EPICS at Butler
WFYI Team
Andrew Stinson, Maeve McCormack, Dylan Bakr, Emily Efroymson
Fall 2019
WFYI

Table of Contents

Summary/Abstract

WFYI, Indianapolis' PBS and NPR affiliation, needed help with one project in the domain of computer science. They needed a website with an interactive garden that users could plant a flower with a message attached. This message could be anything, but mainly the messages would come as response to watching a documentary about Eva Kor a holocaust survivor.

According to WFYI, Eva: A-7063 is the story of Eva Mozes Kor. At age 10, Eva survived experiments by Nazi doctor Josef Mengele. At 50, she helped launch the biggest manhunt in history. After decades of pain and anger, Eva traveled the world promoting what her life journey has taught: Peace. Humanity. Forgiveness.

Chapter 1: Introduction

According to their website, their mission statement says "WFYI Public Media empowers, educates, entertains and connects our community through impactful journalism, inspiring stories and lifelong learning."

"Known for quality programming throughout Central Indiana, WFYI Public Media provides more than just the standard radio and television services. WFYI has been involved as a community leader and partner in education, health, public affairs, and the arts since 1970. We serve as a public forum where people are encouraged to discuss and debate issues important to the local community. Our award-winning documentaries and public affairs programs have addressed many relevant topics – including financial literacy, healthcare, workforce development and environmental affairs. This broadcast schedule combines with local community outreach programs to focus on developing successful solutions to local issues."

Eva's Peace Garden

WFYI asked for an interactive garden in which people could plant virtual flowers in the garden attaching to them a personal message. This garden was to serve the purpose of creating a lasting legacy of Eva Kor a holocaust survivor who had impacted people all across the world. With the release of a documentary about her life, WFYI took her story and the documentary to many schools around Indiana. After sharing her story, the children would then have the opportunity to plant a physical flower with a note attached with a nice message or a way in which Eva impacted them. The issue with this was the difficulty in maintaining so many gardens across the state. This prompted several reasons for their desire for this garden website,

1. Having it live online made it very easy to maintain and keep running
2. Having a garden on the internet would allow users to go back and see their flower months or even years beyond when they saw the film
3. An online garden presents the potential for a wider impact on areas beyond the state or even the country
4. It will encourage people to watch the documentary and learn about Eva's story and her life's work

We decided to attack this problem with HTML on the front-end side. Staring early on we met with the clients and got a basic understanding of what they wanted for the garden. We worked from scratch using HTML, CSS, and JavaScript to design the site and its functionalities. On the backend side we worked with SQL to design a database that would talk to the website and be used to store user's information along with being able to display old flowers on the site via searching for them.

This report contains all of the work done on the website and database during the semester and the following chapters are focused entirely on this single project.

Chapter 2: Requirements Specifications

During the first few weeks of class we heard from a slew of clients with proposals for projects to take on. Our entire team really fell in love with the story of Eva's life and the legacy they wanted to leave behind after her passing this past summer. Initially our clients described a virtual garden that lived on their website. They wanted someone's flower to be seen on the site and remain along with the ability to see other people's flowers as well. The final thing they wanted was sharing capabilities in which the user would be able to share their flower on social media and have the ability to reach more people and bring more traffic to the site. Following a primary meeting with our clients after the deciding to take on this project and after watching Eva's documentary we had a great idea of what they wanted and how to start.

Chapter 3: Architecture

The overall architecture of the project is fairly straightforward. For the website end we used basic HTML, CSS, and JavaScript to create and format the page as we liked it. The form that appears on screen when clicking to create a new flower is done purely in HTML and CSS. We played around with an idea of using other software, but found the capabilities of HTML and CSS sufficient to do the job. The entire website is only local on our laptops as of right now, but it would be very easy to send the code over and get the modal up on a public site, we just did not see the need for this due to the amount of testing and refining we were doing.

As it stands currently the backend part of the project is in beta. The database was created using SQL and as of right now it is hosted only on a local server on a laptop. This code can be easily transported to direct to an online server, but in the beta version we have no need to do this.

Chapter 4: Design

We played around with several designs and layouts for the website and garden. In the end we met with our clients and received an image with their idea or a design of the website and we were able to create this just how they wanted it. However, it is good to review how we changed and shifted our design throughout the semester.

