GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad
Affiliated

Sardar Vallabhbhai Patel Institute of Technology
Vasad-041

A
Project Report
On

Internet of Things

Under the course of
DESIGN ENGINEERING – 1A (2130005)
B. E. II, Semester – III
(Information and Technology Branch)

Submitted by:

Group ID: 5295

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(Faculty Guide)

Prof.
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(Head Of Department)

Academic year
(2017-2018)

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CERTIFICATE

This is to certify that the students namely, **Kaushiki Kansara (160410116048), Karansinh Matroja(160410116055), Jeet Meghpara(160410116056)** of *B. E. (Information Technology) Semester III* have successfully completed the course work and related tasks for the course of **Design Engineering 1A (2130005)** during the academic term ending in the month of October 2017.

Date: 13-10-2017
Place: SVIT VASAD

Prof. Mr. Amit Kariyani   **Prof. Mrs. N.V. Shah**

(Faculty in Charge)   (Internal Examiner/HOD)   (External Examiner)

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1. Introduction

Imagine a world in which every device in the home, workplace and car are connected. A world where the lights automatically turn on when the car approaches the driveway, the coffee starts brewing when the morning alarm goes off and the front door automatically unlocks when approached by a member of the household, but stays locked when a stranger arrives on the front step. That is the type of world the Internet of Things can create.

1.1. About Team Member

In our group, there are 3 members named **Kaushiki Kansara (160410116048), Karansinh Matroja (160410116055),** and **Jeet Meghpara (160410116056).**

1.2. About Internal Faculty

In our group, there is one Internal Faculty guide named **Prof. Amit Kariyani** who is very good and experienced teacher in Design Engineering Subject. He always gives us advice about what to do and what is not.

2. A.E.I.O.U. Canvas

There are five topics that comes under AEIOU canvas. They are:

2.1. A-Activity

- Communication
- Report
- Overview
- Report
- Enjoyment
- Case study
- Photography
- Lunch

2.2. E-Environment

- Summer
- Office
- Windows
- Automation
- Without Interruption
- Convenience
- Smooth
- Speed

2.3. I-Interaction

- Admin
- Manager
- Employee
- Components
- Fan
- Air-conditioner
- Efficient performance

2.4. O-Objects

- Controlling Device
- Electrical Appliances
- Internet
- Wi-Fi Connection
- Sensors
- Cloud Storage
- Server
- Bluetooth

2.5. U-Users

- Engineers
- Senior Citizens
- Officers
- Doctors
- Businessmen
- Employers
- Students
- Teachers

AEIOU Summary :

Group ID
Domain name

Date

Version

Environment :

Summer

Office

Wireless

Smooth

Automation

Without Interruption

Speed

Convenience

Interactions :

Admin

Manager

Employee

Efficient Performance

Components

Beer

Air Conditioner

Fan

Objects :

Controlling Device

Electrical Appliances

Internet

WiFi Connection

Sensor

Cloud Storage

Server

Bluetooth

Activities :

Communication

Photography

Repost

Gives View

Employment

Lunch

Case Study

Interaction

Users :

Engineers

Doctors

Senior Citizens

Officers

Housewives

Businessmen

Employees

Students

Teachers

3. Empathy Mapping

Here we are going to explain Users, Stack Holders and Activity. And hear story boarding which have one happy story and one sad story.

