



TECHNOLOGY REVIEW

SPOTIFY MUSIC RECOMMENDATION SYSTEM

Juntong Wu, Denkie Yan, Chesie Yu

PLAY

CSE 583 Project

Project Overview



Spotify Music Recommendation System · CSE583 · 2023 · np.inf Plays



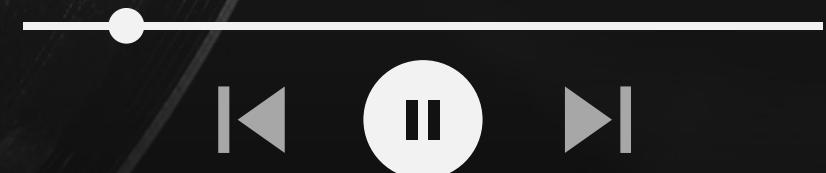
...

Summary:

- Discover **patterns and trends** from the Spotify dataset (i.e., music evolution, popular genre, etc.)
- Develop a music **recommendation system** using content/collaborative filtering
- Design an **interactive user interface** to engage with visualization dashboards and music suggestions

Objective:

- Deliver a **personalized & insightful music discovery experience** for users



Deliverable & Use Case



Spotify Music Recommendation System · CSE583 · 2023 · np.inf Plays



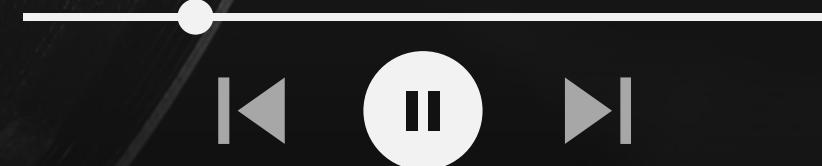
...

Deliverable:

- Interactive user interface that presents historical music insights + provides personalized music recommendations

Use Case:

- Scenario: Dave is seeking personalized music recommendations tailored to his taste
- Input: Dave enters his name on the home page
- Process: The system accesses Dave's listening history/preferences and generates recommendations accordingly
- Output: Provides personalized music profile featuring a custom playlist that reflects Dave's music tastes



Requirements



Spotify Music Recommendation System · CSE583 · 2023 · np.inf Plays



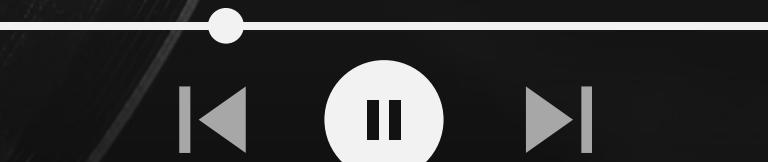
...

Functional Requirements (For Users):

- **Interactivity:** Interactive interface enhancing user engagement
- **Customization:** Customizable controls catering to user preferences
- **Usability:** User-friendly interface simplifying user experience

Other Criteria (For Us):

- **Integration:** Compatibility with other tools and packages
- **Implementation:** Ideally, not too difficult to implement :)



Packages



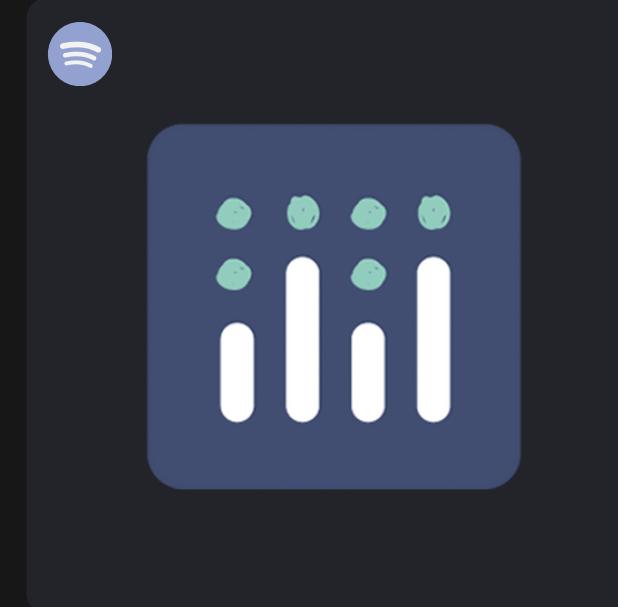
TKinter

- Standard GUI library



Shiny

- Reactive programming engine



Plotly Dash

- Creating interactive web applications



Streamlit

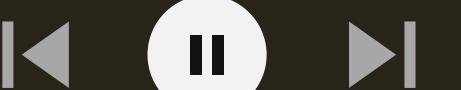
- Python for analytics
- Prototype of dashboard



