UCT KNOWLEDGE CO-OP

Business Case

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TEAM BALCONY
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Plagiarism Declaration

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Declaration

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2. I have used the APA convention for citation and referencing. Each contribution to, and quotation in, this publication..... from the work(s) of other people has been attributed, and has been clearly cited and referenced.
3. This publication..... .....is my own work.
4. I have not allowed, and will not allow, anyone to copy our work with the intention of passing it off as his or her own work.
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Signature: Taboka Velempini, Rahul Marajh, Ashil Ramjee, Gustavo Amicis Date 03/05/19

Full Name of Student: Taboka Velempini, Rahul Marajh, Ashil Ramjee, Gustavo Amicis

1. Background

The Observatory Civic Centre is a recreational and community centre which was originally run by a group of volunteer Observatory residents who made up the Executive Board of the Centre. In 2011 The City of Cape Town and the Observatory Civic Centre signed a Memorandum of Agreement which legally stated that The City of Cape Town would officially manage the facility from the agreement date onwards. However, The City of Cape Town requested for the Community Centre to be run by a body of elected individuals comprised of those who lived or worked in Observatory. The Observatory Civic Centre that is situated in the heart of Observatory would like to better address problems which the Business Community, Resident Community, and the Tourism Community collectively face. The Civic Centre is aware that necessary investments into resources and systems are essential to ensure that Observatorians, as well as The Civic Centre's opportunities, are realized, and problems are mitigated thus Team Balcony will devise plausible solutions to mitigate traffic congestion primarily parking related issues in Observatory. It is apparent that the current parking system and policies which govern the parking regulations in Observatory have a negative impact on the flow of traffic in Observatory, primarily in narrower roads with high traffic such as Main Road and Lower Main Road. The recommended solution should aim to solve problems such as: To reduce the traffic congestion in Observatory, to create a better system which monitors and updates the information of residents, to increase the revenue and reduce the operational costs of the Observatory Civic Centre's Traffic Department, to ensure that the traffic solutions comply with The City of Cape Town's Traffic Laws and Regulations.

2. Problem Definition

With the above-mentioned problems, it is clear that Observatory needs a new parking system which will not only minimise the traffic congestion but will also enforce parking guidelines which can be universalised across the suburb.

Observatory has been deemed as a development area and with many new establishments being built daily, it has become even more apparent that the suburb faces parking shortages as large influxes of new residents enter the area and are forced to street park due to limited parking bays in the newly built developments. Additional to the parking problems, The Civic Center informed the team that they lack a database to effectively store the information of residents who reside in Observatory; therefore, they are restricted as to how efficiently and quickly they can pass new laws due to a limited residential buy-in.

The Observatory Civic Center has brought forward the problem of traffic congestion in Observatory to a team of four third-year Information Systems students. The team has noted that heavily used roads such as Main Road and Lower Main Road experience high traffic congestion during peak hour periods as individuals commute to Muizenburg, Wynberg and City Centre due to many individuals parking on the side of the roads (street parking).

3. Business Objectives

3.1 Goal

The Observatory Civic Centre's goal is to acquire a new system which is both efficient and ensures that the residents of Observatory are satisfied. The new system should ensure that traffic congestion in Observatory is alleviated and promote better methods to monitor how the new system has affected the manner in which parking is handled in Observatory. Thus, specific objectives need to be met in order to ensure that the new system minimizes The Observatory Civic Centre's costs, mitigates their risks and maximises both their opportunities and benefits.

3.2 Objectives

Objective 1:

As previously mentioned, The Observatory Civic Centre has noted that there are high volumes of traffic congestion particularly on narrow roads such as Main Road and Lower Main Road. Therefore, an objective would be to create a parking system that ensures that fewer individuals park particularly in those two roads and should individuals park, there should be a parking system or policy that foresees who is permitted to park on those roads and how many vehicles are permitted to park on the roads at a given period of time. This change to the current manner in which parking is handled will ensure that those who use the respective roads to commute's level of satisfaction with traffic control in Observatory is increased as the process of both parking and handling traffic will be more efficient.

Objective 2:

As previously highlighted, The Observatory Civic Centre is an old facility that is managed by individuals who may not be equipped with the necessary skills to keep account of residents or monitor residents, Therefore, an objective is to create a database system which will automatically update with a resident's information once they sign-up.

Furthermore, this system will make the deployment of parking disks more efficient as the resident may simply update their details with their vehicle registration number and license disk to ensure that the parking disk is correctly linked to their profile. The database will be accessible via a web browser on their current domain which is useful as they will not incur additional costs for implementing and maintaining the database.