3.1. Users

- Students
- House Wives
- Doctors
- Senior Citizens
- Teachers

3.2. Stakeholders

- Manufacturers
- Engineers
- Servants
- Businessmen
- Dealers

3.3. Activity

- Easy Availability for Applications
- Home Security
- Multi-Tasking
- Data Capture
- Automation
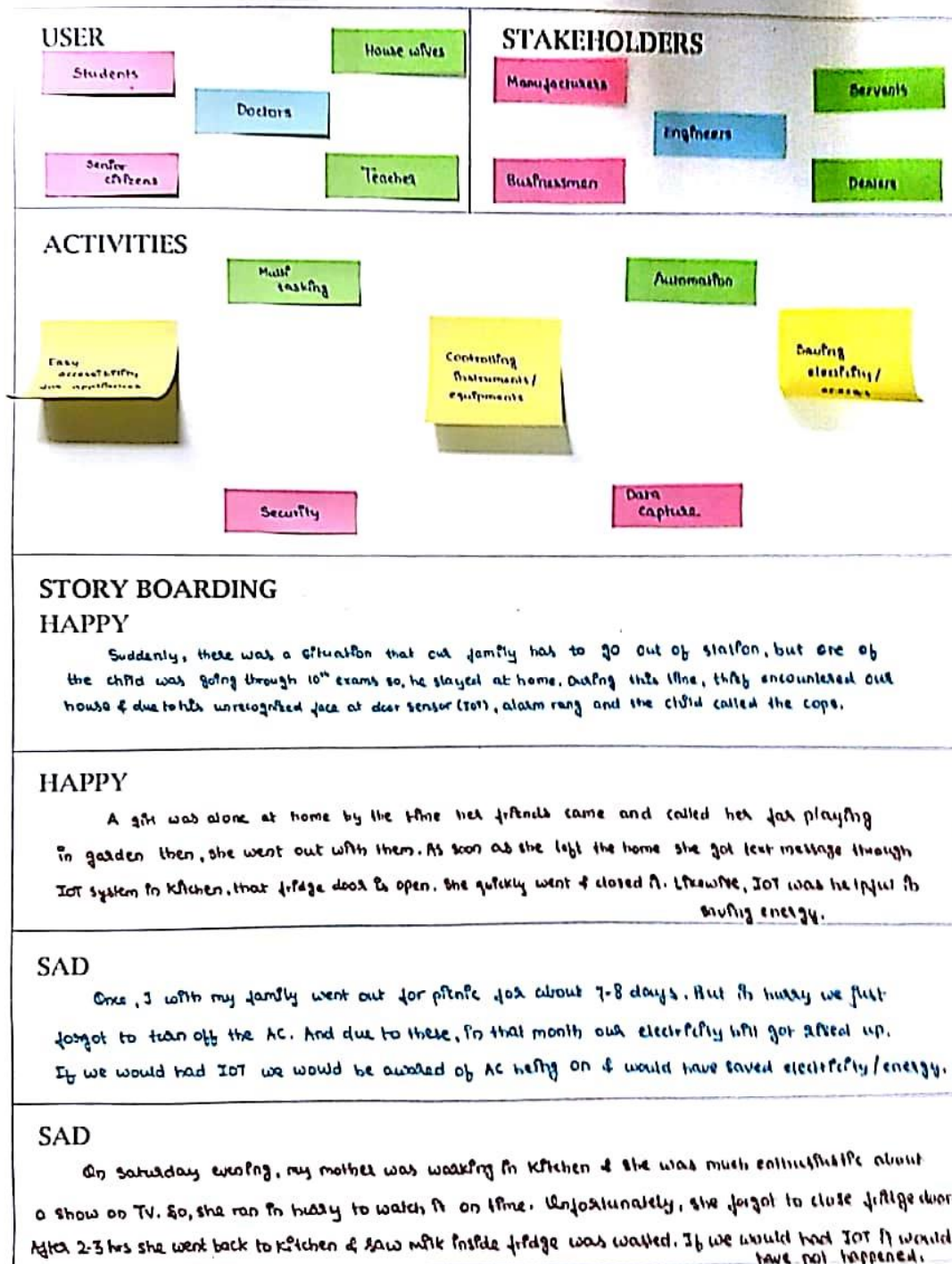- Controlling Appliances
- Saving Electricity

Design For

Date

Design By

Version

USER

Students

Doctors

House wives

Senior citizens

Teacher

STAKEHOLDERS

Manufacturers

Engineers

Businessmen

Servants

Dealers

ACTIVITIES

Multi tasking

Easy accessability, ... applications

Controlling instruments/ equipments

Automation

Saving electricity/ errors

Security

Data capture.

STORY BOARDING

HAPPY

Suddenly, there was a situation that our family has to go out of station, but one of the child was going through 10th exams so, he stayed at home. During this time, thief encountered our house & due to his unrecognised face at door sensor (IoT), alarm rang and the child called the cops.

HAPPY

A girl was alone at home by the time her friends came and called her for playing in garden then, she went out with them. As soon as she left the home she got text message through IoT system in kitchen, that fridge door is open. She quickly went & closed it. Likewise, IoT was helpful in saving energy.

SAD

Once, I with my family went out for picnic for about 7-8 days. But in hurry we just forgot to turn off the AC. And due to these, in that month our electricity bill got speed up. If we would had IoT we would be availed of AC being on & would have saved electricity/energy.

SAD

On saturday evening, my mother was working in kitchen & she was much enthusiastic about a show on TV. So, she ran in hurry to watch it on time. Unfortunately, she forgot to close fridge door. After 2-3 hrs she went back to kitchen & saw milk inside fridge was wasted. If we would had IoT it would have not happened.

