UGAHacks Project Log Template

Project Information

Project Title: Rocking with AI

Team Members: Sri Harshitha Varanasi, Kavya Mohankumar, Krishna Chaugule

Tier Level: Beginner

Project Description: The concept behind this project was to create a multi faceted tool for musicians with a heavy focus on rock. One of our main features is a way to utilize AI models to either generate music or enhance existing tracks that the user uploads. This feature is meant to inspire upcoming artists and let them explore tracks while being able to see their own work grow with it. This site also offers users the opportunity to 'collaborate' with established artists through the use of the Spotify database and an AI model. To start, the user can either choose to browse through the available artists or search the name of their preferred artist. Then, they can collaborate with that track. Our most creative feature was the implementation of a 3D model that allows the user to choose their concert experience based on their chosen genre of rock.

Roles of the group members: Although each of us helped the other one out with whatever they are working on, we did specialize in some roles.

- Sri Harshitha Varanasi: Focused on hard coding the spotify artist carousel webpage and building the 3-D model with python scripting (simulation of a concert) to include in the website.
- Krishna Chaugule: Focused on creating the website and implementing web pages. Often dealt with HTTP and CSS code to hardcode some parts of the website.
- Kavya Mohankumar: Focused on using AI and APIs to generate AI content that the artists could use in their work, such as tunes, music and voices.

Friday

Welcome to UGAHacks __ ! We're excited that you're participating and revving up for an amazing weekend! Today will be short, but we advise you to settle on a project and create a plan to guide you! Already have something in mind? Now's a great time to get started!

Goals:

- [ ] Goal 1: Create a basic outline of how our website should look like and what tools we should use to create the website.
- [ ] Goal 2: Figure out if we can build an AI model using Amazon sagemaker
- [ ] Goal 3: List out what services our website should provide
- [ ] Goal 4: Draw out how our website should look like.
- [ ] Goal 5: Figure out what tools to use for the 3-D part of the project.

Progress:
(Describe what was accomplished): Before we started to do anything, we brainstormed and had come up with an idea to build a website that would essentially serve as an all in one application for artists. We draw pages of how we want the website to look like and the UI should be incorporated to get an idea of our base plan and to collaborate better. We brainstormed services that our website would provide for the artists and how we would connect AI to those services. We thought in the perspective of an artist and brainstormed what services they would need to be successful. Since we spent most of the time brainstorming, we didn't really get started until 10 PM. BY 12, we had decided to use Wix to make our website and had our front page made. We also had skeletal code for the carousel that we wanted to create, to let artists collaborate with existing artists. We still wanted to build an AI model and feed in the code provided by HPCC, but it did not work out as it involved complicated code.

Challenges:
1. Challenge 1: We found out that AWS sagemaker didn't really work the way we wanted it to because it involved a lot of hard coding and new things that we weren't fully familiar with. It also was pricey as we had to pay money to launch and work with certain notebook instances. Long runtime would have also caused more charges on the account so we could not build an AI model.
   - Solution (if found): We did not use AWS sagemaker to build an AI model
2. Challenge 2: We had difficulty achieving a parallax scrolling effect on our hard coded web pages.
   - Solution (if found): We decided against hard coding it and proceeded to use Wix for the web designing.

Learning:
(List key concepts or skills learned)
- Parallax scrolling effect on websites
- API usage
- Deeper aspects of HTML
- Different AWS services
- Learned about HPCC

AI Usage (if any): Yes, we used AI to help us.

Tool used: ChatGPT
Purpose: *For finding out free tools to use, asking questions and learning new concepts.*
How it contributed to learning: *We are often stuck with only ideas but have no idea on how to implement them, and when we ask ChatGPT about how to implement an idea, it often lists out the resources we could use and guides us with steps for getting started. For example, ChatGPT helped us decide that we would use Wix to design our website. It often provides a clear explanation of what a tool is and how it works so it's useful for beginners like us to get started.*

Saturday

Saturday is the longest day of the Hackathon! The bulk of your project will get done within today, so set your goals wisely!

