

# Sioux Parking Application

A parking and appointment system for Sioux, where arriving visitors are assigned a parking spot, and both them and the attendees from sioux are notified about their appointment.

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## Impact on society

What impact is expected from your technology?

### What is exactly the problem? Is it really a problem? Are you sure?

The secretary of the company often needs to accompany and call people in the company whenever a visitor arrives. This takes time off his hands, which he can use to do other more important work. Our technology aims to reduce this loss of productivity, by automating this part of the process. It also solves another problem: their parking lot is limited in size. Whenever a visitor arrives, they can not be sure if there is an available visitors-only parking spot. Our technology will keep track of parking spots, and notify visitors where they can park when they arrive.

### Are you sure that this technology is solving the RIGHT problem?

Our application's main goal is to make the work of the assistants within the company easier, by automating the more tedious tasks. This app specifically automates notifying people through text messages, meaning the assistant has more time to work on what he must.

### How is this technology going to solve the problem?

By storing the contact info of the people attending meeting, we can make an automated notification system to send messages to visitors of the company on where to park, so that they do not require the assistance of an employee; and we can also notify the organizers of the meetings at Sioux that the attendees of the meeting have arrived, allowing them to welcome them directly instead of making it the assistant's job.

### What negative effects do you expect from this technology?

If the workload of assistants decreases, they might be made to do more than they previously had. Some people might not look at the notifications and they might end up confused and end up asking for help, meaning that our solution does not always work, assistants might end up working more as a result.

### In what way is this technology contributing to a world you want to live in?

Our application makes a slight contribution, if the world we want to live in is one where most menial tasks are automated, improving everybody's lives.

**Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.**

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We only intended the app to handle notifying visitors on which parking lot to use and organizers on when their guests arrive. But since we must store meetings and contact info, we make people schedule meetings twice, one official and one for the notification system. A future iteration of our technology could be integrated with Microsoft Teams or whatever scheduling application the company uses.

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## Hateful and criminal actors

What can bad actors do with your technology?

### **In which way can the technology be used to break the law or avoid the consequences of breaking the law?**

The most obvious part is that the stored personal data could be leaked by the secretary or system administrator, or they could be hacked. This would mean a lot of personal data would be available to the general public.

### **Can fakers, thieves or scammers abuse the technology?**

Yes. If accessed by thieves, the technology can be used to find out personal data from visitors and management at Sioux.

### **Can the technology be used against certain (ethnic) groups or (social) classes?**

Basically, no. This technology does not differentiate in ethnic or social groups. It is used in Sioux only and will only be used in their work climate, which can contain any ethnic or social group. It will not discriminate against any of them.

### **In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.**

As answered before, this can not happen, as the technology is purely a tool to help people work.

### **How could bad actors use this technology to subvert or attack the truth?**

It can not.

### **Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.**

More secure access to the application. We already have a login system, but in a future iteration, authentication would be a point of improvement

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## Privacy

Are you considering the privacy & personal data of the users of your technology?

### **Does the technology register personal data? If yes, what personal data?**

Yes. We register name, phone number, email, license plates.

### **Do you think the technology invades the privacy of the stakeholders? If yes, in what way?**

As far were concerned, our technology does not invade the persons privacy. In our opinion thats the case, because there is no unreasonable intrusion upon seclusion of another person. Also there is no unreasonable publicity given to the others private life and as for last, only access is through either an administrator, manager or a secretary. Thus, the others personal information is not unreasonably put in a false light before the public.

### **Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?**

Yes, it is. Wed love to share why our technology compliant or will be. First of all, as said earlier our technology is access limited. In other terms, only a manager, an administrator or a secretary has access to the technology. Were storing personal data within a secured database, so there are no manual operations going on which is unsecure (since there is no protection layer above the data whatsoever). Also were planning to audit user access in the near future whoever access certain data within our database. Moreover, were protecting certain user related information by using algorithms to protect their sensitive information such as a password.

### **Does the technology mitigate privacy and data protection risks/ concerns (privacy by design)? Please indicate how.**

We think so, yes. The reason for that is, because first of all weve limited access to the technology and as for the second, data is being stored within a secure storage solution. In addition, were only collecting data that we really need and nothing more or else.

### **In which way can you imagine a future impact of the collection of personal data?**

Our technology will be designed to not hold long-term personal user based information and will be wiped out after a certain of time in order to be GDPR compliant. Also it is unnecessary to keep all the data for long-term, since thats not really needed for making our technology work.

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**Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.**

Future improvements we had in mind are:

Audit user access to personal data

Limit access even more to only secretary and administrator

A specific dashboard for the administrator for an overview of user access and to keep track of possible privacy related intrusion.

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## Human values

How does the technology affect your human values?

### How is the identity of the (intended) users affected by the technology?

This technology is purely used to schedule appointments and facilitates parking. It does not impact a person's identity.