Objective 3:

To ensure that traffic congestion in Observatory is alleviated there will need to be a larger number of parking spots created in order to re-allocate a certain number of vehicles that would currently park on the roads to park in designated parking areas. Thus, an objective is for The Observatory Civic Centre to forge relationships with other shopping centres, restaurants or facilities which have parking bays. Ideally, those that use these various facilities will be provided with a coupon or discount for parking as an incentive to both use the facilities and to park in designated parking spots off the road. Realising this objective will not only be beneficial for the Civic Centre but it will also be beneficial for local businesses as they will increase their number of clients and possibly forge customer loyalties.

Objective 4:

As highlighted above, many individuals park on the road as there are not any clear guidelines that stipulate where individuals should park in Observatory. Therefore, an objective is to create laws and regulations which are governed by The Observatory Civic Centre's management (The City of Cape Town) to ensure that individuals are aware of what is required of them when parking in Observatory and that individuals are also aware that by not adhering to the rules and regulations that could possibly be fined or given a warning on behalf of The City of Cape Town's Traffic Department. To ensure that rules and regulations are adhered to, it is suggested that The Observatory Civic Centre introduces Parking Marshals equipped with Disk Scanners to oversee the parking in Observatory.

4. Assumptions and Constraints

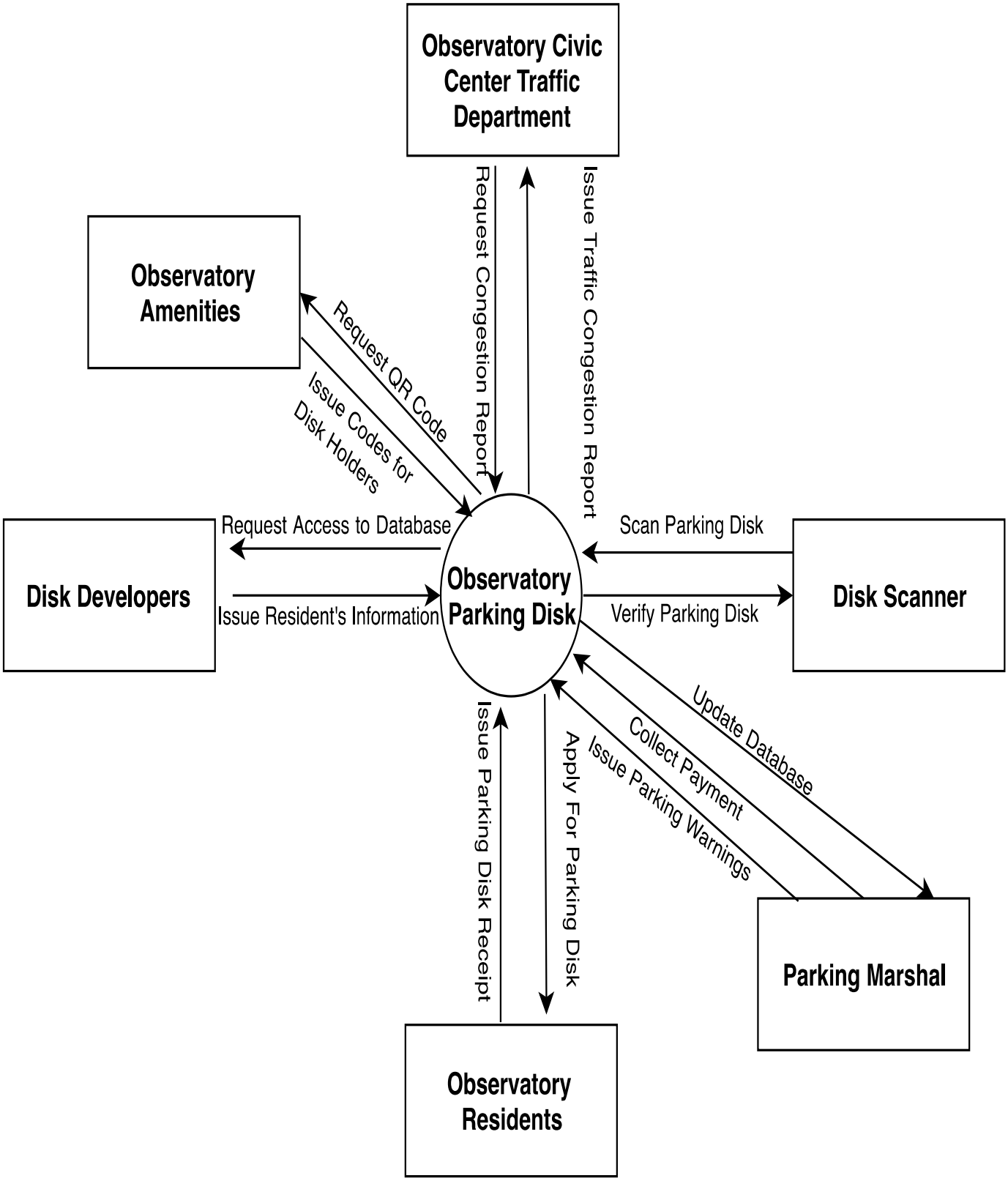
The following assumptions have been made:

- The project team has made an assumption that the Observatory Civic Centre will have the necessary funds to implement the recommended solution.
- The project team has assumed that due to The City of Cape Town managing the Civic Centre, they will approve of the proposed solutions and The Civic Centre's members will both approve of the recommend system and will adopt the recommended system.
- It is assumed that the demographic of Observatory residents and business owners who require a parking disk have access to the internet in order to provide their information which will be stored on The Observatory Civic Centre database.
- It is assumed that the Board of Executives for The Observatory Civic Centre have the necessary skills to be proficient in the skills required to use the recommended solution.