Halloween Prototype:
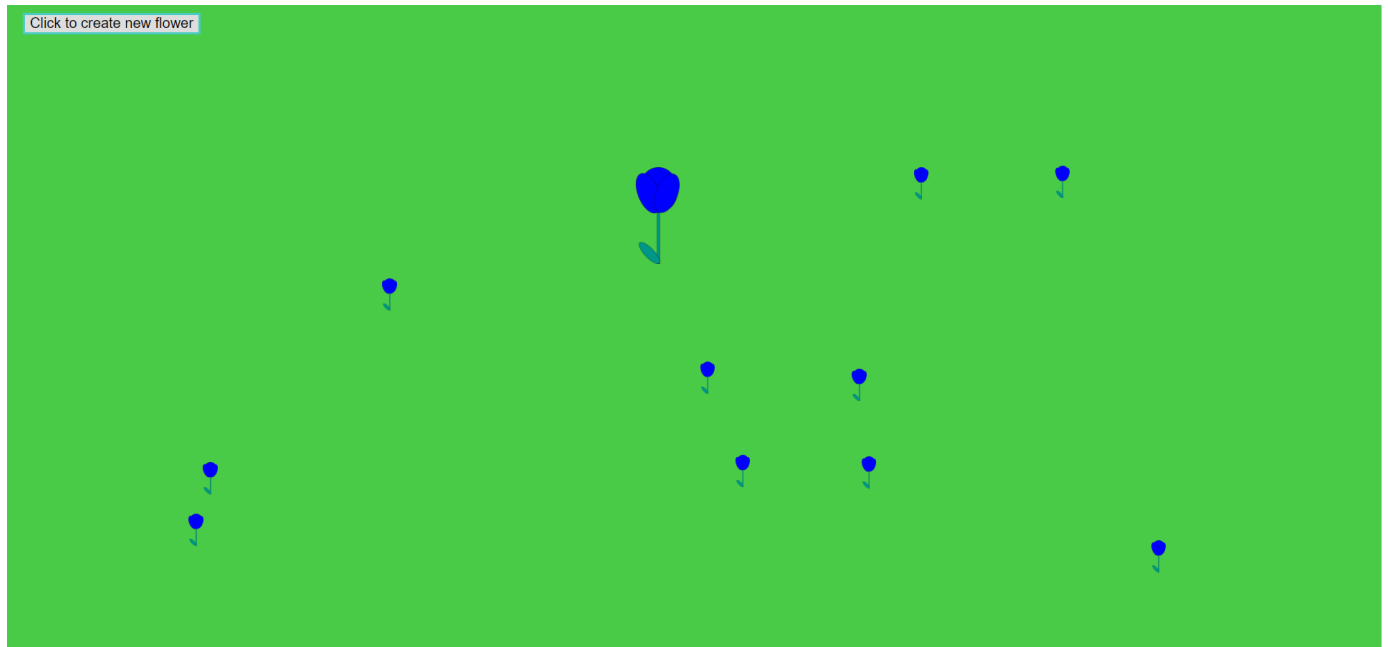
Our clients wanted a prototype working by Halloween and this is what we delivered. The design is very simple in visual appeal, but the proof of concept was there. We had one member create a flower in a graphical design software and we used it on the page. The user clicks the button at the top and a form comes up where they can type information and then submit their flower. This causes the flower to be added to a random place on the page and when you hover over the flower of your choice it grows in size.
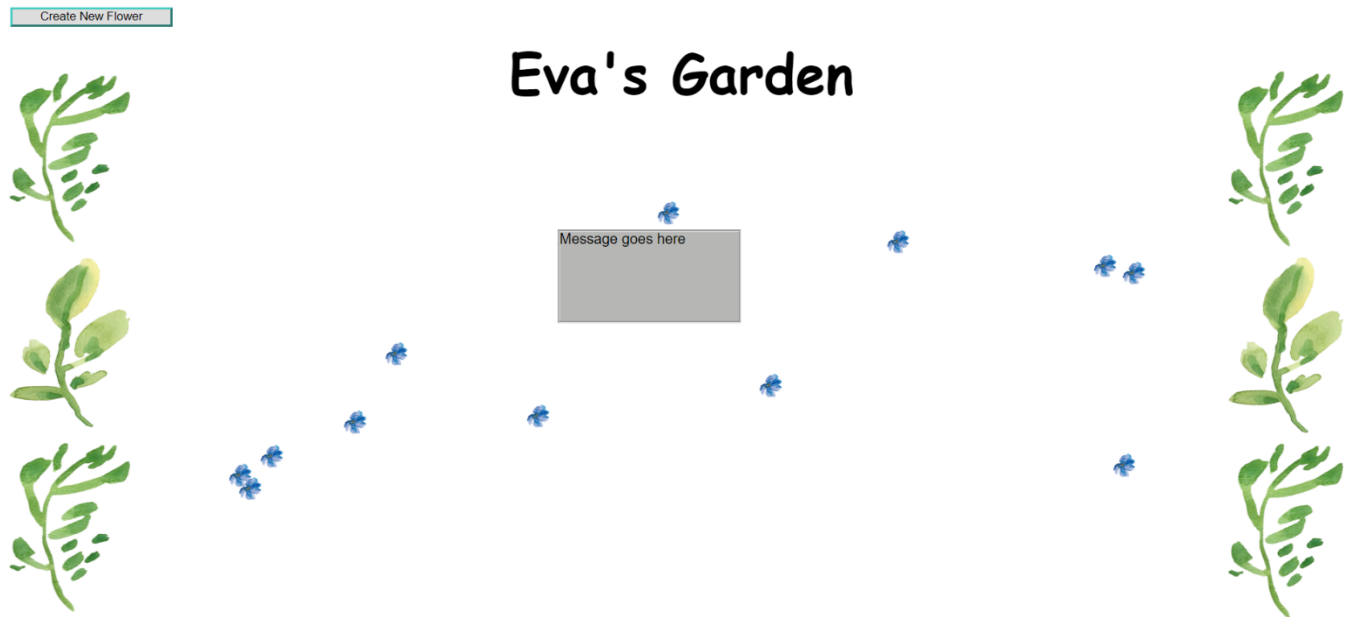
Circular Flower Generation
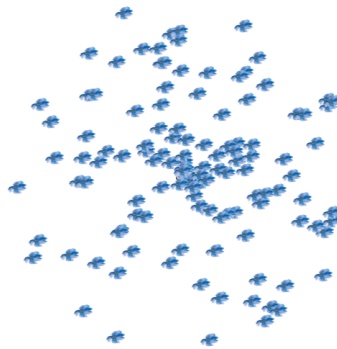
After a follow-up meeting with our clients they discussed the potential for wanting random flower generation in a circle around a certain point. This lead to this very stripped design that does just that. This also included the first use of our custom water color flower images bought by WFYI.

