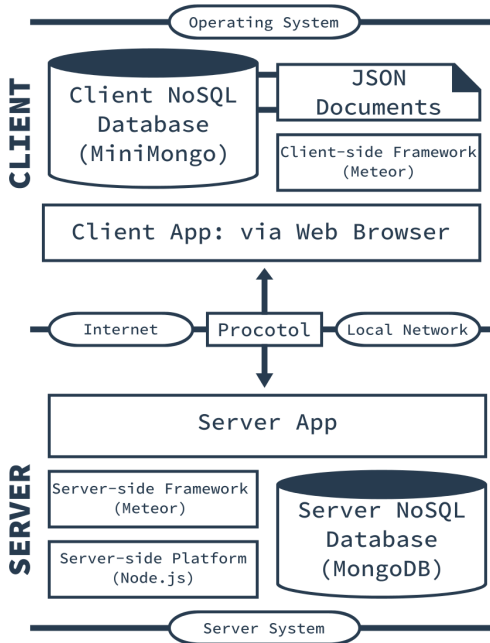
User Types:

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

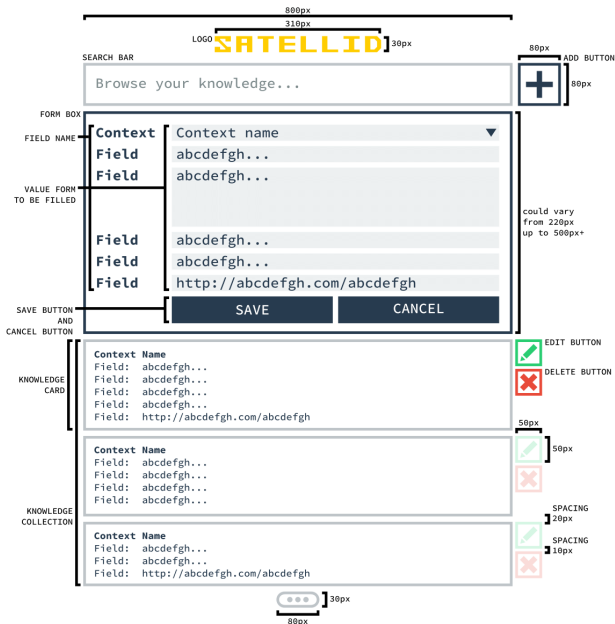


A data and template approach to classify the knowledge with its context and structure.

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

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	Event	▼
Name	HCI International 2015	
Type	Conference	▼
Desc.	International Conference on HCI	
Location	Los Angeles, California, USA	
DateTime		to
URL		
SAVE		CANCEL

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>

Product

Name: Google Search
Type: Software Service

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>

Context: Event

Name: HCI International 2015

Type: Conference ▼

Desc: 17th International Conference on Human-Computer Interaction

Location: Los Angeles, California, USA

DateTime: 2/8/2015 09:00 to 7/8/2015 17:00

URL: <http://2015.hci.international>



SAVE

CANCEL

Product

Name: Google Search

Type: Software Service

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

CLOSING

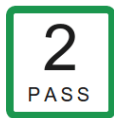
Simple and **single system** of managing tons of **personal daily knowledge** that implemented with **Web technologies**

- 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

VELOCITY



2 tests passed in 2 ms



m o c h a



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