



# Enigma

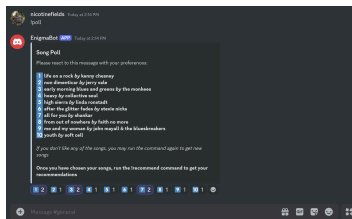
Group 36  
Nico Field, Biruk Tadesse, Riley Joncas

## Why Enigma?

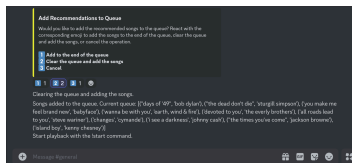
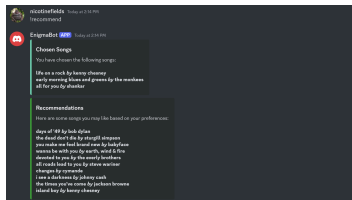
- Easily play songs, create and manage queues, and get song recommendations all within your own Discord server!

## Improvements!

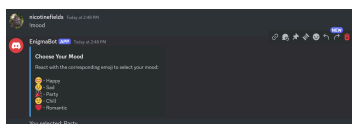
Version 3.0 of this project has come with many improvements on the previous system. Here are some of the big ones:



- **New Poll Command:**  
This new poll command allows you to select up to 10 songs you like in order to curate a custom playlist for you to listen to

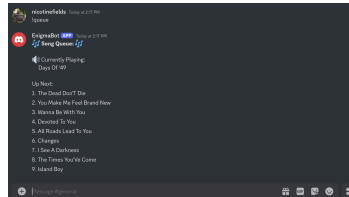


- **New Recommendation Algorithm:**  
Our new and improved recommendation algorithm now uses cosine similarity to identify songs similar to songs you have indicated that you like.

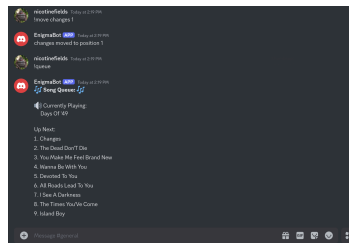


- **New Mood Command:**  
New feature to generate a custom queue of 20 songs based on the user's mood.

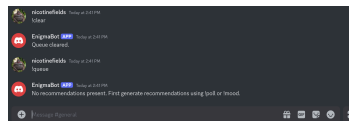
## Improved Queue System:



- **Queue command:** Now outputs the queue in a much nicer format compared to last version where it was just a list of song names



- **New Move Command:**  
Users now have the ability to move songs within a queue by specifying the song and the position in queue



- **New Clear Queue Command**  
New ability to clear queue of all songs
- **Next Song Played Automatically**  
The next song in queue automatically starts playing once the current song stops instead of having to call next song command

## Tech Stack

- Enigma is written and tested entirely in python
- Speaking of testing, Enigma comes with over 51 unique test cases for various features of the bot!
- Tests are written using pytest, along with dpytest, a package used for testing functionality within discord bots!



## Demo Video

Click the link or scan the QR code below to view a live demo of Enigma bot's features!



<https://www.youtube.com/watch?v=CKdSPDz1i18>

## Future Scope

### Fix Audio Quality

- Current audio quality is pretty poor, and songs occasionally speed up/slow down.
- Look into FFmpeg documentation to test better parameters, experiment with different services for better quality.

### Playlists

- Add a new feature to upload a list of songs in a .csv or .txt file to create a playlist that can be saved and played.

### Improved Polling

- Instead of having the bot select 10 random songs for the user to choose from, have the user input the songs they like to send to the recommend algorithm

### Integrate Spotify/Apple Music

- Instead of getting songs from YouTube (which has issues with playing audio that isn't always songs) use other services such as Spotify or Apple Music to get audio.

## GitHub Repo



<https://github.com/NCSU-CSC-510-F2024/Enigma.a.git>

Criteria	Self Score	Evidence
Workload is spread over the whole team (one team member is often Xtimes more productive than the others but nevertheless, here is a track record that everyone is contributing a lot)	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/graphs/contributors">https://github.com/NCSU-CSC-510-F2024/Enigma/graphs/contributors</a>
Number of commits	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/graphs/contributors">https://github.com/NCSU-CSC-510-F2024/Enigma/graphs/contributors</a>
Number of commits: by different people	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/graphs/contributors">https://github.com/NCSU-CSC-510-F2024/Enigma/graphs/contributors</a>
Issues reports: there are <b>many</b>	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/issues">https://github.com/NCSU-CSC-510-F2024/Enigma/issues</a>
Issues are being closed	2	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/issues">https://github.com/NCSU-CSC-510-F2024/Enigma/issues</a>
Docs: doco generated, format not ugly	2	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/docs">https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/docs</a>
Docs: what: point descriptions of each class/function (in isolation)	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/docs">https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/docs</a>
Docs: how: for common use cases X,Y,Z mini-tutorials showing worked examples on how to do X,Y,Z	2	
Docs: why: docs tell a story, motivate the whole thing, deliver a punchline that makes you want to rush out and use the thing	3	
Docs: short video, animated, hosted on your repo. That convinces people why they want to work on your code.	2	
Use of version control tools	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma">https://github.com/NCSU-CSC-510-F2024/Enigma</a>
Test cases exist	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/tests">https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/tests</a>
Test cases are routinely executed	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/actions/w">https://github.com/NCSU-CSC-510-F2024/Enigma/actions/w</a>