<u>Updated Form and Graphics</u>

In this first image we see an updated webpage both graphically and functionally. The page incorporates more water color images along with a box that will eventually display the users message.

This second part of the updated website is one that showcases the new form. Although not styled, the new form comes up in its own space while also darkening all other elements around it.

Final Presentation Demo
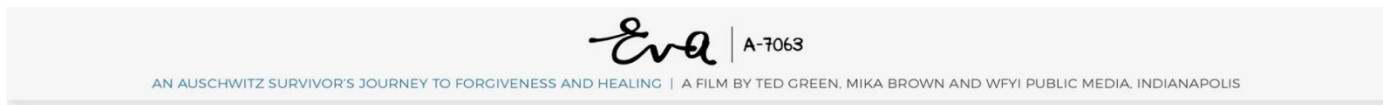
This image is the header for our website and it includes two images provided by WFYI. The top is about the documentary about Eva's life and the bottom is a quote by Eva along with a picture of her.

This image shows the main body of the website. It is here, around this quote of Eva's, that the flowers generate randomly in a circle. These are accompanied by leaves lining the sides like those in the previous images.

This final image shows the updated and styled form for the users input. This form still comes up in its own space and greys out the rest of the site, but it is styled to look nicer and cleaner.

Chapter 5: Implementation

We knew from the start of the project that we were going to be using HTML and CSS to design this website. The first few weeks after meeting with our clients was spent playing with the HTML and CSS to lay the framework. The first thing we focused on was creating what we called a canvas that would serve as a container to generate the flowers in.