Goals:

- ☐ Goal 1: Develop a 3-D model that simulates a concert experience for the artist.
- ☐ Goal 2: Build the actual website. Some of the website building involved hard-coding while others involved using Wix to build our website.
- ☐ Goal 3: Make the spotify carousel by connecting it to a spotify database using an API.
- ☐ Goal 4: Find a way to make AI generate tune/songs using other build AI models

Progress:
The song carousel menu, built using the Spotify API, allows users to manually search for songs and browse results in an interactive, scrollable format. When a user enters a song title, artist name, or keyword, the system queries the Spotify API's search endpoint to retrieve relevant tracks, displaying them in a visually engaging carousel. We looked through a lot of websites that would offer us a free API and would generate music. A lot of the websites required us to pay money to use their API and tools so we had to be careful in choosing which website to use. We found a few websites that will give us a free API. Then we created a python script that would use the API to redirect the request to the end point(website). It took a long time to create a python script that actually worked and we did use AI in this to generate some code.

Challenges:
1. Challenge 1: We came to the realization that there was no VR hardware(VR headset) so we couldn't develop the Virtual Reality program for our project. We ended up improvising, and created a 3D model and animation of a first person concert performance experience. We had to learn how to use Blender on the spot and learn how to create python scripts to generate the necessary scenes for the visual.

- Solution (if found): We watched tutorials on basic Blender features and implemented what we learnt into python scripts.
2. Challenge 2: Wix required us to upgrade(for a hefty amount) to include our own custom, hard coded websites. We weren't ready for the financial implications of this aspect of the project.
- Solution (if found): We collectively decided to continue using the regular, free version of Wix.

Learning:
(List key concepts or skills learned)

- Python Scripting
- Lighting and effects
- Camera animation and movement
- Rendering and exporting animations

AI Usage (if any): Yes, we used AI to help us.

Tool used: ChatGPT
Purpose: *For debugging, asking questions and learning new concepts.*
How it contributed to learning: *AI played a key role in developing our Spotify API-powered song carousel by guiding us through API integration, troubleshooting, and UI-design. It helped us structure our program for handling search queries, refine code when we faced issues, and optimize the carousel.*

Sunday

Submissions are due at 8AM today!! Fit in your final touches for the project and make sure to check the submission checklist below to ensure you're ready for judging!

Goals:

- ☐ Goal 1: Finish the README file for the project
- ☐ Goal 2: Check if the website is actually working and running
- ☐ Goal 3: Upload all the code in GitHub and set up for submissions.
- ☐ Goal 4: make a video that would explore our project(in this case clicking through our website)
- ☐ Goal 5: Submit our project before 8 A.M.

Progress:
(Description was accomplished): We stayed up all night fixing errors in the website and implementing our services into the website.

After writing python scripts that would use API to redirect to the original website, we wrote HTML scripts to design the website where it would look better. We also wrote and ran a bunch of python scripts(with HTML code embedded) that would take user inputs and then make the API calls using the user input. This would give us an output that is specific to the user input. Additionally, majority of the 3-D part of

Challenges:
1. Challenge 1: We could not find a way to embed our AI song generation website into our original Rocking with AI website. Since Rocking with AI is a website that is generated on the Wix platform, we could not embed our other website inside this one as the other website was hard coded using HTML and python. Our hard-coded website is 'http' while Wix only takes 'https' so we had to convert our hardcoded websites which generated AI content(and included API calls) from http to https. Once we converted it, we could not access the website, no matter what so we went back to the 'http' form. This made us show the website separately(not embedded in the actual website).
   - Solution (if found): We just had to display the website on another computer during presentations which seemed unprofessional.
2. Challenge 2: We used the tool Blender to create the 3-D model. No one in our group has worked with Blender so it was hard to learn the tools associated with Blender at first. We had trouble with camera animations.
   - Solution (if found): We had to learn how to use Blender on the spot and within 8 AM.

Learning:
(List key concepts or skills learned)
- Blender basics
- Camera Animations
- Setting up the lighting
- Improvisation
- Presentation skills

AI Usage (if any): Yes, we used AI to help us.

Tool used: ChatGPT
Purpose: *Help with coding, step-by-step guidance, and useful responses.*
How it contributed to learning: *Assisted us in understanding technical concepts, troubleshoot issues and improved efficiency in our project. AI provided step-by-step guidance on using Blender, including camera animations and lighting setup. Using AI along with many Youtube tutorials allowed us to learn the basics much faster, allowing us to spend more time on the actual python scripts that bring the animation to life. When facing errors, AI helped us troubleshoot efficiently.*

Submission Checklist

Make sure to submit on the UGAHacks __ Devpost at 8AM on Sunday!

- ☑ Project Github Repo
- ☑ Readme file (summary of project log)
- ☑ Completed Project Log as PDF
- ☑ Live Project Site (optional)