BUSA611: Maya Website Independent Study Project with Autodesk

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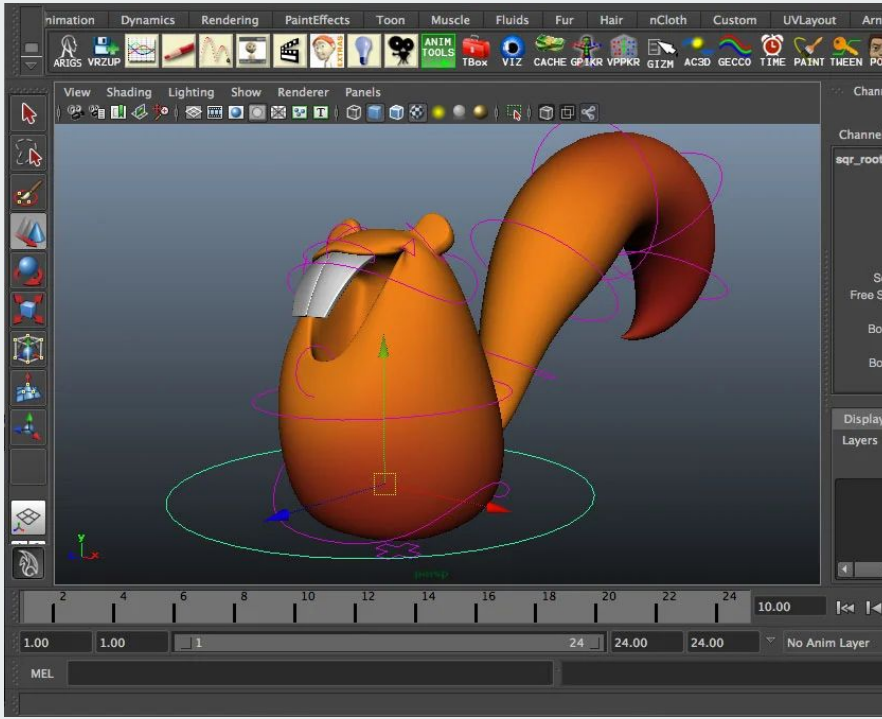


Agenda

1. Executive Summary
2. Value Proposition – Strategy
3. Prototyping – UX/UI
4. Website Development – Technical
5. Appendices

Executive Summary

What is Maya and Autodesk?

- **Autodesk** is a software company that produces software products for **architecture, constructions, entertainment** industries and so on
- **Maya** is one of Autodesk's product, which is a **3D computer graphics application**
- The Maya data is collected as **waypoint, attributes, and commands****, which keep tracks of user actions and command usages

Pain Point

- The Maya team currently is lacking a **centralized tool** where internal stakeholders such as project managers (PM) can easily determine if **data that they need is available without complex querying**
- The internal users need a tool that can be **easily used** to help them u**nderstand what information is available** in their decision making process and **what can be done** to **improve the product**

Change of Scope

Original scope:
45% Solution Architect
33% UX/UI design
12% Business strategy
10% Project Management (Creating slides, etc)

Changed scope***:
20% Solution Architect
40% UX/UI design
30% Business strategy
10% Project Management

Approaches

- Communicate with stakeholders to understand the business requirement
- Obtain a **static data source** for the project
- Create a **prototype design** using Figma* for designing the **webpage** and prototyping better **visual**
- Develop the website, and will deliver a folder containing **website development scripts**

Recommendations

- The website should include **a search bar** where users can input required keywords
- A **filtering menu** to choose categories in case users might not have keywords, but instead they only have **a set of rules to filter**
- It will also show all the waypoint, attribute, and command prior to any filtering

*Figma is a collaborative web application for interface design
** The detailed definition of waypoint, attribute, and command will be in the appendix
*** Detailed reasoning will be discussed on page 7: Website Development – Front-end

Value Proposition

Objective & Insights

To deliver a proof of concept stage of website that generates important Maya data points for internal users. These data points can be used to product usage information that could be used to help improve product quality and understand customers' needs better. Therefore, the goal is to provide an easy to use platform to quickly access data availability without complex querying.