We next focused on getting a flower image that could be used to put on screen. Emily created a basic one for us to use and we started using that as our image. This led to some research and implementation of JavaScript using a function to randomly generate the flower on the canvas. We started initially by just adding the flower to the body, or the entire website, but we later figured out how to make the flower a child of the canvas and thus add it to the canvas.

The form was one of the biggest pains and focuses of this project. We started off with a basic popup window that prompted the users name, but we needed something more in-depth. We then discovered the <form> tag in HTML which was exactly what we needed. We attached the form to a button that when clicked the forms display was set from none to block. This made it show up on screen, but it was in the way a lot. We then worked to make it its own window of sorts, with the click of the button making the form appear in the center and greying out the rest of the page in the process. This form was still not styled and looked ugly so that was a next step.

After this we worked to improve the visuals of the website. We went with a white background and started to incorporate watercolor images that WFYI had purchased for us. These helped the site look a lot nicer and it made the blue flowers on screen pop a lot more. Along with this improvement of visuals we also played around with different ways to generate flowers including randomly on the canvas or in a circle.

The final product on the website end is a combination of all the different aspects from the semester. We made a page with lots of images from WFYI and we have a form that generates in its own window

with it being styled, and the flowers generate on the canvas randomly around an image and in a circle. The project happened in many stages, but in the end all of the different things we learned came together to make the final product.

On the backend side of things, we had a bit more trouble. Given that no one in the group had worked much with databases we had to learn it from scratch. Dylan worked really hard all semester to create and connect a database to our HTML website. We used SQL to create the database a long with python to serve up requests from user input from a form. This took a while to get just right, but in the end, it works great with the database storing all of the users information. The final step was to connect the full website to the database. Dylan and Andrew sat down and worked to integrate the two together and as of the end of the semester they have the website site talking to the database and storing all user's information in it.

Chapter 6: Quality Assurance and Testing Lead

The bulk of our quality assurance testing was done on the front end of the website. Dylan worked with his code to hammer out some kinks and test the database to see what was allow or not, but most of it was pretty straightforward.

The common issue when using HTML and CSS is that websites do not scale properly when the window size is shrunk down. This was a big part of testing the website and the parts of it. Every image had to be sized in CSS according to percentages so that when the window shrunk so did the image. This caused some spacing issues and other things to be a problem that when testing Andrew and Maeve discovered and fixed. The lead testers on the front end were both Maeve and Andrew and they checked most of the parts of the website and ensured it was working at all sized and in all ways.

Chapter 7: Project Organization & Management

Our team consisted of four members: Andrew Stinson, Maeve McCormack, Dylan Bakr, and Emily Efroymson. Andrew was the team lead for this project and so we worked closely with the clients to gather the information they wanted and set up meeting times. During daily meetings and meetings with the clients Andrew was usually the one to speak and communicate what needed to get done and how task should be deliberated. He also worked on the weekly status updates and handled sprint feedback notes from other teams. Alongside this Andrew also worked as one of the main HTML, CSS, and JavaScript programmers on the front-end side of the website.

Maeve McCormack worked initially as the Epics website manager. She uploaded all important documents and designed our Epics page for Fall 2019. Alongside of this Maeve also

worked on the HTML, CSS, and JavaScript with Andrew. She worked on the new and final modal design along with helping to create a functioning website by the end.

Dylan Bakr was our database expert. He worked all semester to create, connect, and fix the database that held the user's information. He used languages like SQL and Python, both new to him, in order to get these things done. He also worked with Chris from WFYI to talk about the logistics of the website and how to implement many aspects of it.

Emily Efroymson worked on many different areas of the project really filling in where she needed to. She initially designed our first flower prototype that was used in our Halloween version. Beyond this she worked with WFYI to get watercolor images that would look good on the site and as a result she served as a graphical design consultant for Andrew and Maeve in terms of what pictures to use and how to position them on the website.

The team all together worked on the Sprint presentations, final poster, and final presentation. Each member was able to add what they knew about the project and contribute to all of the Sprint presentations.

