

The background features abstract, overlapping geometric shapes in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are primarily located on the left and right sides of the frame, creating a modern, tech-oriented aesthetic.

# **Digital Naturalist - AI Enabled tool for Biodiversity Researchers**

# Problem Statement

- ▶ Biodiversity is the variation among living organisms from different sources including terrestrial, marine and desert ecosystems, and the ecological complexes of which they are a part.
- ▶ Biodiversity includes the number of different organisms and their relative frequencies in an ecosystem. It also reflects the organization of organisms at different levels.
- ▶ The term biodiversity was coined in 1985. It is important in natural as well as artificial ecosystems. It deals with nature's variety, the biosphere. It refers to variabilities among plants, animals and microorganism species.
- ▶ Biodiversity holds ecological and economic significance. It provides us with nourishment, housing, fuel, clothing and several other resources. It also extracts monetary benefits through tourism. Therefore, it is very important to have a good knowledge of biodiversity for a sustainable livelihood.

## Importance of Biodiversity

- ▶ Biodiversity and its maintenance are very important for sustaining life on earth. A few of the reasons explaining the importance of biodiversity are:

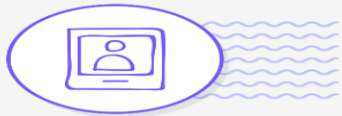
## Ecological Stability

- ▶ Every species has a specific role in an ecosystem. They capture and store energy and also produce and decompose organic matter. The ecosystem supports the services without which humans cannot survive. A diverse ecosystem is more productive and can withstand environmental stress.

## Economic Importance

- ▶ Biodiversity is a reservoir of resources for the manufacture of food, cosmetic products and pharmaceuticals.
- ▶ Crops livestock, fishery, and forests are a rich sources of food.
- ▶ Wild plants such as Cinchona and Foxglove plant are used for medicinal purposes.
- ▶ The national parks and sanctuaries are a source of tourism.
- ▶ Humans should not cause their voluntary extinction. Biodiversity preserves different cultures and spiritual heritage. Therefore, it is very important to conserve biodiversity.

- ▶ The project aims to create an application for the hikers to find the rare species of birds, flowers , and mammals by giving a picture taken by them.
- ▶ A naturalist is someone who studies the patterns of nature, identifies a different kind of flora and fauna in nature. Being able to identify the flora and fauna around us often leads to an interest in protecting wild spaces, and collecting and sharing information about the species we see on our travels is very useful for conservation groups like NCC.
- ▶ When venturing into the woods, field naturalists usually rely on common approaches like always carrying a guidebook around everywhere or seeking help from experienced ornithologists. There should be a handy tool for them to capture, identify and share the beauty to the outside world.
- ▶ Field naturalists can only use this web app from anywhere to identify the birds, flowers, mammals and other species they see on their hikes, canoe trips and other excursions.
- ▶ In this project, we are creating a web application which uses a deep learning model, trained on different species of birds, flowers and mammals (2 subclasses in each for a quick understanding) and get the prediction of the bird when an image is been given.



## Empathy map

Use this framework to develop a deep, shared understanding and empathy for other people. An empathy map helps describe the aspects of a user's experience, needs and pain points, to quickly understand your users' experience and mindset.

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### Build empathy

The information you add here should be representative of the observations and research you've done about your users.

#### Says

What have we heard them say?  
What can we imagine them saying?

To identify the difference species available in the dataset.

To know more facts about the species.

To know miscellaneous and unheard information about the species.

Increase the number and size of protected areas of the world.

Action:  
We must take necessary action to save time to get a particular species

#### Does

What behavior have we observed?  
What can we imagine them doing?

Behaviour: Being a tourist, they find lots of species

#### Thinks

What are their wants, needs, hopes, and dreams? What other thoughts might influence their behavior?

I am an animal lover.

To preserve the species.

Spread awareness about the rare species.

Extract medicines from the useful plants

Digital Naturalist Application

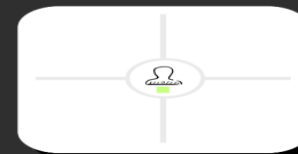
Extinct species might cause anxiety.

Poaching and exploiting them for ivory fur etc...

Deforestation and their shrinking environment.

#### Feels

What are their fears, frustrations, and anxieties? What other feelings might influence their behavior?



**THANK YOU**