"Smart Bookmark" KickOff Document

This document describes the content of the KickOff Document that the project groups are supposed to iterate and finalize with their Assistant, Supervisor and Coordinators.

Description

Describe as concisely as possible what the end-product will do. Which problem is it aiming to solve? Or, to which need it will serve?

Workpackages (Master feature list)

WP	Term	WP title	Estimated
1	491	Server & Database Infrastructure	3
2	491/492	Web Interface	3
3	491	API Implementation	3
4	492	Recommendation System	3
5	492	Social Network	3
6	491/492	Android Infrastructure	4
7	491/492	OCR/ISBN/Notes	2
8	492	UI/UX Design	1
9	491	Software Infrastructure	5
10	491	Communication Android-Device	3
11	491	Integration of Light Sensor and Features	3
12	492	Integration of Distance Sensor and Features	5
13	492	Device Design	1
		Total:	

Detailed Descriptions of High-Level Workpackages
In workpackages, the following functionalities / features / work items will be implemented

1.Server and Database Infrastructure	1. Install server and database 2. Design E/R diagram 3. Create tables
2.Web Interface	1. Install host and get domain 2. Build a working, plain website 3. Show data from server 4. Integrate User Interface
3.API Implementation	1. Incorporate the django-rest framework 2. Connect mobile app to the API 3. Put data into database, and retrieve them back doing all of CRUD operations in REST API
4.Recommendation System	1. Send user's' rating to server 2. Create sets based on user choice and rating 3. Research for SaaS-Open Source recommendation solutions and ML algorithms 4. Show selected books to user
5.Social Network	1. Adding sign-in and contact list 2. Create a user profile and adding book names in owner's profile 3. Creating a timeline for one's following list

6.Android Infrastructure	1. Android introduction and Install android 2. Connect Android to server 3. Connect Android to device 4. Add features

7.OCR/ISBN/Notes	1. ISBN
	   a. Research on ISBN algorithms
	   b. Integration with REST
	   c. Extract Book Info to App
	2. Notes
	   a. Research on quick OCR algorithms
	   b. Basic text analysis

	c. Send extracted text to server d. Add sharing feature
8.UI/UX Design	1. Design banners and logos 2. Create UX diagrams 3. Design buttons and features 4. Design and implement Android UI 5. Design and implement Web Interface UI

9.Software Infrastructure	1. Understand basic microcontroller pipeline 2. Choose timer,loop,interrupt
10.Communication Android-Device	1. Connect device with wired communication 2. Connect Bluetooth BLE to microcontroller 3. Connect microcontroller to the mobile phone via Bluetooth BLE 4. Send sensor data to local database in the application
11.Integration of Light Sensor and Features	1. Integrate light time 2. Send output with timestamp 3. Test sensor out
12.Integration of Distance Sensor and Features	1. Research on best sensors meet design and cost specifications 2. Code microcontroller 3. Send data to server 4. Calculate percentage 5. Send user percentage information
13.Device Design	1. Find optimal solutions for device 2. Create 3D device on CAD 3. 3D print and integration

Risk Assessment

Risk #	Description	Possible Solution(s)Possible Solution(s)
1	Sensor-Microcontroller Integration	- Try different sensors
2	Noise resulting from the environment	- Try more sensitive sensors - Isolate sensorsp - Filter the noises
3	Wireless communication	- Try different communication protocols
4	Recommendation algorithm compexity problem	- Stand by recommendation algorithms outcomes will be used
5	Fail to find book info from ISBN	- User will be asked to enter book info manually