The following constraints are present:

- Contrary to the assumption made in point two, it is also important to note that a constraint is that The City of Cape Town's legislation may not favour the proposed system and thus the implementation of the new system may take long as The Observatory Civic Centre will need to appeal.
- The Observatory Civic Centre may not have personnel with the adequate skills to monitor and maintain the recommended system which will be a challenge when implementing the recommended solution.

5. Stakeholder Analysis



6. Solutions

Solution 1: (**Preferred**) Parking Disk

Solution 1 is the preferred solution. Solution 1 primarily aims to introduce a residential parking permit (disk) into the suburb of Observatory. The permit will allow individuals that live in Observatory to register their private vehicles electronically via an improved Observatory Civic Centre website interface. This interface will ensure that The Observatory Civic Centre is able to adequately capture the information and contact details of all its residents, thus ensuring that The Observatory Civic Centre's database has up-to-date information of residents as well as their respective vehicles. With this new system, The Observatory Civic Centre will be able to better monitor the demographics of those that cause the most traffic congestion, as to whether or not they are: Observatory Residents, Observatory Tourists or Observatory Businesses/Workers.

The introduction of residential parking permits will ensure that residents who pay an annual fee to acquire the parking permits will be given leeway as to how long they may park in specific areas. For example, should a parking area have a one-hour ban, residents may be permitted to park in that area for two hours. Furthermore, it is suggested that The Observatory Civic Centre partners with shopping centres or amenities in Observatory that have designated parking areas to provide exclusive access to permit holders that will allow them to park in the designated parking bays at a discounted rate. In conclusion, this new parking system will allow The Observatory Civic Centre to better introduce disciplinary actions to those that park in areas for extended periods of time by either issuing warnings or fines.

Solution 2: Observatory Civic Parkade

Solution 2 aims to provide reasonably priced and secure parking for residents and other demographics passing through Observatory. Essentially, implementation of an Observatory Civic parkade may begin once the civic has gained funds from previous projects and enough support from potential investors and stakeholders. The civic currently runs a relatively small car park in Observatory, therefore this plot may be considered as an option for the placement of the parkade.

The parkade will be operated just like any other parkades at malls with hourly rates. Parking machines will handle times and payment. An exclusive small yearly fee for parking will only be available for civic members. Non-civic members will be charged by the hourly rate. Friends and family of civic members will be able to receive heavily discounted hourly rates.

The images above show two ways of implementing the parkade. The 1st image shows a traditional parkade whereby it operates similarly to other parkades at malls. On the other hand, the 2nd images show a potential futuristic design which would be cheaper to implement. An advantage with the design in the 2nd image is that cars can be parked underground resulting in a more efficient use of space thus increasing income generated by the parkade.

To conclude, the implementation of an Observatory Civic Centre parkade will increase the funds coming into the civic and provide secure parking to residents. Additionally, traffic is addressed indirectly as residents and other demographics would be more inclined to have secure parking thus having fewer cars parked on the side of the road.

Solution 3: Personal Car Rental and Carpooling

Solution 3 aims to reduce the number of parked cars on the Observatory roads. One of the ways of doing this is by implementing a system where people can rent out their cars for a specific amount of time. The idea is that people park their cars on the road when they are home or at work, and the car stands for long periods of time. If there is a system in place where they can rent out their cars during that period, they know they will not be using it, then there will be fewer cars parked on the side of the roads, alleviating traffic. The different ways this can be implemented are, by creating an app or using an already existing app such as Turo. The Observatory Civic Centre could also create a page on their website and forum dedicated to this, where the owner of the car could advertise their car, hours and fee, and people could browse through it.

Another way of reducing the amount of traffic and parked cars on the Observatory roads during the day is to implement a car-pooling system. People going to the same location or returning to Observatory for the same location can all ride in one car instead of multiple, which would clear out some cars on the streets. This can be done by using the civics' website or forum, similarly to the car rental idea. There can be different pages for each of the different suburbs, where people from Observatory go to work. Then people can open the forums and search for other people who go to work at the same location and around the same time as them.

By implementing this solution, the traffic in Observatory will decrease as there will be fewer cars parking on the side of the road, and fewer cars driving in peak traffic. This solution is very technical, and the cost is not very high. The main risk with this solution is whether the residents will take it on and use the systems put in place.

