Summary

The Zoo Manager has numerous complex tasks daily to look upon which primarily includes monitoring of Zoo Animals, Visitors and the whole habitat.

Storyline

Considering the Zoo has all the animals in enclosures, Manager has to monitor the health of animals, their activity, their food intake and various other such tasks. Also, monitoring of Visitors, making sure the visitors are not trespassing the safety measures is a part of his monitoring. He should also take care if the habitat in and around the enclosures are clean and safe for animal and visitors.

Receiving alerts with regards to all the above scenarios will make the job easier and efficient, ensuring maximum safety.
Persona

Ramesh K
Zoo Administrator

I want all the animals in my zoo to be safe & happy all the time, and I can ensure all this using a single monitoring device.

About

- 38 Years, Married, 9 years of Experience Animal Care.
- Ensuring the well-being of all animals of the Zoo
- Always mobile, monitoring all the animals, ensuring the visitors do not trespass the safety measures.

Responsibilities

- Responsible for ensuring good health of all the animals
- Responsible for ensuring safety to visitor by adhering to guidelines
- Responsible for maintaining the habitat in and around enclosure safe and suitable

Main Goals

- Ensuring the well-being of all animals of the Zoo
- Ensuring maximum safety for the visitors
- Ensuring that the habitat is clean, suitable and safe for animals and visitors

Needs

- I need to make sure that all the animals are healthy, monitoring all of them, accurately is hard.
- I need to make sure that environment – temperature, contamination levels are safe for the animals and visitors, which is not an easy task.
- I need to be sure that all enclosures – locks, grills, barricades, and doors are working making the zoo safe.
- I need to be sure that people do not cross the safety lines, feed animals without consent, enter into enclosure and thus avoiding any accidents.

Pain Points

- Monitoring health of all animals, and ensuring the well-being of all animals at given point of time is never an achievable task
- Maintaining proper climate conditions like temperature, moisture, air purity, water purity in the whole zoo is very difficult.
- Monitoring people and ensuring that they do not violate laws of Zoo is difficult due to number and area of zoo.
Point of View (PoV)
User + need + insight/why

Point of

As a Zoo Administrator,

I need a way to

Monitor the Health of all the Animals of the Zoo and also make sure that overall Zoo health is suitable for the Animals and the Visitors

So that

All the animals are happy and healthy all the time, and the Visitors have a safe and happy experience visiting the zoo.
## UX Journey

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>MINDSET</th>
<th>FEELING</th>
<th>TOUCH POINTS</th>
</tr>
</thead>
</table>
| • Get into Animals enclosure  
• Identify and Do a health checkup of the Animal  
• Check if the enclosure is safe – all doors, grills, locks are all good.  
• Check if the environmental factors – temperature, moisture, air and water levels.  
• Keep monitoring people and make sure they do not trespass or violate Zoo rules. | → What mood is the animal today?  
→ Checking all the locks, grills, and doors is really a tough job.  
→ This is pretty complex job too.  
→ Can I be at all the places at same time!!!  
→ Finally I have a complete report. But I am not sure if it is the correct data at this point of time. | 😞 | → Enclosure  
→ Animal  
→ Enclosure (Doors, Grills, Locks, Barricades...)  
→ Thermometers, Testing Devices, Report pads  
→ People  
→ Enclosure  
→ Reporting System  
→ Report files |

Make sure all things are recorded and create report at end of the day with regards to health, number of visitors.
Prototype

This prototype is designed for the Zoo Administrator, whose job is to monitor Animals, Visitors and the Zoo surroundings. Considering all the Animals in Zoo are in the enclosures; using IOT, these monitoring tasks can be done easily and with maximum accuracy.

The below design is a very small, conceptual and an overview demonstration of the application.

Main Page/Home Page:

Considering the fact that all the Visitors entering the zoo are provided with wearables such as RFID, their location, movement, heat map is continuously monitored.

This tile has all the list of Animals, the tile shows the number of animals and the alert icon displays that the alert that has been triggered in the example is for an Animal.

Administrator receives Alerts on anything that has to be addressed. Depending on the criticality - Information, Warning or Error (critical) Alerts are displayed. In the above example, we have one information Alert(colored Blue) which needs to addressed, but is not critical.

Considering that the zoo is divided into multiple administrative parts, here – into 3 parts, we have number of animals respective to the administrative part displayed on tiles. The Alert is also displayed for the Tile, to which the animal belongs to.
The next page is the list of Animals belonging to the respective administrative part of the Zoo.

The main page (General Information Tab) of the Animals, will have the Basic details of Animal, its Physical Details, its exact location in Zoo, its History Details (in and prior (if) to Zoo induction)

The **Health** tab, will have all the details with regards to Health of Animal such as – Pulse Rate, Blood Pressure, and Breath Pattern. Further calculation of these can provide us the Emotion pattern, Sleep Pattern and other such activities all of which can be recorded and displayed here, which would be real time. To achieve this, we use the **wearable devices** which detect these parameters.

The **Habitat**, will have all the details of inside and around the enclosure of the animal. We can use the IoT devices that detect the constituent levels, temperature of Air and Water. We can ensure that the enclosure are secure from inside and outside using the **safety IoT Devices**. Animal Movement Map in the enclosure, the People Heat map around enclosure can also be obtained using **IoT devices**. Also, whenever the Animal details of its Habitat is fetched in the app, a dedicated **Drone** will provide the live visuals of the animal.
Further, the Sensors Tab will have all the details of Sensors that are set in and around enclosure and on the animal.

As mentioned earlier, this just an overview of the application, the similar way Visitor Management can also be done. Further IoT devices can be used for more complex activities such as use of Drones for food and water supply.

There is always a scope for improvement, especially when we have SAP, Big Data and IoT together, what I call SAP BiDIoT.

Please click on the below link to access the prototype:

[Link to Build App](#)