



MATES Computer Science

Senior Capstone Project Bi-Weekly Progress Report

Project Title	TerrapinTracker
Team Members	Angelo Amato, Aidan Henbest, Lisa Hunt
Dates Covered by Report	March 6, 2023 - March 17, 2023
Link to Github	https://github.com/henbestaj/senior-capstone

1. **Summary of Project** (Provide a one paragraph summary of your project. You can largely copy/paste this from one progress report to the next, unless there are significant changes.)

Our plan is to create a website for Project Terrapin that regularly updates the statistics on the growth of the hatchlings cared for both at MATES and other affiliated schools. We will use the measurement data for the growing terrapins and, using Python and JavaScript, create different graphs to display the data. This website will be public and linked to the main Project Terrapin website. The site will update automatically when new data is added from recent measurements. Our project will help to raise awareness of the dangers that face the Northern Diamondback Terrapin species. They are a keystone species in the Barnegat Bay, meaning they are essential to the survival of the ecosystem. Our website will hopefully inspire others to get involved in the protection of terrapins, and potentially let them track the growth of hatchlings they may have found, giving them a more personal connection to the turtle(s) they helped to save.

2. **Summary of Progress this Period** (Provide a high-level, one paragraph overview of what was accomplished this progress period collectively by the team.)

Our objective this period was to create the website pages and link them together. At the start, we all finished learning Django basics which is used in linking everything together. We also worked on

creating the SQL database and adding it to the website. We displayed the data on the website for now, but it will be changed later. All the navigation buttons now go to their own HTML page linked to the base page. At the end of this period we started adding information to the Contact, About and Current pages.

3. Detailed Progress this Period, separated by Team Member (Provide detailed information on the progress that you made in the reporting weeks. Include screenshots of code, your game or website, etc. Each team member should have a separate subsection covering their accomplishments. Not including screenshots, this section should be 1-2 pages.)

- **Angelo (Block 2)**

Over the past two weeks I have worked to create the various pages for the website. I created the HTML files and some of the corresponding CSS files. I used Django to link the pages together using the nav bar (with a lot of help from Aidan). Decent portion of my time this period was spent attempting to load the server in my browser using Django. This set the tone for this period as I spent a decent amount of time saying “why isn’t this working.” A majority of the errors came from the unfamiliar tools we are using. For example, I did not realize that the browser would cache the site and not update with new changes. I spent a large portion of time wondering why the color of the text/background wasn’t changing. I faced many other hurdles like this.

In regards to the pages I created this period I mainly worked on the about us page. I wrote a brief description of our project and inserted “cards” of all of us (using pictures that are formatted poorly). I included our emails and a button to contact us that will eventually set up and email.

- **Aidan (Block 3)**

At the start of this working period I worked on linking the pages on the website together, making it so that when a button is clicked it sends the user to a separate page. Previously, buttons would just add a “/#” to the end of the path, which didn’t do anything other than let us know that the buttons were actually being pressed. However, now pressing a button on the website sends the user to an entirely new page that has its own HTML file. Furthermore, I worked on making the navigation bar change color depending on the page you are on. Previously, all the buttons on the navigation bar were orange, but now they are all orange except for the one for the page you are on, which is blue. I also gave the website a favicon of the Project Terrapin logo and made the Project Terrapin logo in the top of the website link to the homepage of the website.

Additionally, I made major progress on the SQL database. First, I created the models in django, which state what tables there should be, the columns in those tables, and the datatype of each column. Models can also specify additional information such as default values and can be associated with methods based on the tables. Two models were created, one for turtles and another for measurements. Next, I had to create the database in MySQL and link it to the django project. After doing this, the schema and tables are automatically created based on the django models. Finally, I imported the

data from the CSVs we have into the tables. After this, I made some extremely basic tables to show on the website as a proof of concept, but they were not very good and Lisa later overhauled them.

- **Lisa (Block 3):**

In the past two weeks, I worked on learning Django and how to implement it into CSS and HTML files. I then worked on the search box, making it expand and function as an input button. I spent a lot of time formatting everything: the design, position, and functions of the search bar. I worked on fixing some issues with the navigation bar and adjusting the grid and elements when we removed a section. I then had to make sure my changes applied to all the other pages of the website.

I also worked on making the Current Turtles page. I formatted the table that will be used later to make the graphs using a flex display, so it would swap rows and columns to fit on the page. I started to create all of the turtle buttons on that page, sorting the turtles by their R number for users to view. Each R number is a link that will lead to a page of turtles within that number, and those individual links will lead to the data and graph for that turtle. I created the stylesheet CSS file for that page as well, and linked everything to the base page. Lastly, I completed the Learn D3 Codecademy course.