1. Project Objectives

Project objectives can be described as measurable goals that need to be met and constantly monitored to measure the success of the project. Key performance indicators are used to measure the project's success such as if the budget of the project has been met, if the quality of the project has been met and if the project was completed on time.

In the context of the project Team Balcony will be measuring the following objectives:

Decrease Costs:

The Observatory Civic Centre would like to not only maintain their current costs incurred; however, the board of executives would also like to ensure that the proposed solution of the parking disk reduces The Observatory Civic Centre's cost incurred. For example, replacing parking marshals with electronic payment systems and parking disk scanners to decrease the number of manual labour costs would further decrease The Observatory Civic Centre's operational costs.

Improve Efficiency:

It is essential that the proposed parking disk solution alleviates the traffic congestion in Observatory, primarily on roads such as Main Road and Lower Main Road. Thus, by introducing a system which is implemented in conjunction with a set of rules and guidelines that will govern the parking system in Observatory, it is predicted that parking and traffic in Observatory will be handled more efficiently.

Increase Decision Automation:

The introduction of the parking disk system in Observatory should allow decision processes to be simplified. For example, those that do not adhere to the parking guidelines will be fined based on the following processes:

- A parking marshal will scan the car's licence disk to determine if the individual is a registered resident.
    - If the individual is a resident but does not have a disk, then they will be fined less than an individual who is not a resident and does not have a disk.

Increase Community Relationships:

The Observatory Civic Centre will increase its voice within The Civic Centre by implementing database which is to be implemented in conjunction with the parking disk solution. The database will ensure that registered residents are always kept informed and are included in the voting process of the new parking system. By ensuring that the community is kept in the communication loop, The Observatory Civic Centre will further strengthen their relationships within the community

Implement Risk Management:

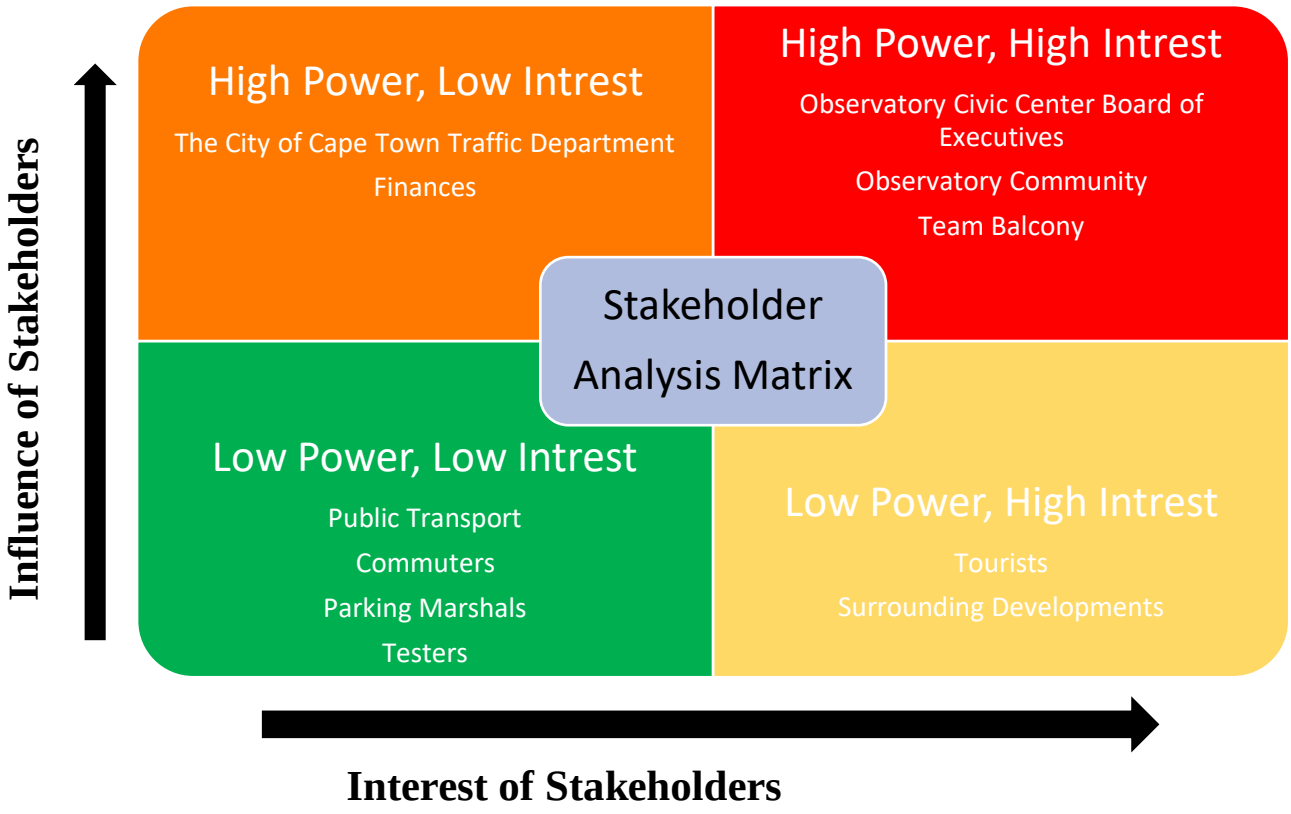
It is essential that The Observatory Civic Centre implements the parking disk solution in phases to ensure that risks that arise are effectively mitigated. Additionally, by performing risk management assessments, The Civic Centre will be well informed of risks that may negatively affect the implementation of the parking disk system. For example, having no-buy-in from the community on the introduction of the parking disks may pose as a risk and thus adequate actions need to be taken to alleviate these risks and maximise on the benefits of the parking disk implementation.

