Project Plan

Seneca Park Zoo Tigers

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Overview

This project is the first continuation of the Seneca Park Zoo Conservation Impact project started in the Spring of 2019. The project, sponsored by the Seneca Park Zoo Society, aims to leverage current technologies to aggregate and disseminate conservation data produced by zoos at scale which will ultimately benefit the zoos as well as their donors.

This project intends to give zoos the ability to easily track and manage their conservation projects. Zoo staff will be able to select what projects they want to check on and add new data to it. The adding of new data will be done by importing a spreadsheet into the MyConservationLife database that was established by the previous team. On the other hand, zoo staff will also be able to download data from the database in the form of a spreadsheet.

Zoo guests who donate towards an ecological asset will be able to see its growth over time through the data zoo staff imports into the database. They will be able to see every project they have donated to as well as all the assets they have sponsored. These assets can be viewed chronologically within a list and also geospatially on a map. Additionally, donors will also be able to explore other projects associated with non-local zoos.

The project is divided between two main platforms. The community, zoo staff, and administration portals are hosted on Salesforce and make use of Lightning Web Components. The open source database component is hosted on Heroku and will be accessed using a RESTful API.

The customers for the Seneca Park Zoo Society range from individual visitors of the zoo to organizations making large donations. At the zoo, someone can "purchase" a new tree being planted. They will receive a unique token that allows them to register the tree online and make an account for themselves. Once the tree has been planted, they will be able to view geospatial, temporal, and visual data that has been collected by someone where a reforestation project is taking place.

The team will begin work on the high priority backlog items. The customer has made it clear that the key deliverables we are responsible for include the ability to upload quantities of asset data at a time and adding temporal attributes to the database to track changes over time. Our goal is to have the first of these key deliverables completed by Mid Fall 2019 and the latter by Early Spring 2020. In between these deadlines we are scheduled to complete our build pipeline and add features onto the web portal.

Nikolas will be the team scribe and team time keeper. It will be his responsibility to create templates for meeting agendas, take notes, and aggregate all of the individual team punch cards to track time spent on the project. Edward will be Sponsor Communicator and database developer. He will be the point of contact when emailing or messaging the sponsor or other organizations and will be the most familiar with the database technologies being used. Jared will be responsible for the CICD pipeline. He will setup the Jenkins server and make sure that the build is configured correctly. Anthony will be the website coordinator. He is responsible for managing the static website code in github pages and pulling the latest version of the website to the team account hosted by the Software Engineering Department at RIT.

Goals and scope

As we are doing an agile methodology with SCRUMptious, we are anticipating being flexible with the scope of this project, dependent on the requests of the sponsor as well as our velocity - either higher or lower. Additionally, at this time we feel that our scope is somewhat undefined. We know that our scope will become more clear over time, but we are unsure at the moment of writing. As a result, we've based our scope on the backlog in our Trello board to the best of our ability.

- Software build pipeline
  - Jenkins server and build setup
- New Features
  - Geospatial and Temporal Queries
  - Flexible import and export of attribute data
- Goals:
  - For ourselves: Achieving professional and technical growth by working on a real-life project and using new technologies, improving our expertise on establishing an efficient software process, passing the course(s).
  - Sponsor: To be able to track the impact of conservation projects, spread awareness of environmental conservation to the public, show the public the results of conservation projects and actions
  - Project: Database setup, web portal, make the site look good/usable, to allow projects to be easily tracked by both zoo staff and donors, accessible documentation regarding user roles and MyConservationLife usage
- Scope (from the product backlog):

- ○ Import asset data via a structured file format.
  - ○ Export asset data to a specified file format.
  - ○ Access Codes Generation Enhancements
  - ○ Creating conservation projects via salesforce
  - ○ Track the history of asset property changes
  - ○ See all sponsored ecological assets as a donor
  - ○ See all assets on a map to be able to track progress
  - ○ Use existing asset definitions for consistency purposes
  - ○ ~~Create functionality for the sponsor to create an account and track data~~ (Edge Scope - Brian)
  - ○ ~~Prototype communicating databases~~(No longer applicable)
  - ○ ~~Access Codes Redeem Enhancements~~(Out of our scope - Brian)
  - ○ ~~Add unit specification for custom properties of asset definitions~~
  - ○ ~~Add an asset data type for list definitions~~
- ● In-scope
  - ○ Web portal
  - ○ Continuous Integration/Continuous Delivery pipeline
- ● Out-of-scope
  - ○ Blockchain database
  - ○ Salesforce front-end and business stuff

Deliverables

- ● Build automation pipeline
- ● Importing and Exporting data files
- ● Web Portal
- ● Temporal and Geospatial search
- ● Usable databases/proper data storage
- ● Developer Scripts and Toolchain

Risk Management

Risk ID	Description of Risk	Probability (0 - 1)	Impact (low, med, high)	Exposure	Classification	Owner	Prevention Strategy	Mitigation Plan	Status
12	Heroku data loss	0.9	high	9	Technical	All	Fix cause of issue	Data backups	Experiencing
11	Scope creep	0.5	high	5	External	Anthony	Discuss MVP and limit work	Negotiate MVP/deadlines	In progress
9	Inaccurate estimation	0.6	medium	3	Technical	All	Use historical data from our past sprints & SPIKEs	Conservatively estimate effort until we're comfortable	In progress
6	External stressors and obligations	0.3	medium	1.5	External	All	Planning around those times	Inform the team and be communicative	Always
3	Difficulty learning SalesForce tools	0.3	medium	1.5	Technical	All	Do self-learning and ask questions early	Talk to Brian Goldberg	In progress

Scheduling and estimates

Our schedule is based around two week sprints, with the amount of work being pulled into a sprint in planning meetings based on the number of story points, measuring effort. Each team member will assign stories (i.e. tasks) to themselves, with the sum of the story points for all tasks in a range they feel confident in completing in the sprint. The stories will be pointed in grooming sessions prior, and they will be ordered by the importance as determined by the sponsor.

Each team member will work as an independent contributor (IC) for their task, but will be expected to keep the team updated and ask for help as needed, in order to stay on time and complete the task within a reasonable window of time. Additionally, different team members will have specific roles as defined in the Roles and Responsibilities document, which they will also have ownership over.

Story points are based on an established system of a point:time relationship, as seen in the SCRUMptious document. A given number of points has a correlation to the number of days it will take to complete it. All points will be voted on by the team and a consensus will be reached to ensure that the pointing scheme is accurate. As we get a better understanding of the amount of work each task takes, we may adjust the point values or how we apply them.

The project will be tracked via a Trello board to keep track of the tasks performed and their status for each team member.

Major deliverables timeline:

Task	Target Date	Completion Date
Build Automation Pipeline	Early Fall 2019	Early November 2019
Importing and Exporting Data Files	Mid Fall 2019	Early Spring 2020
Web Portal	Late Fall 2019	Removed from Scope
Geospatial Search	Early Spring 2020	Early Spring 2020
Temporal search	7th Week Spring 2020	
Maps with Plotted Geospatial Data	Demo - Feb 27th	

Measurements & Metrics

The team plans to use Lines of Code, Story Points, and Test coverage to develop a baseline and determine the effectiveness of our development process. Details about our metrics and measurements can be found in the [Measurement and Metrics document](#).

Technical Process

The team has chosen to follow a tailored version of SCRUM that has been named *SCRUM*ptious. *SCRUM*ptious follows an iterative and incremental software delivery model with 2 week sprints, leveraging lightweight tools such as Trello and Slack. In-depth details of *SCRUM*ptious can be found in the [*SCRUM*ptious document](#).