Quantitative value

- On average, help internal users save 1 hour per simple requirement, and 4 hours per complicated requirement
- Reduce the needs to run repeated or unnecessary SQL queries
- The new platform can save roughly $10,000 annually with a maintenance cost of $1000

Qualitative value

- Improve productivity and accessibility, and thus enhance performance
- Reduce potential error when sharing information, and increase autonomy and accuracy
- Provide technical driven solutions help to innovate in the technical field

Prototyping*

User persona

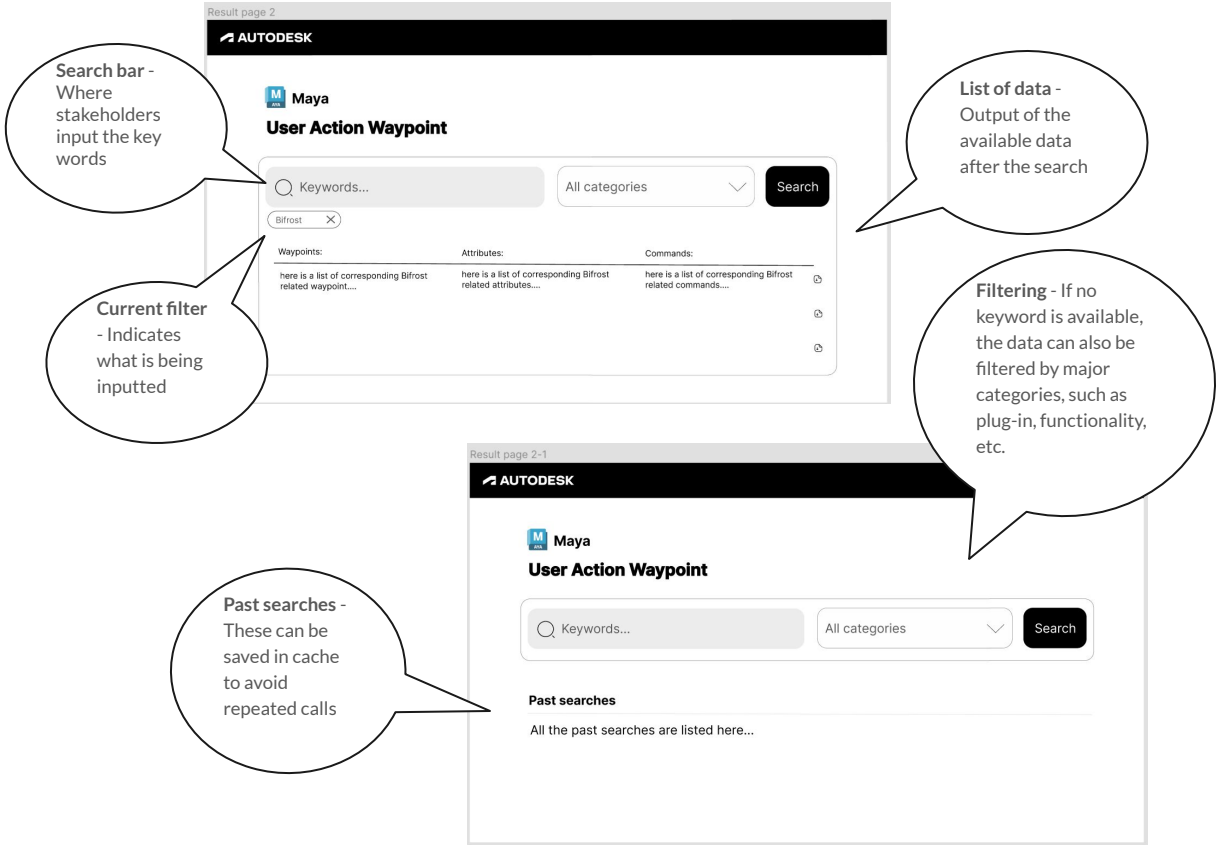
Internal stakeholders within the EMS team at Autodesk who want to check data availability quickly without going through complex querying