2. Stakeholder Analysis

The stakeholders that are involved in the analysing, designing, and implementation process Of the proposed parking disk system in observatory are as follows.

Stakeholder Name	Contact Details	Impact of project on Stakeholder	Stakeholder's influence on project	Role
Taboka Velempini	vlmtab001@myuct.ac.za	Medium-High	High	To design the proposed solution which is the implementation of a residential and commercial parking disk system in Observatory. Additionally, the individual developed the prototype of the potential parking disk which would be accompanied with the prototype of the electronic component of the solution.
Rahul Marajh	mrjrah001@myuct.ac.za	Medium-High	High	To analyse and research the environment in which the proposed solution would be implemented. To assess whether or not the proposed solution would benefit and alleviate the current traffic congestion problems being faced in Observatory.
Ashil Ramjee	rmjash002@myuct.ac.za	Medium-High	High	To test the online component of the proposed solution. Specifically, to test that the database efficiently captures and updates details of residents. To test that the solution allows an individual to register for a disk and that the individual is provided with an electronic receipt.
Gustavo Amicis	amcgus001@myuct.ac.za	Medium-High	High	To develop a prototype of the online component of the solution which should allow a resident to register their profile onto the observatory database and the solution should allow for and individuals to maintain or update their profile accordingly. Furthermore, the prototype should ensure that an individual is able to register their car for a parking disk.
Tauriq Jenkins & Eden Musampa	chairman@obs.org.za edenmusampa@gmail.com	High	High	To monitor the analysis, development and implementation process of the solutions and to select a recommended solution which should be implemented.
Observatory Community	N/A	High	High	To vote on whether or not the recommended solutions may be implemented.

Stakeholder Analysis Matrix:



Risk Management

1. The City of Cape Town Traffic Department refuses to adopt the parking disk proposal.
2. Observatory residents refuse to comply with the introduction of parking disks.
3. Observatory residents are not willing to share their personal information to the database.
4. The City of Cape Town Traffic Department requests for a majority of the funds raised from the implementation of the parking disk system.
5. There is a lack of individuals with the necessary skills to efficiently run and maintain the parking disk system.
6. There is a lack of individuals with the necessary skills needed to maintain the database.
7. Residents of observatory are not interested in joining The Observatory Civic Centre.
8. The Observatory Civic Centre does not have enough (vocal)power within the Observatory community to pass any new rules and regulations or to effectively negotiate with The Western Cape Government.
9. Observatory is highly populated by students who live in establishments such as Obs Square, Campus Key or Obs Court. Therefore, limited participation from the youth would be a risk.
10. The database is not implemented correctly and is subsequently not secure enough.
11. The introduction of parking disks does not adequately address the traffic congestion in Observatory.
12. The Civic Centre loses their lease for their existing parking bay therefore losing their only source of income to assist with the funding of the parking disk solution.
13. Load shedding and unforeseen circumstances.
14. Restaurants and other The Observatory Business Forum find the annual charges for the parking disk system expensive.
15. The parking disk system does not meet legal requirements.
16. Incoming legal cases against the civic.