### How does the technology influence the users' autonomy?

This application is only meant to help users make better decisions. For instance, the visitor is still free to park in a different spot.

### What is the effect of the technology on the health and/or well-being of users?

The idea of this application is to help the secretary to be less stressed by having less work and having more time to do other secretarial work efficiently. And this will help the visitors to be less stressed by trying to find parking spots or by waiting for the secretary/or someone from the company to welcome and guide them.

### Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.

Like all software, there can be some technical issues affecting accuracy, so we will make sure that the users understand that the application is there just to help them make a better decision and/or to help them be more efficient. But they still have to rely on their common sense and/or human reasoning.

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## Stakeholders

Have you considered all stakeholders?

**Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.**

**Name of the stakeholder**

Secretary

**How is this stakeholder affected?**

The application helps the secretary to efficiently manage appointment related work and have more time to do some other important work.

**Did you consult the stakeholder?**

Yes

**Are you going to take this stakeholder into account?**

Yes

**Name of the stakeholder**

Visitors

**How is this stakeholder affected?**

The application helps visitors be well informed about the appointment. The application will help them feel welcome and have a good experience on their arrival at the company (due to the well-organized parking system and the visitor's arrival notifications to the manager).

**Did you consult the stakeholder?**

Yes

**Are you going to take this stakeholder into account?**

Yes

**Name of the stakeholder**

Managers

**How is this stakeholder affected?**

The application will help the manager to keep up with everything related to his/her appointments so that he/she can be a good host.

**Did you consult the stakeholder?**

Yes



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Are you going to take this stakeholder into account?

Yes

**Name of the stakeholder**

Product Owners

**How is this stakeholder affected?**

The application helps the company in providing the best care for their visitors and makes the work of their secretaries more efficient.

**Did you consult the stakeholder?**

Yes

**Are you going to take this stakeholder into account?**

Yes

**Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?**

**Name of the stakeholder**

Administrator

**How is this stakeholder affected?**

The application offers the administrator the options to manage user accounts so that there is always someone to take care of the visitors.

**Did you consult the stakeholder?**

Yes

**Are you going to take this stakeholder into account?**

Yes

**Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.**

By doing a stakeholder analysis we now better understand that not only the secretary is responsible for taking care of the visitors. There is also the manager and administrator who help the visitors to have a good experience related to their appointments/visits.

We must ensure that we take these target groups into consideration.

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## Data

Is data in your technology properly used?

### **Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?**

In the case of data shortcomings: our technology will have the option to edit any persons data which is stored in the database. If there is missing data, it can always be added later. As for a wrongly scanned license plate: there is nothing we can do for that. To mitigate the effects of this, if no valid license plate is scanned, the user is instructed to just park and talk to the secretary at the front desk.

The secretary should make sure no duplicates exist.

### **How does the technology organize continuous improvement when it comes to the use of data?**

As already answered in another course Privacy and data protection, one of the continuous improvement is that were looking forward to take into account that an administrator has an overview of user access to monitor possible data intrusion. Also were using relational database management system, which organizes our data in a proper way. Moreover, were planning to wipe out certain unnecessary data over time which we dont need in order to keep valid data in our storage solution.

### **How will the technology keep the insights that it identifies with data sustainable over time?**

Unfortunately, there is clear answer when it comes to keeping data for a certain time. Organizations can determine this themselves. However, in our opinion unused or unnecessary data kept within the database should be deleted to avoid unnecessary data being leaked which wasnt in use anymore, if this happens. Thus, we would delete this data whenever possible or needed. There are a lot of solutions available out there to keep certain features such as encoding users password up to date. Hence, we believe that our development team will take this into account whenever certain changes happen in the near future and keep those in use algorithms safe within our technology.

### **In what way do you consider the fact that data is collected from the users?**

There is no profit whatsoever on the users data and since they are really sensitive data. Thus, it will never be sold to any other third party. Even when the company is being sold, people will be informed by email whether they want to keep their data within our storage solution or we should delete them. This can be a lot, therefore it would be an automated process by asking them

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either to reply with Yes or No, so that our automated processes can handle these requests.

**Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.**

Some improvements we had in mind are:

In case the company is being sold, inform users and automate that process

Automate the removal process of data not being accessed (keep track of when certain data was accessed within the database, so that we know which data are no longer in use)

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## Inclusivity

Is your technology fair for everyone?

### **Will everyone have access to the technology?**

Only people associated with the client will make use of this technology, therefore only a limited number of people will have access to it. This is not a concern as this technology doesn't change the status quo, it merely automates an existing process.