Information architecture

The website should display all the available Maya datapoints, as well as the ability to filter and search for keywords; The data should be easy and fast to find

Wireframe

In total, three versions of wireframes were created. The best version is shown on the right hand side. The tool used for the wireframing process was Figma



*Please refer to the BUSA611_UX_Demo for detailed explanation of the prototype and the individual features

Website Development – Backend

Sample Data

- Provided by the stakeholder (Autodesk)
- Json format
- Has three major features: waypoint, attributes, and command (more detail in the appendix)
- Contains roughly 1000 records
- Can be stored in separate relational database

Tools & Methodology

- For the backend, Flask was majorly used for development because it is a more accessible framework and provides great flexibility
- For database, instead of creating a server based SQL database, SQLite was used because it is a serverless database engine and provide easier use
- More packages were used such as SQLAlchemy and Marshmallow

Result & Recommendation

- By implementing the basic backend structure, the server can reach to the database that stores the static data source and return all the data points
- A route to filter out based on users' keywords will also be implemented
- More work will be done to connect it to the front-end of the website

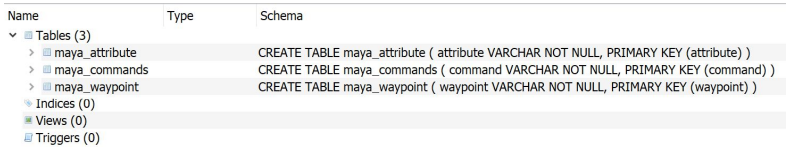


Figure 1: Database design

Website Development – Front-end

Planning and Tech Stack

- The front-end was planned to be built using Typescript/React (with Yarn, ESlint, and Prettier)
- The storybook would be a good resource and tool kit to start building components
- Due to the change in scope, this section was only on the planning phase. The POC was only being planned but not yet completed.
- To improve, a front-end for the website can be built using the tools mentioned above and integrate it with the back-end script

Next Step

- Once the POC website is completed, the team can assess its usability and functionality, and improve it as needed
- The next step would be to connect it to the live data source on either Hive or Snowflake
- Then, test the code to ensure it passes all the requirements and edge cases, and eventually push it to production if needed as an internal helper tool
- Maintain the website and additional features can be added if needed in the future

Future Perspectives and Valuation

- This website project is just one aspect of how we can improve internal stakeholders' productivity; Some processes and tasks can be automated and allow employees to focus on the real problem
- It also provides ideas for how the team can improve internal productivity and to create other tools in the future

Appendices

1. More background information on Maya and Autodesk
2. Definition of waypoint, attribute, and command
3. Scope Adjustment and its benefits
4. Supplementary files
5. Study resources & websites references

Autodesk & Maya

Autodesk is a global leader in design and make technology. With expertise across architecture, engineering, construction, design, manufacturing, and entertainment, Autodesk help innovators everywhere solve today's pressing challenges.

Maya is a professional 3D software for creating realistic characters and blockbuster-worthy effects. It brings believable characters to life with engaging animation tools.