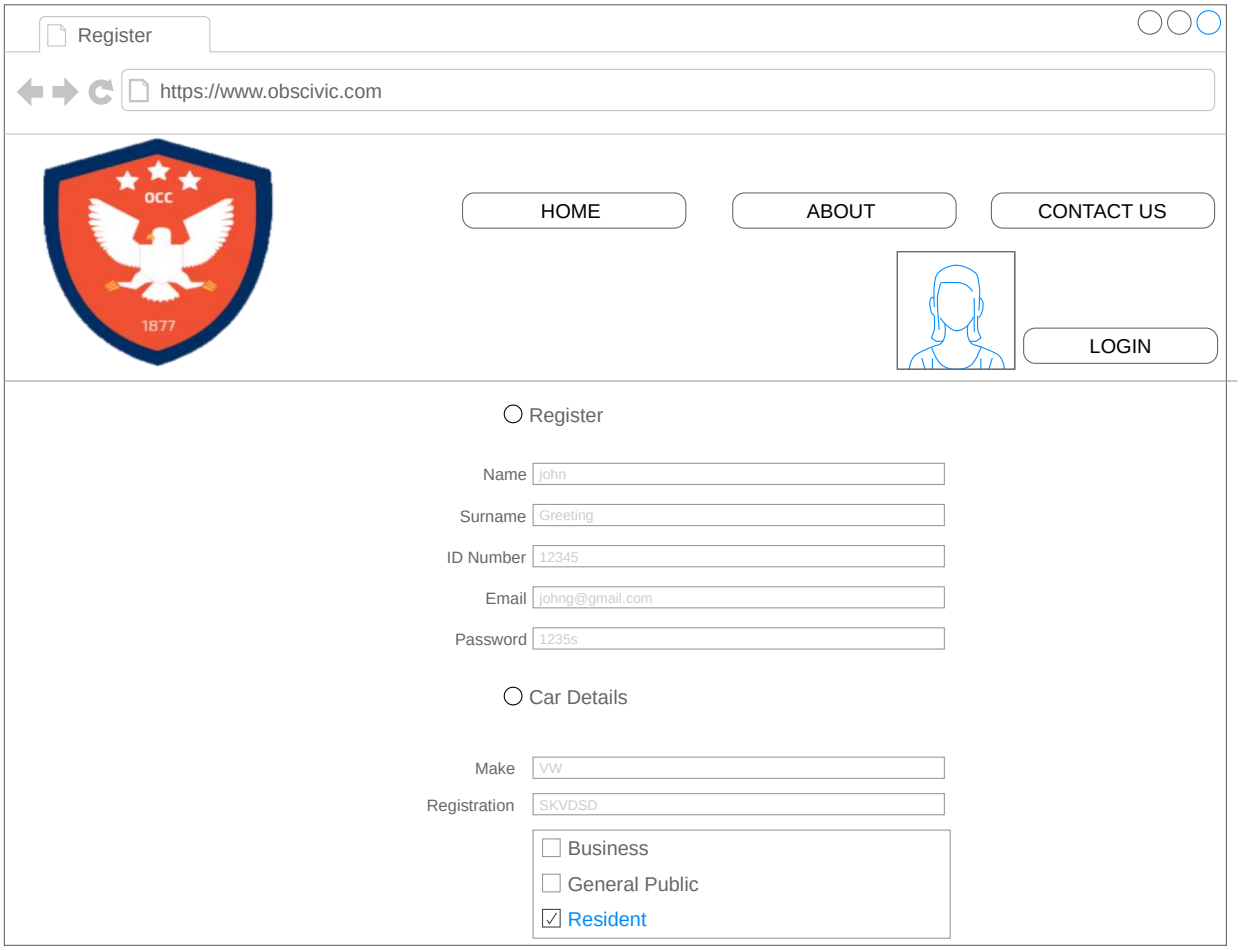
4. Prototyping & Testing

In order to depict our possible solution, we have created prototypes of the following components:

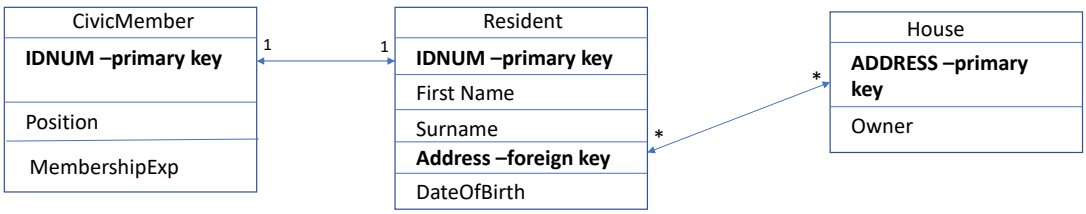
Parking Disk:
Our parking disk prototype clearly depicts the items required on each disk including the vehicles registration number, the unique parking disk number as well as a label showing which category the disk holder falls into. The disk holder may be a resident, business, or a general public member and each disk will have a unique colour corresponding with the disk holder category. Additional to the various colours for the disks, disks will be printed on Teslin paper with the Observatory Civic Centre's logo in the background to prevent any copyright or fraudulent disks.