TKinter

Features

- | # | Features | ✓ | ✗ |
|---|---|---|---|
| 1 | Easy to understand and master | ✓ | |
| 2 | Fast to implement as compared to any other GUI toolkit | ✓ | |
| 3 | Limited Widgets | ✗ | |
| 4 | Older design and it looks outdated | ✗ | |



Your Library



Packages



Recents

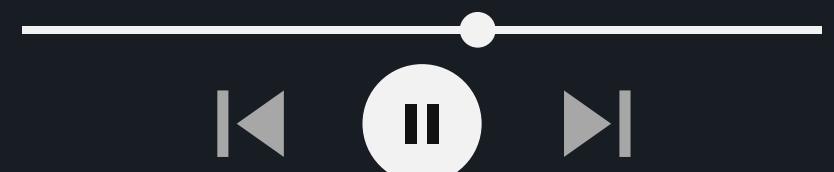
- TKinter**
Package · Python
- Shiny**
Package · Python
- Plotly Dash**
Package · Python
- Streamlit**
Package · Python



Shiny

Features

- | # | Features | |
|---|---|---|
| 1 | Work integrate with popular visualization packages | ✓ |
| 2 | Create highly interactive dashboards with reactive components | ✓ |
| 3 | Required knowledge of Bootstrap to change UI | ✗ |
| 4 | Limited Customization | ✗ |



Your Library

+ →

Packages



Recents



TKinter

Package · Python



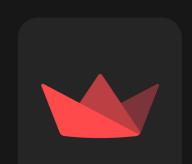
Shiny

Package · Python



Plotly Dash

Package · Python



Streamlit

Package · Python

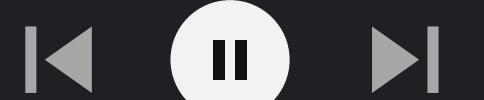


Plotly Dash

Features



- | # | Features | |
|---|--|---|
| 1 | Allow users to explore data in a dynamic manner | ✓ |
| 2 | Compatible with other plotting libraries and languages | ✓ |
| 3 | Doesn't include all the features in the open source version | ✗ |
| 4 | Require some extended CSS and HTML knowledge for customization | ✗ |



Your Library



Packages



Recents



TKinter
Package · Python



Shiny
Package · Python



Plotly Dash
Package · Python



Streamlit
Package · Python



Streamlit

Features

- | # | Features | Status |
|---|--|--------|
| 1 | Easy to use | ✓ |
| 2 | Allow users to input data and view the results in real-time | ✓ |
| 3 | Predefined widgets for presenting various data types | ✓ |
| 4 | Limited customization | ✗ |



