Smart Parking: *Innovation that Excites…*

CENG-322

Deliverable 1

Team name: F.R.I.E.N.D.S.& CO.

Project: Smart Parking

Members:

Ramesh Narayan Gaire – N01452430

Roshan Shrestha – N01457532

Rushi Bhandari – N01464259

Komal Bamotra – N01426087

FINAL DOCUMENT LAYOUT

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Team Contract:

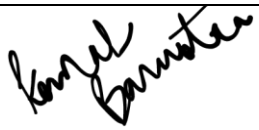
[Company Name]- F.R.I.E.N.D.S & CO.
[Project Name]- Smart Parking

Please negotiate, sign, scan and include as the first section in your Deliverable 1.

Please note that if cheating is discovered in a group assignment each member will be charged with a cheating offense regardless of their involvement in the offense. Each member will receive the appropriate sanction based on their individual academic honesty history.

Please ensure that you understand the importance of academic honesty. Each member of the group is responsible to ensure the academic integrity of all of the submitted work, not just their own part. Placing your name on a submission indicates that you take responsibility for its content.

For further information read Academic Honesty Policy on https://humber.ca/legal-and-risk-management/policies/search-by-students.html.

Team Member Names (Please Print)	Signatures	Student ID
Project Leader: Ramesh Narayan Gaire		N01452430
Roshan Shrestha		N01457532
Rushi Bhandari		N01464259
Komal Bamotra		N01426087

By signing this contract, we acknowledge having read the Humber Academic Honesty Policy as per the link below.

https://academic-regulations.humber.ca/2018-2019/17.0-ACADEMIC-MISCONDUCT

Responsibilities of the Project Leader include:

- Assigning tasks to other team members, including self, in a fair and equitable manner.
- Ensuring work is completed with accuracy, completeness and timeliness.
- Planning for task completion to ensure timelines are met
- Any other duties as deemed necessary for project completion

What we will do if . . .

Scenario	**Accepted initials**	**We agree to do the following**
Team member does not deliver component on time due to severe illness or extreme personal problem	RG RS RB KB	a) Team absorbs workload temporarily equally. d) Other: Also, we will give some time to the team member if we think that the problem is genuine.
Team member cannot deliver component on time due to lack of ability	RG RS RB KB	a) Team reassigns component __ b) Team helps member if he/she faces any problem to deliver the component. b) Team "fires" team member by not permitting his/her name on submission d) Other:

Scenario	Accepted initials	We agree to do the following
Team member does not deliver component on time due to lack of effort	RG RS RB KB	a) Team absorbs workload and gives a new deadline to the member to complete the work b) Team "fires" team member by not permitting his/her name on submission- YES c) Other:
Team member does not attend team meeting	RG RS RB KB	a) Team proceeds without him/her and will assign work to the absent member through email or text. b) Team doesn't proceed and records team member's absence __ c) Team proceeds for that meeting but "fires" member after __ occurrences __
An unforeseen constraint occurs after the deliverable has been allocated and scheduled (a surprise test or assignment)	RG RS RB KB	a) Team meets and reschedules deliverable __ b) Team will cope with constraint and try to solve the surprise test or assignment c) Other:

Scenario	Accepted initials	We agree to do the following
Team cannot achieve consensus leaving one member feeling "railroaded", "ignored", or "frustrated" with a decision which affects all parties	RG RS RB KB	a) Team agrees to abide by majority vote __ b) Team flips coin to come to a decision c) Other:
Team members do not share expectations for grade desired	RG RS RB KB	a) Team will elect one person as "standards-bearer" who has the right to ask that work be redone __ b) Team votes on each submission's quality to ensure an appropriate file is submitted c) Team will ask for individual marking and will identify sections by author __ d) Other:
Team member behaves in an unprofessional manner by being rude or uncooperative	RG RS RB KB	a) Team attempts to resolve the issue by airing the problem at team meeting and make sure that next time the behavior is not repeated b) Team ignores behavior __ c) Team agrees to avoid use of all vocabulary inappropriate to the business setting __ d) Team fires the team member.