Database:

In order to effectively capture each resident's details, a database on the current Observatory Civic Centre website will be created to store the information of each resident. Residents will be required to register by selecting the login button and registering as follows:

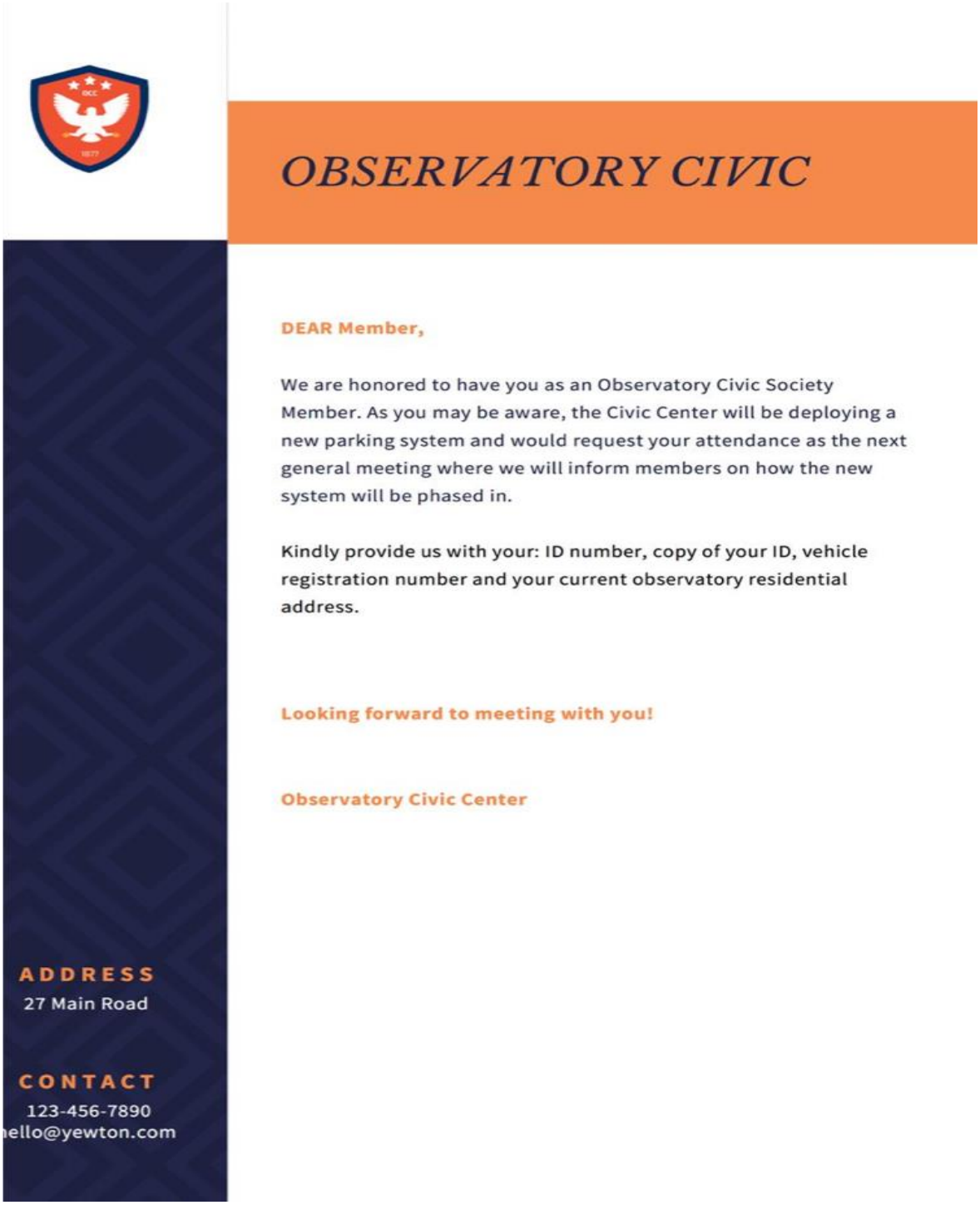


The database will be constructed using the following architecture:



Civic Centre Member Invitation:

Once members have joined The Civic Association, they will be notified on General Meetings pertaining to the implementation of the parking disks. It is essential that The Civic Centre builds positive relationships with its members in order to pass new systems such as the parking disk. An example of an invitation will be as follows:



OBSERVATORY CIVIC

DEAR Member,

We are honored to have you as an Observatory Civic Society Member. As you may be aware, the Civic Center will be deploying a new parking system and would request your attendance as the next general meeting where we will inform members on how the new system will be phased in.

Kindly provide us with your: ID number, copy of your ID, vehicle registration number and your current observatory residential address.

Looking forward to meeting with you!

Observatory Civic Center

ADDRESS
27 Main Road

CONTACT
123-456-7890
ello@yewton.com

5. Outputs/Exhibits

Several outputs were produced in the duration of the project. These include emails, a project poster, summary of a few personal interviews, notes from the course workshops, meeting minutes and screenshots of a WhatsApp chat relating to the project. In addition, there a few images illustrating the ongoing traffic problem on a few roads in Observatory. These outputs were used to pave the way forward when constructing the solutions and deciding which solution was most viable with regards to the civics limited resources.