4. Ideation Canvas

We have described activities of people, situation and location and the problems which they face. This canvas is very helpful to reach near goal as it helped us to know the areas on which we need to focus.

4.1. People

- Senior Citizens
- House Wives
- Businessmen
- Engineers
- Students
- Teachers
- Doctors

4.2. Activities

- Local Sensing
- Data Capture
- Home Security
- Automation
- Home Security
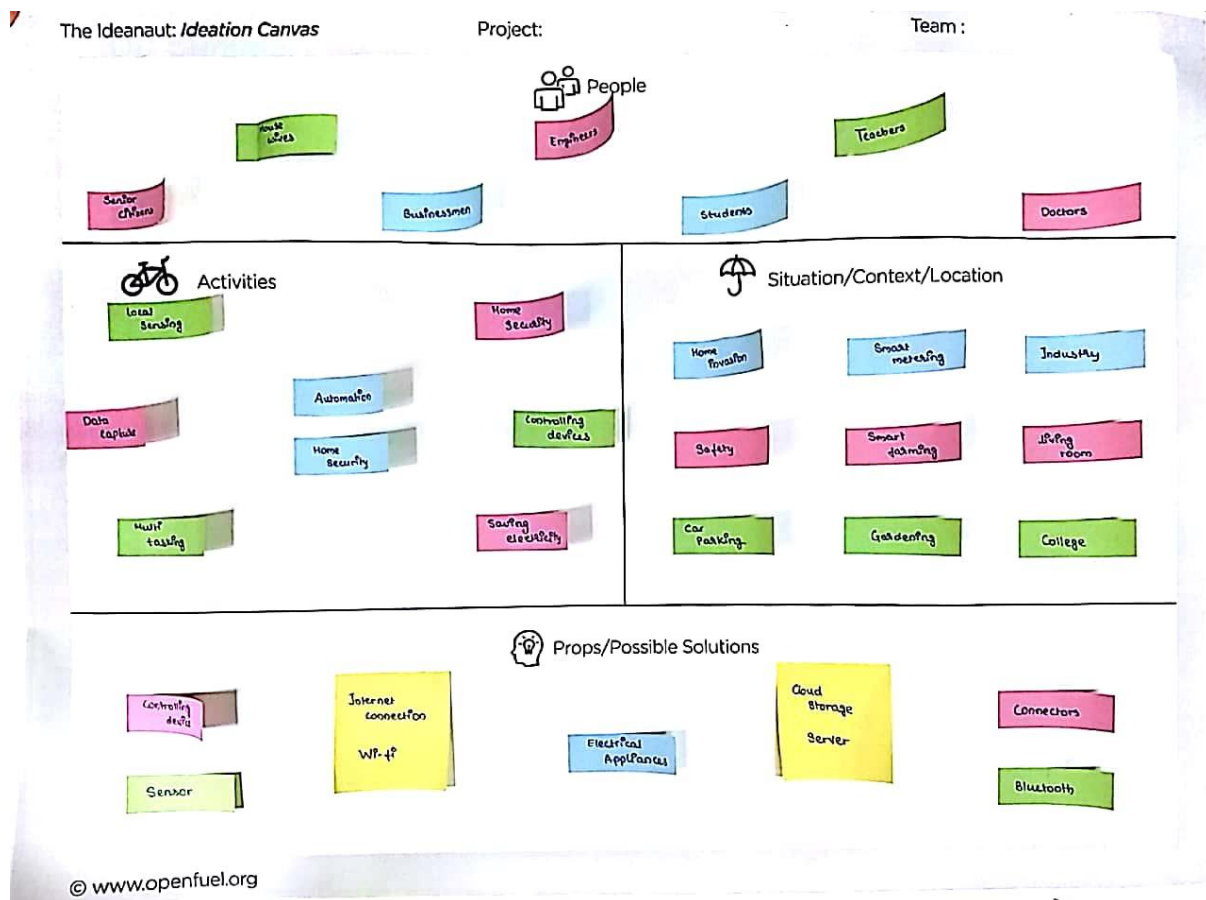- Controlling Devices
- Saving Electricity
- Multi-Tasking

4.3. Situation/Context/Location

- Home Invasion
- Safety
- Car Parking
- Smart Metering
- Smart Farming
- Gardening
- Industry

- Living room
- College

4.4. Props/Possible Solution

- Controlling Devices
- Sensor
- Internet Connection
- Wi-Fi
- Electrical Appliances
- Cloud Storage
- Server
- Connectors
- Bluetooth

5. Product Development Canvas

This Canvas is helpful to understand the purpose, product experience and function of our project.