### **Does this technology have a built-in bias?**

This technology has some built-in bias, as it is meant to be useful to primarily visitors that are using their car to arrive to the client's offices, however visitors with a vehicle which does not have a license plate or without a vehicle entirely can't make use of it. This is not a big concern however as the intention is to reduce the volume of visitors that rely on the secretary. Since most visitors would arrive by car, the few that don't will not be problematic.

### **Does this technology make automatic decisions and how do you account for them?**

Automatic decisions are made by the system, for example, it detects license plates, dispatch notifications, and assigns a parking spot. The decisions are explained during the production of the system where their performance is assessed. Some alternative implementations exist but the current system was selected based on its performance and ease of use.

### **Is everyone benefitting from the technology or only a small group?**

#### **Do you see this as a problem? Why/why not?**

Currently this technology is benefiting only a small group of people, which is the scope defined by the client. It facilitates some business interactions which some could consider social relations being eliminated or reduced, but those can also be seen as an annoyance for the people involved.

### **Does the team that creates the technology represent the diversity of our society?**

Yes. The team represents members of different cultures, ethnicity etc, much like could be seen within the target group. The technology does not care about the people involved, only their vehicle's license plate.

**Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.**

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There are concerns about whether all vehicles with license plates will be able to make use of the technology, due to the difference in format, therefore it would be good to make improvements in that regard.

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## Transparency

Are you transparent about how your technology works?

### **Is it explained to the users/stakeholders how the technology works and how the business model works?**

The product owners know in detail how our software will work, as we have kept in regular contact during development. For normal users, a short installation and user guide will be provided so they know how to work with the technology. We will NOT be providing full details of the technological diagrams to users and visitors, as this is not necessary for their use of the technology. We will be providing this to the System Administrators, as they need to know how to maintain our product.

### **If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?**

There is only one 'algorithm', which assigns a parking spot to a car. This is done in a very easy way where it just assigns the one closest to the entrance. This is made clear to the stakeholders, and users will be shown a text saying that the closest available parking spot is x. In this way, it is explained to everyone which factors are taken into account.

### **Is it possible to file a complaint or ask questions/get answers about this technology?**

The technology is an in-house developed app for Sioux, so any complaints would come from inside the company that develops it. This way it is very easy to file complaints or get answers to questions about the technology.

### **Is the technology (company) clear about possible negative consequences or shortcomings of the technology?**

No, but this is also because it is a tool developed in-house.

### **Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.**

None

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## Sustainability

Is your technology environmentally sustainable?

### **In what way is the direct and indirect energy use of this technology taken into account?**

We strive to make our system as efficiently as possible. The services will be hosted by the Product Owners themselves, and product will only be run on a few machines at a time. Because of this, energy consumption is already at a low point.

### **Do you think alternative materials could have been considered in the technology?**

Due to limited budget and different focus, it is not likely we could have replaced any components.

### **Do you think the lifespan of the technology is realistic?**

Our product should last as long as Sioux or a part of the company occupies that building and owns the parking lot. Changes might need to be made in case the layout of the parking lot changes. Cameras might need to be maintained.

### **What is the hidden impact of the technology in the whole chain?**

By making the parking process convenient and faster we are slightly reducing carbon emissions. If the technology ever became widely used, it might encourage the use of cars, however, it would also encourage carpooling.

### **Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.**

We can't really make any improvements, due to the small scope of our technology and it's effect on the environment is most likely unnoticable.

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## Future

Did you consider future impact?

### **What could possibly happen with this technology in the future?**

Our parking and appointment system could be an inspiration for other companies around the world. Copies could be made, or we could be asked to upscale it for a bigger audience, which would change our considerations regarding energy and technology usage.

### **Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.**

This kind of system could be very useful in use cases similar to the one currently being fulfilled, for example a clinic which receives an important number of visitors could make use of it and direct patients directly to their doctor. This can be expanded to any business or institution in order to reduce loss of time while people ask questions at the reception for example, or while looking for someone to help them.

### **Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.**

Caution should be advised, as some components of this system can be altered and made to target groups and people in a manner that goes against the statements made within this TICT document. For example, there are cases already where AI enabled visual recognition is used to track people in countries with a less than stellar human rights record, but also in countries where those rights are meant to be enforced.

This is ultimately a tool and a tool is only as dangerous as the user wants it to be. It is also a tool that has now become ubiquitous, therefore preventing access is nearly impossible.

### **Would you like to live in one of this scenario's? Why? Why not?**

Yes I would like to live in a utopian scenario and not a dystopian one.

### **What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?**

The third party may use this technology, however given the many other tools that are available to anybody, the impact of this specific product will be minimal if meant to be used for nefarious deeds.



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**Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.**

If we are to assume that this technology exists in a vacuum and the only one of its kind, in order to avoid a dystopian future, one solution would be to never release it. This assumes that nobody else would be capable of reproducing it, which is not founded. Any improvements and time spent on it from the perspective of the current developers is to work within the scope that was defined with the client.