All outputs and exhibits from the projct are as follows:

Interviews by

TEAM BALCONY

PARKING

TRAFFIC CONGESTION

QUESTIONS

The most frequent answers will be shown

1. Do you have a car and if so where do you frequently park?

YES, FREQUENTLY PARALLEL PARK
OUTSIDE RESTAURANTS AND SHOPPING CENTERS.

2. Do you feel that as a resident your car is safe when parked outside?

MOST OF THE TIME THERE IS SECURITY PATROLLING RESIDENTIAL AREAS.

3. Do you work in Observatory particularly on Main or Lower Main Road?

NO, BUT I COMMUTE FROM NEAR BY SUBURBS SUCH AS TOWN OR WYNBERG. MOST OF THE TIME I NEEDS TO LEAVE EARLY TO FIND PARKING NEAR BY BECAUSE MOST PARK IN OBS AND COMMUTE VIA THE TRAIN TAKING ALL THE PARKING

QUESTIONS

The most frequent answers will be shown

4. Do you think that parking disks will alleviate the traffic congestion?

POSSIBLY TRAFFIC DISKS MAY ASSIST BUT THEY WOULD ALSO NEED TO INFORM THOSE THAT PARK AND COMMUTE ETC OF THE NEW GUIDELINES

5. Have you hear about the Obs Civic?

NO, THEY HAVE NEVER ADVERTISED OR HELD AGMS THAT I AM AWARE OF.

PARKING ON MAIN ROAD IS FULL NOW I NEED TO PARK A BLOCK AWAY AND WALK

Taboka Velempini
Rahul Marajh
Ashil Ramjee
Gustavo Amicis

THE PROBLEM

THE OBSERVATORY CIVIC CENTER

A VOLUNTEER GROUP TRYING TO ALLEVIATE PARKING IN OBSERVATORY

LACK OF PARKING GUIDELINES

HEAVY CONGESTION ON NARROW ROADS LIKE LOWER MAIN AND MAIN ROAD

LIMITED REVENUE AND FINANCAIL SUPPORT FROM THE CITY OF CAPE TOWN

DON'T HAVE A DATABASE TO MONITOR AND UPDATE THEIR MEMBER'S DETAILS

NEW DEVELOPMENTS ARE NOT ALLOCATING ENOUGH PARKING BAYS FOR THE INFLUX OF NEW RESIDENTS

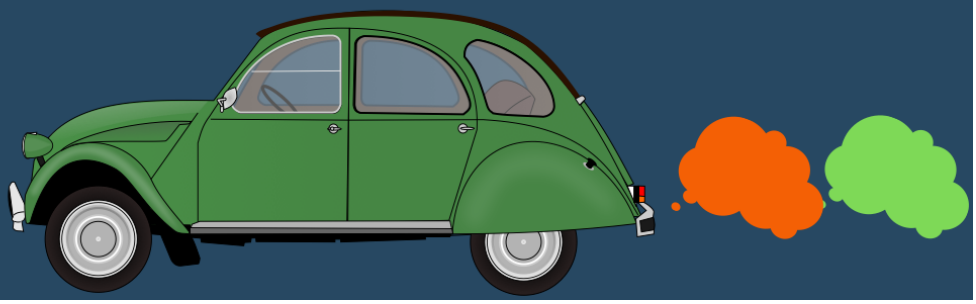
THE SOLUTION

CREATE A RESIDENT DATABASE & EXPAND COMMUNITY RELATIONSHIPS

IMPLEMENT PARKING DISK PERMITS AND LOAD VEHICLES ONTO THE DATABASE

WORK IN CONJUNCTION WITH THE CITY OF CAPE TOWN TO CREATE NEW PARKING GUIDELINES

PARTNER WITH SHOPPING CENTERS AND RESTURANTS TO PROVIDE DISK MEMBERS WITH PARKING DISCOUNTS



6. Challenges and Limitations

Challenges:

There were many challenges which we expected to face when it comes to the actual implementation of our parking disk solution.

Some of these challenges include:

- Securing exclusive areas for members with the parking disks to park.
- Informing traffic officials of the new updated rules and regulations regarding the parking.
- Controlling the vehicles without disks and ensuring that they do not continue to park on the road.
- Maintaining and updating the database to ensure that member information is always up to date.
- Convincing the residents of Observatory to implement get the parking disk system.
- Forming partnerships and relationships with shop owners to subsidize the parking fees.
- Securing finances to fund the project.

Limitations:

The limitations which we faced were from the influence and power that the Observatory Civic possessed to implement our proposed solutions.

These limitations were:

- The Civic does not have access to a large amount of money so they may not have enough to fund the project.
- At the moment, the Civic does not have a large following so they may not be able to secure exclusive parking bays.
- The proposed solution is only effective if most people purchase and make use of the parking disk.
- After hours, exclusive parking may not be possible.
- Members have to pay for a new disk every year.
- Members with the disk may not always park in the exclusive parking and may choose to park on the roads, thus making the solution redundant