Website:



The screenshot shows the top section of the TerrapinTracker website. At the top, there is a light blue header with a search bar on the left, a magnifying glass icon in the center, and a dark teal 'Sign in' button on the right. Below this is a horizontal band with a light blue background. On the left is a circular logo for 'Project TERRAPIN' featuring a turtle. Next to it is the text 'TerrapinTracker' in a dark teal serif font. On the right side of this band is a magnifying glass icon and a dark teal 'Sign in' button. Below this band is a navigation bar with five orange buttons labeled 'Home', 'About', 'Current Turtles', 'Released Turtles', and 'Contact'. Below the navigation bar is a dark teal section with the heading 'About Us' in white. Under 'About Us' is a paragraph of text: 'This website is used by Project Terrapin to avoid tracking the growth of hatchlings through spreadsheets; the data is directly input into the website by members. Our project aims to help raise awareness of the dangers that face the Northern Diamondback Terrapin species. They are a keystone species in the Barnegat Bay, meaning they are essential to the survival of the ecosystem. Our website will hopefully inspire others to get involved in the protection of terrapins, and potentially let them track the growth of hatchlings they may have found, giving them a more personal connection to the turtle(s) they helped to save.' At the bottom of this section is the heading 'Our Team' in white.

Code:

```

.turtles-table {
  margin: 500px 0px 30px 30px;
  width: 90%;
  font-family: sans-serif;
  justify-content: center;
  justify-self: center;
  align-items: center;
  align-self: center;
  display: flex;
}

.turtles-table thead {
  display: flex;
  flex-shrink: 0;
  min-width: max-content;
}

.turtles-table tbody {
  display: flex;
}

.turtles-table tr {
  display: flex;
  flex-direction: column;
  min-width: max-content;
  flex-shrink: 0;
}

.turtles-table td, .turtles-table th {
  display: block;
}

.turtles-table td {
  min-width: max-content;
}

.turtles-table caption {
  display: block;
}

```

```

<th>R Number</th>
<th>Hatchling Number</th>
</tr>
</thead>
<tbody>
  {% for turtle in Turtle %}
  <tr>
    <td>{{ turtle.r_num }}</td>
    <td>{{ turtle.hatchling_num }}</td>
  </tr>
  {% endfor %}
</tbody>
</table>
</div>
</div>
<table class="measurment-table">
  <thead>
    <tr>
      <th>Date</th>
      <th>Turtle</th>
      <th>Carapace Length</th>
      <th>Carapace Width</th>
      <th>Plastron Length</th>
      <th>Carapace Height</th>
      <th>Mass</th>
    </tr>
  </thead>
  <tbody>
    {% for measurment in Measurment %}
    <tr>
      <td>{{ measurment.date }}</td>
      <td>{{ measurment.turtle_id }}</td>
      <td>{{ measurment.carapace_length }}</td>
      <td>{{ measurment.carapace_width }}</td>
      <td>{{ measurment.plastron_length }}</td>
      <td>{{ measurment.carapace_height }}</td>
      <td>{{ measurment.mass }}</td>
    </tr>
  </tbody>
</table>

```

terrapi_tracker > turtles > static > turtles > # about_style.css > ...

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.column {
  float: left;
  width: 32%;
  margin-bottom: 16px;
  padding: 0 8px;
}

.card {
  box-shadow: 0 4px 8px 0 rgba(0, 0, 0, 0.2);
  margin: 8px;
}

.about-section {
  text-align: center;
  background-color: #474e5d;
  color: white;
}

.container {
  padding: 0 16px;
}

.container::after, .row::after {
  content: "";
  clear: both;
  display: table;
}

.title {
  color: grey;
}

```

terrapi_tracker > turtles > templates > turtles > about.html > div.about

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```

```

{% extends 'turtles/base.html' %}
{% load static %}

{% block head %}
<title>About</title>
<link rel="stylesheet" href="{% static 'turtles/about_style.css' %}" %}
{% endblock %}

{% block content %}
<div class="about">
  <div class="about-section">
    <h1>About Us Page</h1>
    <p>Some text about who we are and what we do.</p>
    <p>Resize the browser window to see that this page is responsive by the way.</p>
  </div>
  <h2 style="text-align:center">Our Team</h2>
  <div class="row">
    <div class="column" id="Angelo">
      <div class="card">
        