Scenario	Accepted initials	We agree to do the following
Team member assumes or requests that his/her name be signed to a submission but has not participated in production of the deliverable	RG RS RB KB	a) Team agrees that this is cheating and is unethical __ b) Friends are friends and should help each other __ c) That person name will not be put on the submission as the work was not delivered when it was required.
There is a dominant team member who is content to make all decisions on the team's behalf leaving some team members feeling like subordinates rather than equal members	RG RS RB KB	a) Team will actively solicit consensus on all decisions which affect project direction by asking for each member's decision and vote __ b) Team will express subordination feelings and attempt to resolve issue in the team meeting and the decisions will be made by everyone's vote c) Other:
Team has a member who refuses to participate in decision making but complains to others that s/he wasn't consulted	RG RS RB KB	a) Team forces decision sharing by routinely voting on all issues __ b) Team routinely checks with each other about perceived roles so that there is no issues in the decision making as well as the project.

Scenario	Accepted initials	We agree to do the following
		c) Team discusses the matter at team meeting __

Member participated

Signatures:

Ramesh Narayan Gaire

Roshan Shrestha

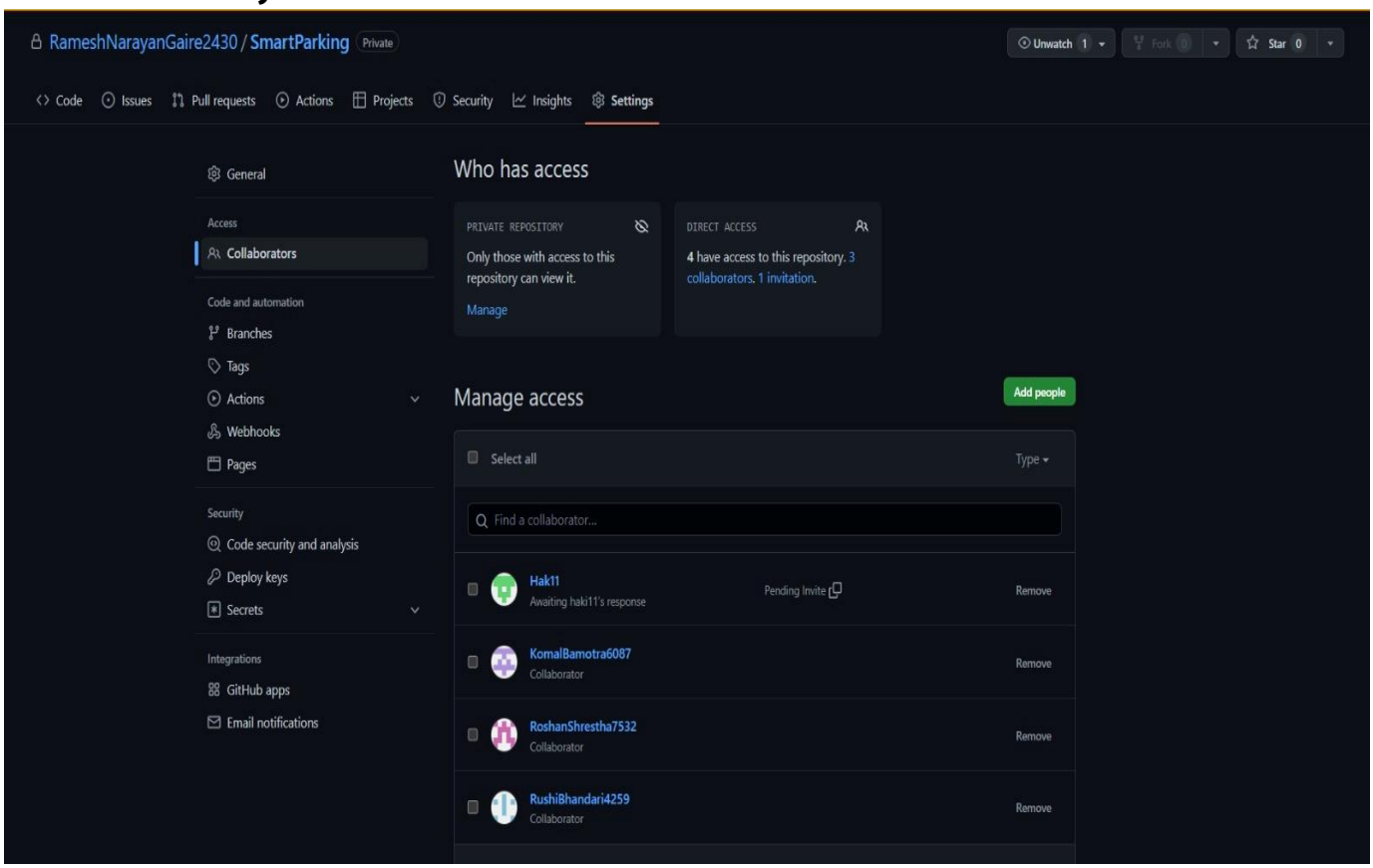
Rushi Bhandari

Komal Bamotra

GitHub Repository

https://github.com/RameshNarayanGaire2430/SmartParking.git

Screenshot of Github invitation:



Project Background and Description:

1. Describe the project goals and final vision.

Complex solutions can now be integrated effortlessly into frameworks and procedures for urban administration and management thanks to the maturation of the Internet of Things (IoT). The availability of parking in cities is becoming a problem for all of the residents due to rising car ownership rates. The creation of a smart parking application based on the Internet of Things (IoT) that gives drivers and parking managers important data about open parking spaces and related services like reservations and availability estimation.

2. Describe the software aspect and hardware.

Smart parking development implies an IoT-based system that sends data about free and occupied parking places via mobile application. The IoT-device, including sensors and microcontrollers, is in each parking place. The user receives a live update about the availability of all parking spaces and selects the best one.
Software: Android Studio to complete the design and coding part.
Hardware: Raspberry Pi Kit, ESP8266 microcontroller, HC-SR04 distance measurement sensor

3. Describe the screen flows.

The three components of the system are: On-field Network, Mobile Application Platform, and User Side Platform. Parking lot occupancy is determined by the on-field network of vehicle detection sensors. Then, the sensor data is sent to the mobile app, allowing the user to observe the availability of space. Next, any user may quickly view the parking lot status of a specific parking location on the User Side Platform and decide whether to reserve the open space.

4. How will you Incorporate the feedback provided through the interview.

Undoubtedly, we will consider any recommendations favourably in order to improve our venture and provide users with a nice experience when using our service.

5. Demonstrate how you are planning to satisfy to read / write from the DB which is hosted on the cloud.

We intend to describe the real-time components of the issues people have encountered recently in order to satisfy the users. The information will be given to the users so that they can understand the idea we are providing them about our service. For instance, since most people like holding own cars, which is strongly established in many of us' daily routines, the difficulty of parking is especially crucial. This makes looking for a parking space in congested cities and towns a difficult task that wastes time and consumes gasoline unnecessarily.

Project Scope:

Describe the technical scope of the project by talking about the project plan, and how you will know when the project is complete.

In a nutshell, Smart Parking is a type of parking solution that will incorporate cameras, counting sensors, or in-ground Smart Parking sensors with a raspberry pi kit. These gadgets are typically placed adjacent to or implanted into parking spaces to determine if they are empty or occupied. These sensors will directly detect the useful information to the user side mobile application. As a result of which, they can easily find and reserve a parking slot.

To complete this purpose, we are planning to do the following things:

- One stand-up in a day every morning to assign and assess the tasks given to the members.
- Rectifying errors and updating the project gradually
- The tasks will be given to members individually to complete in a day or two depending upon the task.
- Though we are planning to complete the project in a less complicated way so there will be less burden on every member

2. **Write Minimum of 1 theme (two epics, and 3 stories for each epic).**

Theme: Check the space availability and reserve to park vehicles in a building.

Epic 1: Use a mobile app to provide a variety of parking slots for users as a better experience

Story:

- The project is an application that can be used in the real world and is compatible with all parking management systems.
- The sensors can determine whether a space is empty.
- The responsible party will be informed about the space available for parking their vehicle

Task 1: We will build an app to give idea about the parking space availability.

Task 2: We will adjust the proximity sensors in accordance with the number of parking spaces.

Task 3: Also, we will design the app to be easily accessed by the user.

Epic 2: User is given a choice on the mobile app to reserve their space beforehand

Story 2:

- Nowadays, getting a parking space available in advance is very important in this fast-paced life.
- This project also provides the users to reserve the parking space available in beforehand to save their time to complete their other important work.

- This can be helpful for businesses and organizations that need to guarantee a spot for their employees or customers.

Task 1: App will support users to reserve the selected parking lot and get an access code

Task 2: The application will give a choice to the employees or customers to reserve their space if the slot is empty.