Criteria	Self Score	Evidence
		<a href="#">orkflows/run-tests.yml</a>
Issues are discussed before they are closed	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/issues?q=is%3Aissue+is%3Aclosed">https://github.com/NCSU-CSC-510-F2024/Enigma/issues?q=is%3Aissue+is%3Aclosed</a>
Chat channel: exists	3	
Test cases: a large proportion of the issues related to handling failing cases.	1	
Evidence that the whole team is using the same tools: everyone can get to all tools and files	3	
Evidence that the members of the team are working across multiple places in the code base	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/commits/main/">https://github.com/NCSU-CSC-510-F2024/Enigma/commits/main/</a>
Short release cycles	2	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/releases">https://github.com/NCSU-CSC-510-F2024/Enigma/releases</a>
The file .gitignore lists what files should not be saved to the repo. See [examples](https://github.com/github/gitignore)	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/.gitignore">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/.gitignore</a>
The file INSTALL.md lists how to install the code	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/INSTALL.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/INSTALL.md</a>
The file LICENSE.md lists rules of usage for this repo	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/LICENSE">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/LICENSE</a>
The file CODE-OF-CONDUCT.md lists rules of behavior for this repo; e.g. see <a href="#">example</a>	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/CODE_OF_CONDUCT.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/CODE_OF_CONDUCT.md</a>
The file CONTRIBUTING.md lists coding standards and lots of tips on how to extend the system without screwing things up; e.g. see <a href="#">example</a>	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/CONTRIBUTING.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/CONTRIBUTING.md</a>

Criteria	Self Score	Evidence
The file README.md contains all the following	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
Video	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
DOI badge: exists. To get a Digital Object Identifier, register the project at <a href="https://zenodo.org">Zenodo</a>	3	<a href="https://zenodo.org/records/14009527">https://zenodo.org/records/14009527</a>
Badges showing your style checkers	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
Badges showing your code formatters.	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/code-formatter.yml">https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/code-formatter.yml</a>
Badges showing your syntax checkers.	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
Badges showing your code coverage tools	3	<a href="https://coveralls.io/github/NCSU-CSC-510-F2024/Enigma?branch=main">https://coveralls.io/github/NCSU-CSC-510-F2024/Enigma?branch=main</a>
Badges showing any other Other automated analysis tools	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
Question 1.1: Does your website and documentation provide a clear, high-level overview of your software?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
Question 1.2: Does your website and documentation clearly describe the type of user who should use your software?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
Question 1.3: Do you publish case studies to show how your software has been used by yourself and others?	1	
Question 2.1: Is the name of your project/software unique?	2	

Criteria	Self Score	Evidence
Question 2.2: Is your project/software name free from trademark violations?	3	
Question 3.1: Is your software available as a package that can be deployed without building it?	3	
Question 3.2: Is your software available for free?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md</a>
Question 3.3: Is your source code publicly available to download, either as a downloadable bundle or via access to a source code repository?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma">https://github.com/NCSU-CSC-510-F2024/Enigma</a>
Question 3.4: Is your software hosted in an established, third-party repository like GitHub ( <a href="https://github.com">https://github.com</a> ), BitBucket ( <a href="https://bitbucket.org">https://bitbucket.org</a> ), LaunchPad ( <a href="https://launchpad.net">https://launchpad.net</a> ) or SourceForge ( <a href="https://sourceforge.net">https://sourceforge.net</a> )?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma">https://github.com/NCSU-CSC-510-F2024/Enigma</a>
Question 4.1: Is your documentation clearly available on your website or within your software?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md/#Documentation">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md/#Documentation</a>
Question 4.2: Does your documentation include a "quick start" guide, that provides a short overview of how to use your software with some basic examples of use?	3	
Question 4.3: If you provide more extensive documentation, does this provide clear, step-by-step instructions on how to deploy and use your software?	3	
Question 4.4: Do you provide a comprehensive guide to all your software's commands, functions and options?	3	<a href="https://ncsu-csc-510-f2024.github.io/Enigma/">https://ncsu-csc-510-f2024.github.io/Enigma/</a>
Question 4.5: Do you provide troubleshooting information that describes the symptoms and step-by-step solutions for problems and error messages?	1	
Question 4.6: If your software can be used as a library, package or service by other software, do you provide comprehensive API documentation?	3	