        <div class="container">
          <h2> Angelo Amato</h2>
          <p class="title">MATES Class of 2023</p>
          <p>Some text that describes me lorem ipsum ipsum lorem.</p>
          <p>gangelomato@gmail.com</p>
          <p><button class="contact_button">Contact</button></p>
        </div>
      </div>
    </div>
  </div>

```

4. Difficulties Encountered this Progress Period (Provide detailed information on the difficulties and issues that you encountered in the reporting weeks. Discuss mitigation strategies for how you got around or plan to get around these issues.)

One challenge we had was that the virtual environment and Python cache files were being uploaded to the GitHub repository. These types of files reference file paths on the specific computer you made them on, so when we went to commit new changes to other files, there would be a ton of conflict errors with these files. Or, if they did not conflict it would break the app on everyone else's computers when they pulled the origin. To fix this, we added all the environment and Python cache files to the .gitignore file, so committing will not include them anymore.

Another challenge we had was using the grid to format and display everything. It took a lot of trial and error to figure out the exact measurements; for example, there was an issue where even though the content on the page was within the website dimensions, a horizontal scroll bar kept appearing at the bottom, so we had to change the margins, width, and a few other invisible barriers to get rid of it.

We also faced some specific issues with Django. We did not know that the browser could cache the website so it would not reload. A lot of issues were silly mistakes or came from the fact that we were new to some of the programs.

Lastly, we faced many issues with the MySQL server. The django models would not work at first due to an issue with the AutoField (an id field that should automatically increment by 1) starting at 0 and incrementing by 0. This issue was solved by restarting the virtual environment, it is believed that the issues mentioned in the first paragraph caused this. After this, the MySQL server wouldn't recognize all of the new columns in the django models. This was resolved by restarting the Python cache (once again, there were mostly conflicts due to these files updating between computers) and deleting and recreating the django migration files. Once this was resolved, the MySQL server wouldn't recognize the default values of the django models which meant that the data wouldn't import from the CSVs. This was resolved by adding the arguments "null = True, blank = True" and removing the default arguments to each column. This allowed the data to be imported and once the data was imported the default arguments could be readded and the arguments "null = True, blank = True" could be removed. The previously empty cells were then populated with their given default values. All in all, these SQL issues persisted for about three days.

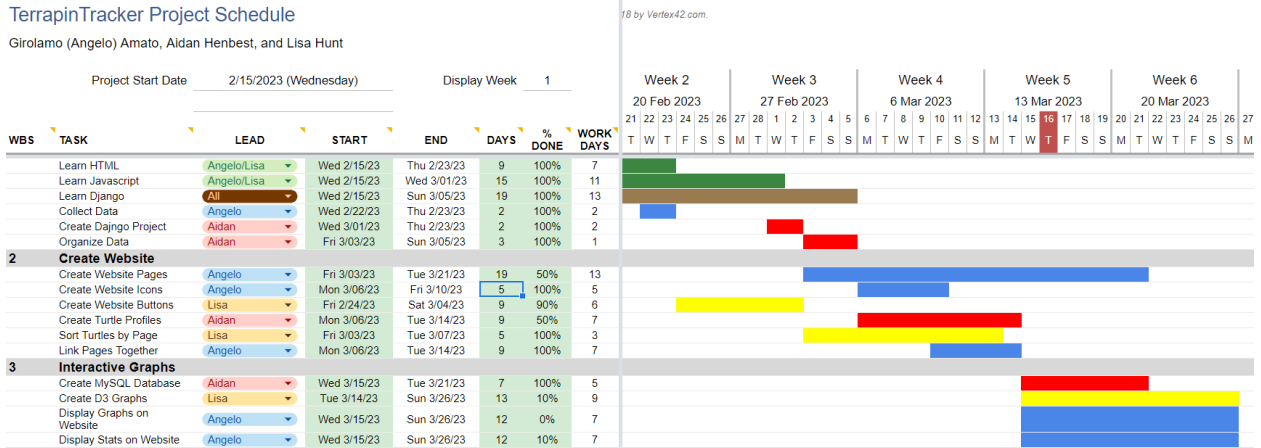
5. Updated Gantt Chart and Discussion (Provide screenshot of and link to updated Gantt Chart. Discuss any changes made to chart since last progress report and why.)

Link:

<https://docs.google.com/spreadsheets/d/1oi-GrYyScA3wGwhdOIGVoMxVTLk26KTI/edit?usp=sharing&oid=117504571525022214060&rtpof=true&cd=true>

Some tasks took a shorter amount of time than we predicted, so we swapped a few dates around. It took more time formatting certain buttons and features, so we are still on the same pace. The only task we pushed back was creating the graphs, since the page and data formatting is still ongoing.

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6. Tasks to Be Worked on in Next Progress Period (Discuss the tasks to be worked on in the following two weeks. Discuss who is working on each.)

Angelo	Aidan	Lisa
<ul style="list-style-type: none"> Finish creating pages <ul style="list-style-type: none"> Contact About <ul style="list-style-type: none"> Fix picture formatting Learn D3 and help create graphs Put graphs into website 	<ul style="list-style-type: none"> Create method for users to edit/delete rows on the MySQL database tables <ul style="list-style-type: none"> Keep a history of updates (when they were performed, who did them, what it was previously) Create method for users to add new rows on the MySQL database tables 	<ul style="list-style-type: none"> Continue creating turtle navigation buttons <ul style="list-style-type: none"> Create grid and display icons/names Create links to individual turtles by R number Create buttons for turtle information <ul style="list-style-type: none"> Edit/add/remove buttons Create D3 graphs

7. Additional Information (Provide any additional information that you want to provide in this section; for example, one of your teammates is going away next week, your Github account is gone, etc. It could be good news as well.)

Lisa: I will be away from 03/22/2023 - 03/24/2023 for a concert in Atlanta! If we can take home the computers by then I'll be sure to work on this over the weekend since I fly back Friday.