Your Library

+ →

Packages



Recents



TKinter

Package · Python



Shiny

Package · Python



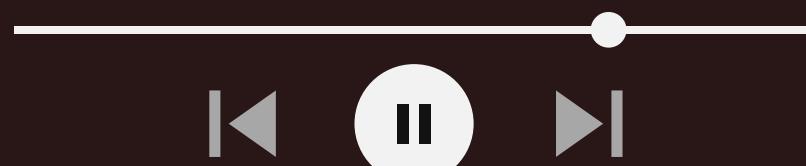
Plotly Dash

Package · Python

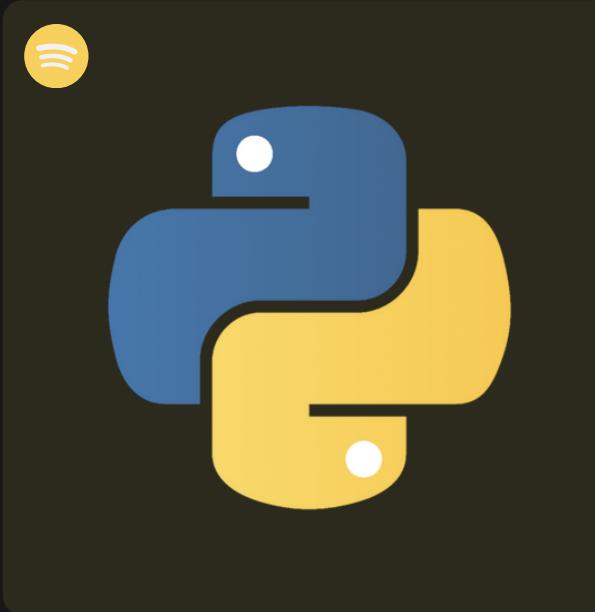


Streamlit

Package · Python



Packages



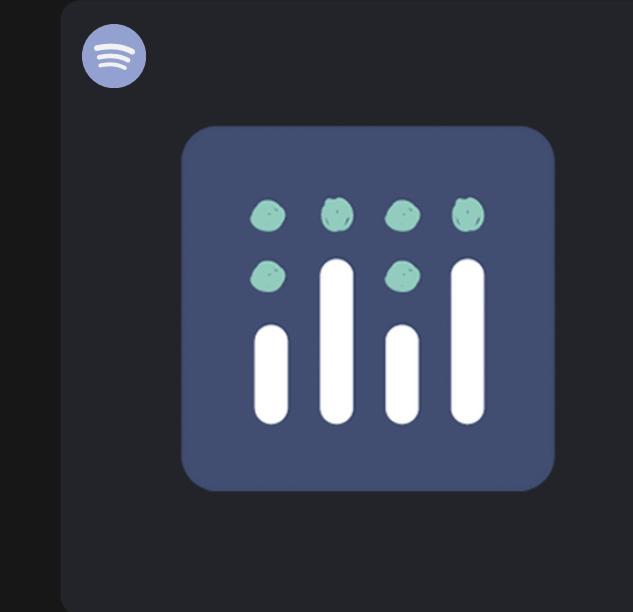
TKinter

- Standard GUI library



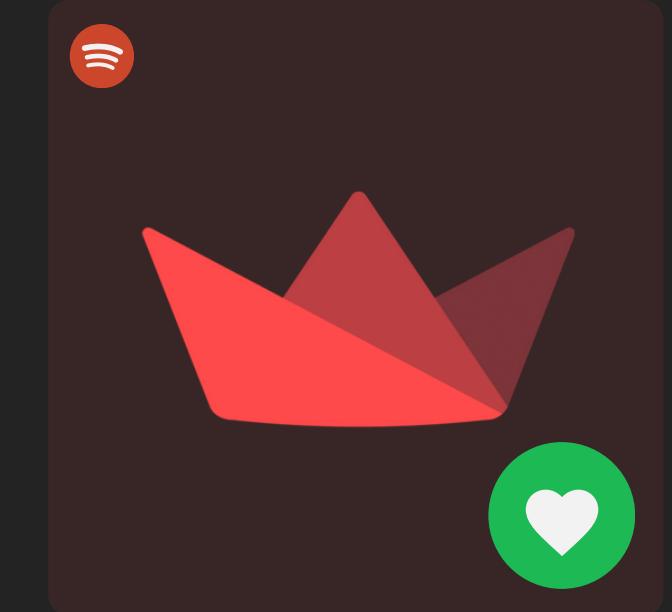
Shiny

- Reactive programming engine



Plotly Dash

- Creating interactive web applications



Streamlit

- Python for analytics
- Prototype of dashboard

Why Streamlit?

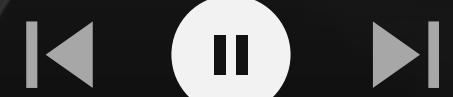


Streamlit Is The Best!! · CSE583 · 2023 · np.inf Plays



...

- Allow users to explore data in a dynamic manner
- Easy to use, no CSS and HTML knowledge requires
- Comes with a range of pre-built components
- Specifically designed for machine learning and data science





THANK YOU!



<https://github.com/CSE583-Fall2023-Project/Spotify-Music-Recommendation-System>



Juntong Wu: juntongw@uw.edu

Denkie Yan: denkie@uw.edu

Chesie Yu: cyu909@uw.edu

PAUSE

