

Task 4: Shiny App Outline

AnimalDex

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a. App summary:

AnimalDex provides visitors to national parks the information on where to have a higher chance of seeing which animals as they explore the beautiful natural sceneries. Users can choose from nine national parks in California and narrow down their interested animal groups. Our app will give a brief introduction of the selected national park, overview of all the animal groups it has, and past 10-year observations of the animals in the park.

b. Data:

We will use geospatial data of the national parks provided by US Department of Interior, National Park Service (<https://public-nps.opendata.arcgis.com/>). Specifically, we will use the boundary layer and campsite, trails, transportations, facilities, and cultural layers if available. We will use species observations downloaded from iNaturalist (<https://www.inaturalist.org/observations>) and include research grade observations with longitude and latitude only. We propose to include animal groups of birds, squirrels, rabbits, turtles, lizards, snakes, amphibians, butterflies, spiders, deers/mules, big cats, and bears (please narrow the scope down).

c. Widgets:

- *Widget 1: Select Box, to select which natural park interested, inputs will be from the National Park Service data.*
- *Widget 2: Radio Button, give options of animal groups in the selected natural park to select animal group, inputs will be from iNaturalist data.*
- *Widget 3: Check box, to select species from the selected animal group, inputs will also be from iNaturalist data.*

d. Outputs:

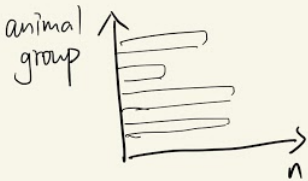
- *Output 1: Interactive map of the selected national park, including the parks' boundary, hiking trails, services, restrooms, etc.*
- *Output 2: A brief introduction of the selected national park on history, background, etc.*
- *Output 3: Simple column graph showing all animal group observations of selected national park.*
- *Output 4: Interactive map of the selected national park, showcasing the groups and species of animals. Users will be able to select many species(check boxes) within an animal group (radio button).*

e. Sketch:

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national park pictures	<table><tr><td>Tab1</td><td>Introduction</td><td>Tab2:</td><td>Tab3</td></tr><tr><td colspan="4"><p>In this tab (Tab1)</p><ul style="list-style-type: none">◦ summary of all data<ul style="list-style-type: none">- national parks included- animal groups included◦ introduction of the app<ul style="list-style-type: none">- what it does- explain tab2 and tab3◦ other relevant background</td></tr></table>	Tab1	Introduction	Tab2:	Tab3	<p>In this tab (Tab1)</p> <ul style="list-style-type: none">◦ summary of all data<ul style="list-style-type: none">- national parks included- animal groups included◦ introduction of the app<ul style="list-style-type: none">- what it does- explain tab2 and tab3◦ other relevant background			
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<u>Widget1</u> Select Park select box	<u>Tab1</u> Introduction	<u>Tab2: Park</u>	<u>Tab3</u> Animals
introduction of the national Park	map of national park (interaction) <ul style="list-style-type: none">- boundary- trails- services in the national Park- animal observation (color based on animal groups) <hr/> simple statistic of all animal observations 		

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<u>Widget 1</u> Select Park select box (linked to tab2 selection)
<u>Widget 2</u> select animal group radio button
<u>Widget 3</u> select species checkbox

<u>Tab 1</u> Introduction	<u>Tab 2</u> : Park	<u>Tab 3</u> Animals
map of animal observation (interactive) <u>note</u> - users can select multiple species in one selected animal group.		