

METU CENG491 2015 FALL

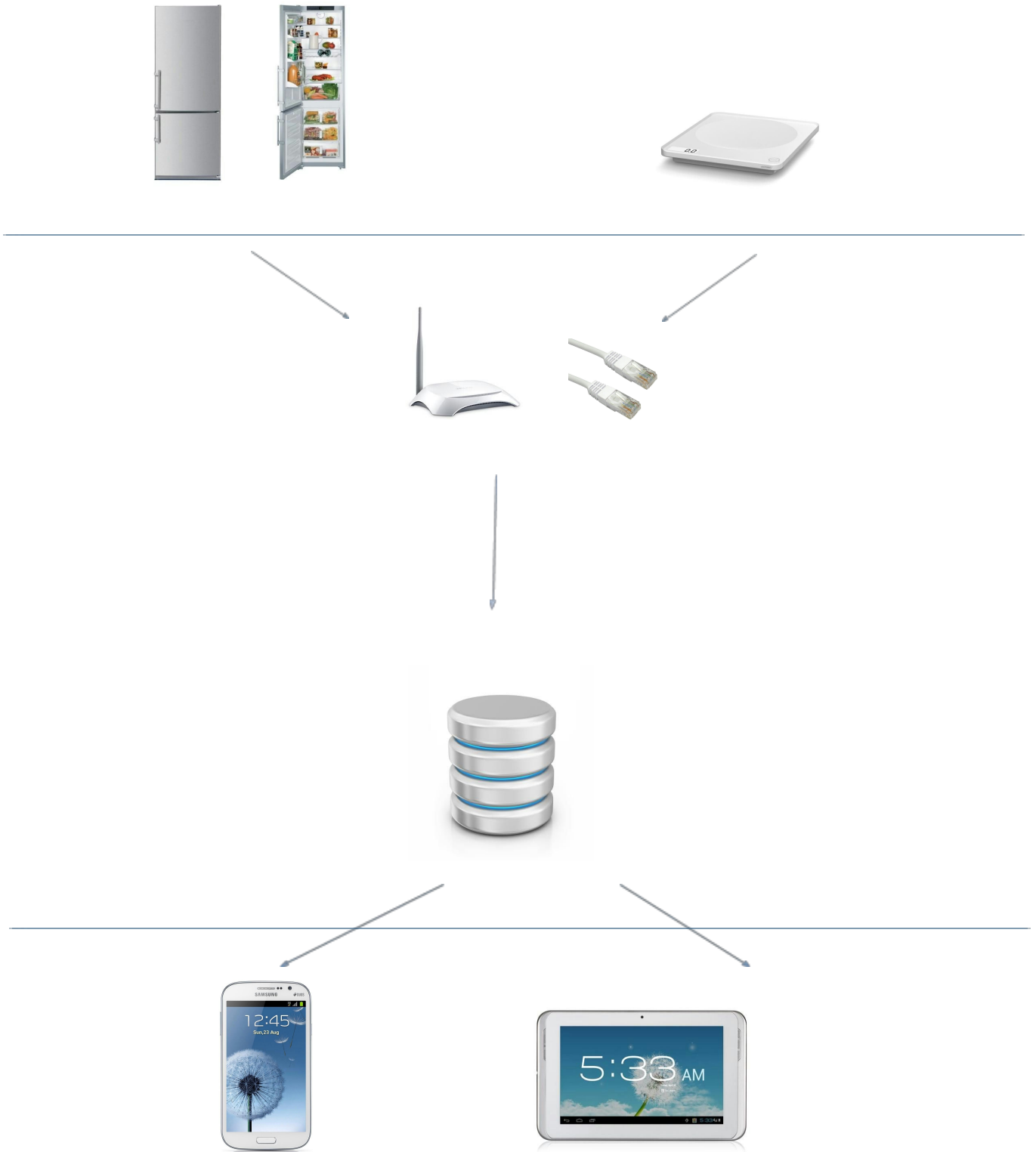
START-UP DOCUMENT

G06P33

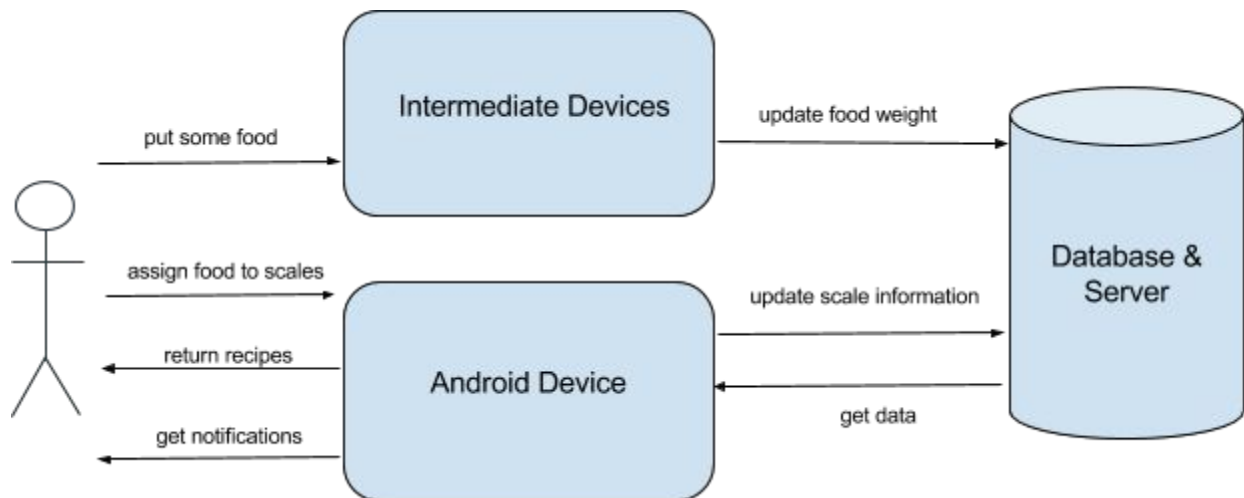
Group Name: *Thingtelligence*

Project Name: *Smart Refrigerator*

1. System Architecture



- **A Refrigerator with weight sensors** placed in every separated part of its shelves will weigh the food inside and send the data to the server. These separated parts will be labeled by the user according to the food they contain.
- **The server** will receive the data via an intermediate network device and store it in a database. This database will have not only the information of the food in the refrigerator but also several recipes for the users.
- **An Android application** will use this data to notify the user about expiration dates and remaining amount of food. Different users who use the same refrigerator will be able to create accounts and keep track of their food through this application. They will take suggestions from the application on what they could cook with the food they have in the refrigerator at that moment.
- The **user interaction model** of the project is demonstrated in the following diagram:



2. Tentative Time Plan

TaskID	Short Name	Description
T1	Research on similar products	The existing refrigerators that are similar to the intended product will be investigated. Their features and working principles will be examined in order to obtain practical ideas for the project.
T2	Gathering information about hardware and network components	An extensive research will be conducted about data transfer and the connection between weight sensors and the server. Feasibility of the methods to perform this transfer will be discussed.
T3	Installation and orientation of Android Studio	All group members will install and become familiar with Android Studio.
T4	Preparing retrospective document 1	As stated in the syllabus.
T5	Determination of the board to be used	Technologies such as Raspberry Pi, Arduino and Intel boards will be researched.