Chapter 8: Future Work

Our team this semester was really happy with what we were able to accomplish working with WFYI. This does not mean we were able to do everything we wanted to in the time allotted. Moving forward into next semester we would love to see another group pick this project up and refine it and get it ready to launch live by the end of Spring 2020. There are a number of smaller and larger scale items we would like to see accomplished, lets start with the smaller and work bigger.

Some smaller scale things to be addressed next semester is the form, z-index issues, and containers of images. With the form on the website all of the CSS is done in pixel counts not percentages. This causes the form to be huge even when the window is smaller. This is not a big change, but will take some time and should be look at relatively early on. Currently as the website stands there are popup textboxes that come up when the user hovers over a flower. This textbox often will overlap either the center image or the ones on the side. Z-index in CSS needs to be addressed in order to make the box show up in front of any other element, but some work should be done to avoid this overlapping to begin with. The final thing is that the containers that hold the left and ride side leaf graphics extend down to the bottom of the page. This causes the bottom graphic to act up during some resizing of windows. This needs to be looked at as we have no idea why this is happening.

The bigger things that we need to look at are connection from the website to the database and back again, language filters, and variety. The database is set up and running and it can store data from the form,

but we are unable to redirect the page back to the garden after the user clicks submit. This is an issue in the python. The other problem is we have not yet established a firm connection from the database to the website. We can go one way, but not the other. We need to get this connection established as it will be important for grabbing user's flowers with a search bar or some other tool. A language filter is incredibly necessary in order to push this website out. Given that it is an issue that deals with a person of Jewish background, foul language and anti-Semitic remarks need to be filtered and prohibited before this can go live. The final touch that would be very nice would be some variety in the color and style of the flowers one can plant. We already own the images it would be a matter of coding it into the JavaScript and pulling the write file.

Overall, we are really happy with all that we were able to do this semester, but we really do hope another group takes on this project if given the chance to. This project is important for WFYI and for Eva's memory and it deserves to be done to a high degree in order to honor her legacy and spread her message.

Appendix

Weekly Status Reports

WEEKLY STATUS REPORT (WSR)
September 30, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 9/16/2019-9/22/2019

I.   RED FLAGS: none

II.   ISSUES: none

III.   ACCOMPLISHMENTS (dates):

9/16/2019
- Talked about the project and what we know we need to start on
- Decided on a date that worked for us to meet with the client
- Emailed the client and set up first meeting for 9/25/2019

9/18/2019
- Divided up basic roles for the project
- Began research on our respective roles
- Researched Eva's life story

IV.   ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Watching Eva's documentary (All)
- Meeting with Chris and Jessica from WFYI (All)

WEEKLY STATUS REPORT (WSR)
September 30, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for 9/23/2019-9/29/2019

V.   **RED FLAGS:** none

VI.   **ISSUES:** none

VII.   **ACCOMPLISHMENTS (dates):**

9/23/2019
- Watched Eva's documentary all together and talked about the impact

9/25/2019
- Meeting with Chris and Jessica from WFYI
  - Discussed necessary parts of project
  - Talked about Eva's legacy
  - Viewed VR tool used to tell her story

VIII.   **ACTION ITEMS FOR FOLLOWING WEEK (dates):**

- Set up date for next meeting at WFYI (All)
- Start coding basic user interface (Dylan)
- Work on Epics Website page (Maeve)
- Research flower designs (Emily)
- JavaScript research (Dylan & Andrew)

WEEKLY STATUS REPORT (WSR)
October 7, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 9/30/2019-10/6/2019

IX. **RED FLAGS:** none

X. **ISSUES:** none

XI. **ACCOMPLISHMENTS (dates):**

9/30/2019
- Discussed past meetings notes and where to go in the next few weeks
- Talked about next meeting date (set for 10/9/2019 at WFYI)
- Dylan presented basic Java user input for information

9/2/2019
- Worked on weekly updates for past 2 weeks
- Finished updating the EPICS website
- Took a team picture (see website)
- Dylan began research on databases for next step of user interface

XII. **ACTION ITEMS FOR FOLLOWING WEEK (dates):**

- Meet with WFYI next Wednesday (10/9) (All)
- Research/learn basic SQL (Dylan & Andrew)
- Research basic JavaScript graphics for canvas (Maeve)
- Type up meeting notes from first client meeting (Andrew)
- Research graphical design software for flowers
  in the garden (Emily)