5.1. Purpose

- Easy Handling
- Automation
- Smart Metering
- Energy Saving

5.2. People

- House Wives
- Senior Citizens
- Students
- Engineers
- Doctors

5.3. Product Function

- Manages Range of Devices: As every component is connected to the Internet.
- Environmental Monitoring: Can be implemented using Cameras.
- Stores Personal Data: 24x7 data capture.
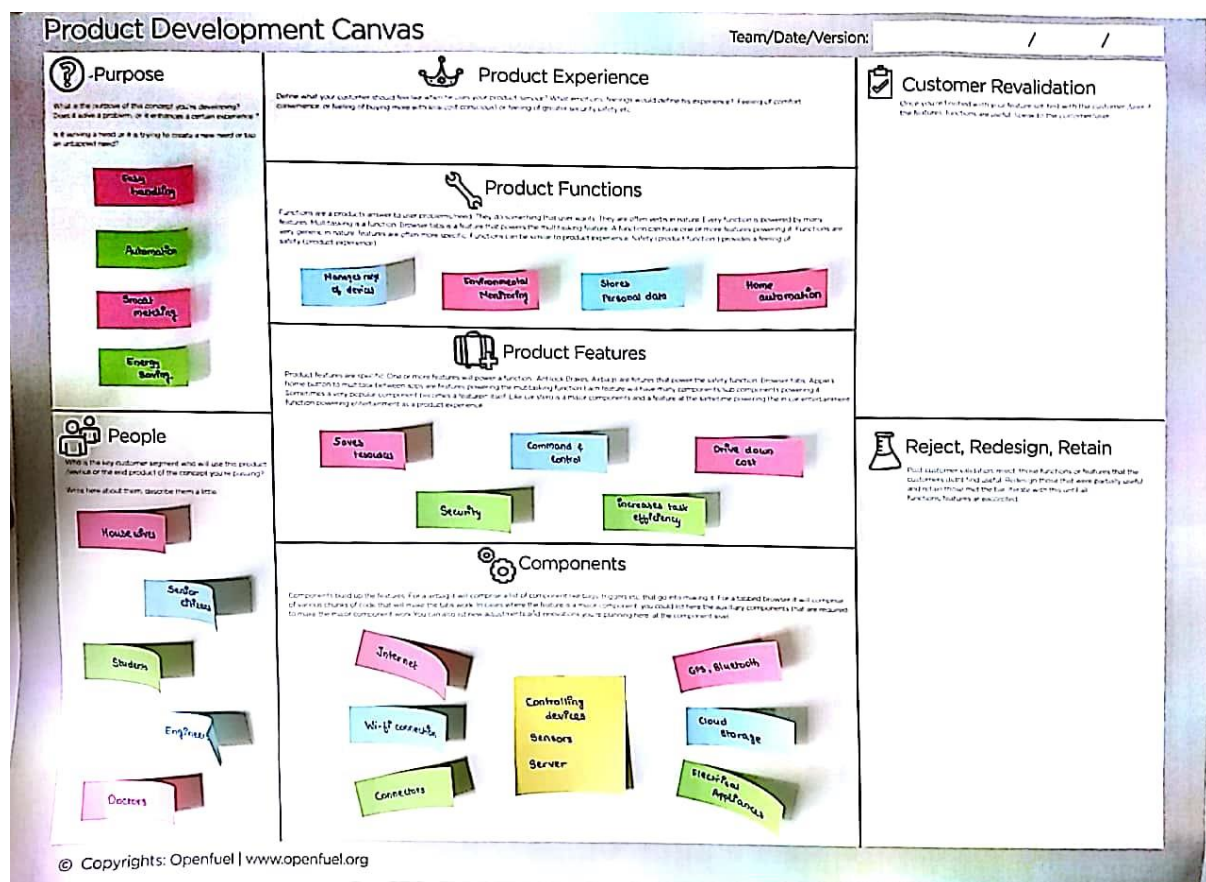- Home Automation: Useful for Senior Citizens.