T6	Determination of weighing sensor technology	Weight/pressure sensors will be searched and determine which one will meet our requirements, easily integrate with our system.
T7	Determination of data transfer method	TCP/IP protocols will be researched and protocol that will be used will be determined.
T8	SRS documentation	Software Requirements Specification document of the project will be prepared.
T9	Preparing retrospective document 2	As stated in the syllabus.
T10	Creating food database	A sample database with food names and recipes will be created by adding the entries manually.
T11	Designing the user interfaces	Sketches of the Android application will be created.
T12	Starting to implementation of Android	User interface will be created using Google's "Material Design".

	application user interface	
T13	Connecting Android application to database	Connection between the application and the database will be created.
T14	Preparing retrospective document 3	As stated in the syllabus.
T15	Supplying the board	Ordering the determined board and providing it.

	Iteration1	Iteration2	Iteration3
T1	■		
T2	■	■	
T3		■	
T4	■		
T5	■	■	
T6	■	■	
T7		■	
T8		■	■
T9		■	
T10			■
T11		■	
T12		■	■
T13			■
T14			■
T15		■	

3. Deliverables

Deliverable	Description	When? (Sprint#)
D1	Sensors and data transfer technologies will be determined after a large - scale research.	Sprint - I
D2	User interfaces of the mobile application will be created.	Sprint - II
D3	The database that contains the recipes will be created.	Sprint - III

4. Workload Distribution

The following table shows our distribution of workload for the first semester:

	Sprint - I	Sprint - II	Sprint - III
Aslıhan	T1, T4	T3, T8, T9, T11, T12	T8, T10, T12, T13, T14, D2, D3
Çağla Burcu	T1, T4	T3, T8, T9, T11, T12	T8, T10, T12, T13, T14, D2, D3
Yağmur	T1, T2, T4, T7	T2, T3, T7, T9	T8, T14, T15, D1
Gökhan	T1, T2, T4, T5, T6	T2, T3, T5, T6, T9	T8, T14, T15, D1