WEEKLY STATUS REPORT (WSR)
October 14, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 10/7/2019-10/13/2019

I. RED FLAGS: none

II. ISSUES: none

III. ACCOMPLISHMENTS (dates):

<u>10/7/2019</u>
- Stand up meeting talking about moving forward
- Dylan researched and set up basic database
- Maeve researched JavaScript and HTML started coding the canvas
- Emily played with graphics software for flower design
- Andrew worked on updating notes and weekly update

<u>10/9/2019</u>
- Meeting with WFYI at WFYI
- Picture with director of film and clients

IV. ACTION ITEMS FOR FOLLOWING WEEK (dates):

- Power point presentation for Sprint 1 (All)
- Graphical flower design (Emily)
- JavaScript and Database compatibility (Dylan)

WEEKLY STATUS REPORT (WSR)

October 14, 2019

TO: Dylan Bakr, Emily Efroymson, Maeve McCormack,
             Professor Linos

FROM: Andrew Stinson

SUBJECT: Status report for week 10/14/2019-10/20/2019

V.   **RED FLAGS:** none

VI.   **ISSUES:** none

VII. **ACCOMPLISHMENTS (dates):**

          10/14/2019
          - Presented Sprint 1 presentation to class
          - Received feedback from class and discussed our first few weeks as a team and what to do moving forward
          - Discussed steps that needed to be taken before Halloween deadline for clients

          10/16/2019
          - Designed first graphical flower for canvas (Emily)
          - Worked on basic HTML page for website (Maeve & Andrew)
          - Researched Databases and how to implement (Dylan)

VIII. **ACTION ITEMS FOR FOLLOWING WEEK (dates):**
          - Work on more variety of flowers: colors, design (Emily)
          - Change outline of the flower to white for better visibility (Emily)
          - Continue designing website (Maeve & Andrew)
          - Work on creating a form in JavaScript to collect user input (Dylan)

WEEKLY STATUS REPORT (WSR)

October 21, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 10/21/2019-10/27/2019

IX.   **RED FLAGS:** none

X.   **ISSUES:**
- Create a random function that doesn't generate a flower off the screen partially

XI.   **ACCOMPLISHMENTS (dates):**

10/21/2019
- Created a button that randomly puts a flower on the screen

10/27/2019
- Created a form to collect basic user input
- Tied the form to the website and then clicking submit on the form paces a flower randomly on the page
- Made multiple colors of flowers for future choices

XII.   **ACTION ITEMS FOR FOLLOWING WEEK (dates):**
- Design the website so when you hover over a flower the message comes up (Maeve & Andrew)
- Tie the database to the website so we can tie their information to the flower and pull it up when the user hovers (Dylan)
- Contact clients to set up meeting for presentation of website (Andrew)

WEEKLY STATUS REPORT (WSR)
October 28, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 10/28/2019-11/3/2019

XIII.   **RED FLAGS:** none

XIV.   **ISSUES:** none

XV.   **ACCOMPLISHMENTS (dates):**

10/28/2019
- Worked creating a textbox that shows up when hovering over the flower
- Database integration
- Start research on the poster for end of the year presentation
- Contacted clients to set up a meeting for next Wednesday November 6th

10/30/2019
- Limited the flower generation to the canvas
- Accomplished the textbox coming up on hover of the flower

XVI.   **ACTION ITEMS FOR FOLLOWING WEEK (dates):**
- Meeting with WFYI to show prototype! (All) (11/6/2019)
- Connect database to website (Dylan)
- Stylize textbox that displays when hovering on flower (Andrew and Maeve)

WEEKLY STATUS REPORT (WSR)
November 4, 2019

___

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 11/4/2019-11/10/2019

XVII. **RED FLAGS:** none

XVIII. **ISSUES:** Database implementation

XIX. **ACCOMPLISHMENTS (dates):**

<u>11/4/2019</u>
- Finished textbox on hover for flower
- Worked on database connection (really close)
- Worked on Sprint 2 presentation

<u>11/6/2019</u>
- Meeting with WFYI
- Worked with them for plans moving forward into the next month