5.4. Product features

- Saves Resources: Reduces Resources wastage.
- Security: Prevent unauthorized access to main doors.
- Command & Control: Overall control in your hands.
- Increases Task Efficiency: By the use of algorithms.
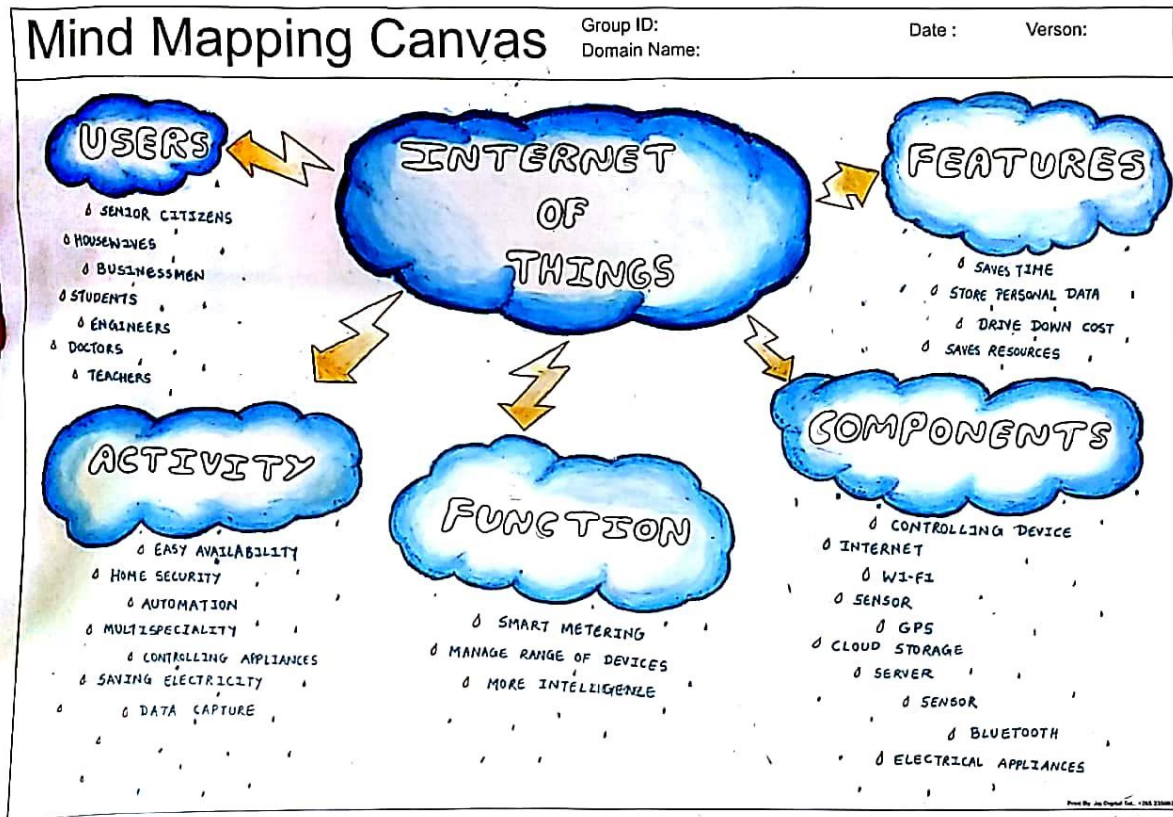- Drives down Costs: Smart Metering.

5.5. Components

- Controlling Devices

- Sensors

- Server

- Internet

- Wi-Fi Connection

- Connectors

- GPS, Bluetooth

- Cloud Storage

- Electrical Appliances

6. Mind Mapping

Mind Mapping Canvas

Group ID:
Domain Name:

Date:
Verson:

INTERNET OF THINGS

USERS
- SENIOR CITIZENS
- HOUSEWIVES
- BUSINESSMEN
- STUDENTS
- ENGINEERS
- DOCTORS
- TEACHERS

FEATURES
- SAVES TIME
- STORE PERSONAL DATA
- DRIVE DOWN COST
- SAVES RESOURCES

ACTIVITY
- EASY AVAILABILITY
- HOME SECURITY
- AUTOMATION
- MULTISPECIALITY
- CONTROLLING APPLIANCES
- SAVING ELECTRICITY
- DATA CAPTURE

FUNCTION
- SMART METERING
- MANAGE RANGE OF DEVICES
- MORE INTELLIGENLE

COMPONENTS
- CONTROLLING DEVICE
- INTERNET
- WI-FI
- SENSOR
- GPS
- CLOUD STORAGE
- SERVER
- SENSOR
- BLUETOOTH
- ELECTRICAL APPLIANCES

There are 5 features in the Mind Mapping Canvas.

- Users
- Activity
- Function
- Features
- Components