More about Autodesk: https://www.autodesk.ca/en
More about Maya: https://www.autodesk.com/products/maya/overview?term=1-YEAR&tab=subscription

Definition of some key data

- ➔ **Waypoint**: It captures more data than a command. It refers to specific instrumentation in the code that provides data for specific features or functions. For instance, a waypoint can tell if a feature is used
- ➔ **Attribute**: Attributes are related to the waypoint/feature, and it keeps track of additional information to the feature
- ➔ **Command**: Referring to a specific command executed by the user

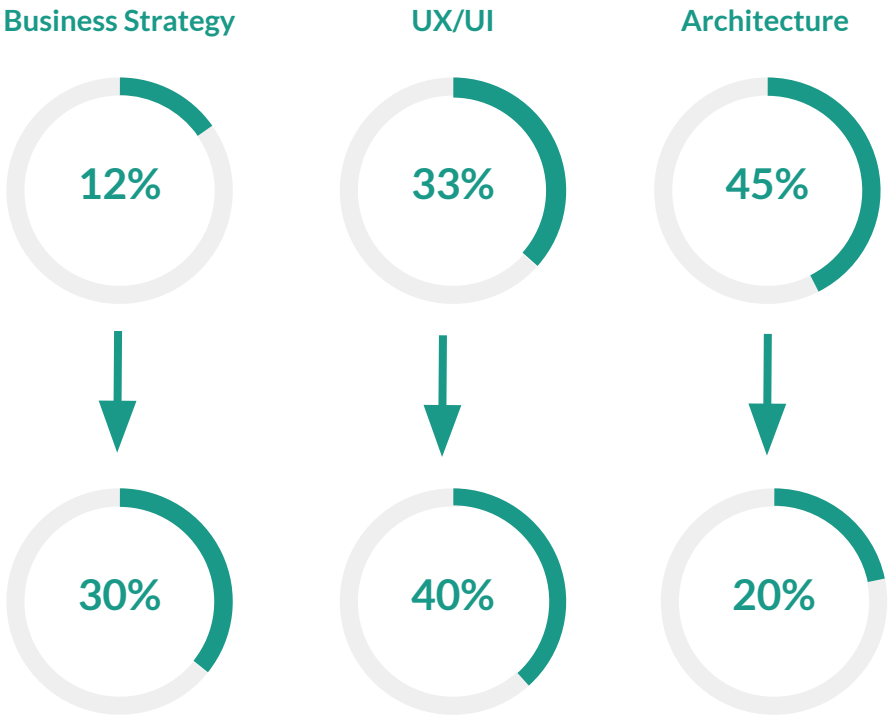
Scope Adjustment & its Benefit

The current stage and outcome of the project is at a satisfactory level, as the initial prototype and the planning of the implementation is completed.

The scope of the project was changed due to unexpected longer time took on prior steps and change of tech stack used in the backend section. To the current stage, the working hour has already fulfilled the course requirement, and it has proven its value to the industry partner. With planned future steps and its valuation, I believe the project will be valuable to the partner, and it satisfy the project requirement itself.

The benefit of the change is that there is detailed explanation for the sections that has been completed, and there are also researches on the sections that are in the planning phase, leaving room for implementation if the project can deem its value from this POC stage model.

% change in the scope based on each section



Supplementary Files

- Strategy supplementary file: McGill Independent Study Business Implication Writeup
- UX/UI files are in the BUSA611_UXUI_supplementary folder
  - Video demo: BUSA611_UI_Demo.mp4
- Web development files are in the BUSA611_WebDev_supplementary folder
  - GitHub
  - Main web dev file: "main.py"
  - Env & requirement file: requirements.txt; venv
  - LinkedIn learning resources: course_example/Exercises Files
- Executive Summary & Slides: BUSA611_AnqiChen_MayaWebProject
- Contribution file: BUSA611_613-ProjectContributions-20220901-ForStudents.xlsx

Study Resources & Websites References

- Various Youtube videos such as Import your JSON file to MYSQL DATABASE using python - YouTube
- All videos from Weblab (MIT): https://weblab.mit.edu/schedule/
- Typescript: Easy start of a Typescript/React project (w/ Yarn, ESlint and Prettier) - DEV Community 👩‍💻👨‍💻
- Storybook: Introduction to Storybook
- LinkedIn learning course:
  - Learning TypeScript
  - Full Stack Web Development with Flask
  - Introduction to Web Design and Development