XX. **ACTION ITEMS FOR FOLLOWING WEEK (dates):**
- Sprint 2 Presentation (11/11/2019) (All)
- Database implementation (Dylan)
- Create the form in its own window on click of the button (Andrew and Maeve)
- Talk with WFYI graphic designers to get some images for the site (Emily)

WEEKLY STATUS REPORT (WSR)
November 11, 2019

TO: Dylan Bakr, Emily Efroymson, Maeve McCormack,
           Professor Linos
FROM: Andrew Stinson
SUBJECT: Status report for week 11/11/2019-11/17/2019

I.   **RED FLAGS:** none

II.   **ISSUES:** none

III. **ACCOMPLISHMENTS (dates):**

          <u>11/11/2019</u>
          - Sprint 2 presentation
          - Database implementation
          <u>11/13/2019</u>
          - Database work
          - Generated flowers in a circle around a central point
          - Worked on generating a form in a separate window
          <u>11/14/2019</u>
          - Dylan met with Chris from WFYI to work on database

IV.   **ACTION ITEMS FOR FOLLOWING WEEK (dates):**
          - Sprint 2 feedback (All) (11/18/19)
          - Finish database implementation (Dylan) (11/18/19)

WEEKLY STATUS REPORT (WSR)
November 18, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 11/18/2019-11/24/2019

V.   RED FLAGS: none

VI.   ISSUES: none

VII.   ACCOMPLISHMENTS (dates):

10/18/2019
- Worked on website functionality
- Generated flowers in a circle around a center point
- Started to incorporate graphics from WFYI into the webpage

10/20/2019
- Went over sprint 2 feedback with the team
- Discussed goals moving forward
- Worked on database implementation

VIII.   ACTION ITEMS FOR FOLLOWING WEEK (dates):
- Thanksgiving Break ☺

WEEKLY STATUS REPORT (WSR)
December 2, 2019

TO: Dylan Bakr, Emily Efroymson, Maeve McCormack,
              Professor Linos
FROM: Andrew Stinson
SUBJECT: Status report for week 12/2/2019-12/8/2019

IX.   RED FLAGS: none

X.   ISSUES: none

XI.   ACCOMPLISHMENTS (dates):

12/2/2019
- Designed the visual side of the website
    - Form generates in its own window
    - Flower graphics run down the side of the screen
    - Incorporated heading to webpage
- Worked on database implementation
- Worked on poster
- Worked on Sprint 3 presentation

12/4/2019
- Sprint 3 presentation
- Set up a meeting with clients before presentation

12/5/2019
- met to incorporate HTML code and the working data base!

XII.   ACTION ITEMS FOR FOLLOWING WEEK (dates):
- Meet with WFYI (12/9/2019)
- Finish backend implementation (12/11/2019)
- Finish poster (12/11/2019)
- Finish front end HTML and CSS code (12/11/2019)
- Prepare for final presentation (12/11/2019)

WEEKLY STATUS REPORT (WSR)
December 9, 2019

TO:	Dylan Bakr, Emily Efroymson, Maeve McCormack, Professor Linos
FROM:	Andrew Stinson
SUBJECT:	Status report for week 12/9/2019-12/15/2019

XIII. **RED FLAGS:** none

XIV. **ISSUES:** none

XV. **ACCOMPLISHMENTS (dates):**

12/9/2019
- Meeting with WFYI one final time
    - Talked about final changes to be made before the presentation
    - Talked details about final presentation
- Worked on website to make changes the client wanted

12/11/2019
- Showed final presentation of website to team
- Worked on the poster

XVI. **ACTION ITEMS FOR FOLLOWING WEEK (dates):**
- Finish database integration (by Final)
- Finish poster (by Final)
- Finish all other documents for final (by Final)
    - Slideshow
    - Final report
    - Weekly status report

References
1. https://www.wfyi.org/
2. https://www.thestoryofeva.com/
3. https://www.amazon.com/Eva-7063-Ted-Green/dp/B07YTLY81L/ref=sr_1_1?crid=1BI2A3LGJX0R2&keywords=eva+a-7063&qid=1571076165&sprefix=eva+a-%2Caps%2C165&sr=8-1