Criteria	Self Score	Evidence
Question 4.7: Do you store your documentation under revision control with your source code?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/docs">https://github.com/NCSU-CSC-510-F2024/Enigma/tree/main/docs</a>
Question 4.8: Do you publish your release history e.g. release data, version numbers, key features of each release etc. on your web site or in your documentation?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/releases">https://github.com/NCSU-CSC-510-F2024/Enigma/releases</a>
Question 5.1: Does your software describe how a user can get help with using your software?	1	
Question 5.2: Does your website and documentation describe what support, if any, you provide to users and developers?	1	
Question 5.3: Does your project have an e-mail address or forum that is solely for supporting users?	2	
Question 5.4: Are e-mails to your support e-mail address received by more than one person?	0	
Question 5.5: Does your project have a ticketing system to manage bug reports and feature requests?	3	
Question 5.6: Is your project's ticketing system publicly visible to your users, so they can view bug reports and feature requests?	3	
Question 6.1: Is your software's architecture and design modular?	3	
Question 6.2: Does your software use an accepted coding standard or convention?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/code-formatter.yml">https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/code-formatter.yml</a>
Question 7.1: Does your software allow data to be imported and exported using open data formats?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/data/songs.csv">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/data/songs.csv</a>
Question 7.2: Does your software allow communications using open communications protocols?	3	
Question 8.1: Is your software cross-platform compatible?	3	
Question 9.1: Does your software adhere to appropriate accessibility conventions or standards?	1	
Question 9.2: Does your documentation adhere to appropriate accessibility conventions or standards?	1	

Criteria	Self Score	Evidence
Question 10.1: Is your source code stored in a repository under revision control?	3	
Question 10.2: Is each source code release a snapshot of the repository?	3	
Question 10.3: Are releases tagged in the repository?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/releases">https://github.com/NCSU-CSC-510-F2024/Enigma/releases</a>
Question 10.4: Is there a branch of the repository that is always stable? (i.e. tests always pass, code always builds successfully)	3	
Question 10.5: Do you back-up your repository?	3	
Question 11.1: Do you provide publicly-available instructions for building your software from the source code?	3	
Question 11.2: Can you build, or package, your software using an automated tool?	3	
Question 11.3: Do you provide publicly-available instructions for deploying your software?	3	
Question 11.4: Does your documentation list all third-party dependencies?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/requirements.txt">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/requirements.txt</a>
Question 11.5: Does your documentation list the version number for all third-party dependencies?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/requirements.txt">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/requirements.txt</a>
Question 11.6: Does your software list the web address, and licences for all third-party dependencies and say whether the dependencies are mandatory or optional?	1	
Question 11.7: Can you download dependencies using a dependency management tool or package manager?	3	
Question 11.8: Do you have tests that can be run after your software has been built or deployed to show whether the build or deployment has been successful?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/run-tests.yml">https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/run-tests.yml</a>
Question 12.1: Do you have an automated test suite for your software?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/run-tests.yml">https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/run-tests.yml</a>

Criteria	Self Score	Evidence
		<a href="#">orkflows/run-tests.yml</a>
Question 12.2: Do you have a framework to periodically (e.g. nightly) run your tests on the latest version of the source code?	3	
Question 12.3: Do you use continuous integration, automatically running tests whenever changes are made to your source code?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/run-tests.yml">https://github.com/NCSU-CSC-510-F2024/Enigma/actions/workflows/run-tests.yml</a>
Question 12.4: Are your test results publicly visible?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/actions">https://github.com/NCSU-CSC-510-F2024/Enigma/actions</a>
Question 12.5: Are all manually-run tests documented?	3	
Question 13.1: Does your project have resources (e.g. blog, Twitter, RSS feed, Facebook page, wiki, mailing list) that are regularly updated with information about your software?	0	
Question 13.2: Does your website state how many projects and users are associated with your project?	3	
Question 13.3: Do you provide success stories on your website?	0	
Question 13.4: Do you list your important partners and collaborators on your website?	0	
Question 13.5: Do you list your project's publications on your website or link to a resource where these are available?	0	
Question 13.6: Do you list third-party publications that refer to your software on your website or link to a resource where these are available?	0	
Question 13.7: Can users subscribe to notifications to changes to your source code repository?	0	
Question 13.8: If your software is developed as an open source project (and, not just a project developing open source software), do you have a governance model?	0	
Question 14.1: Do you accept contributions (e.g. bug fixes, enhancements, documentation updates, tutorials) from people who are not part of your project?	0	
Question 14.2: Do you have a contributions policy?	2	<a href="https://github.com/NCSU-CSC">https://github.com/NCSU-CSC</a>



Criteria	Self Score	Evidence
		<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/CONTRIBUTING.md">-510-F2024/Enigma/blob/main/CONTRIBUTING.md</a>
Question 14.3: Is your contributions' policy publicly available?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/CONTRIBUTING.md">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/CONTRIBUTING.md</a>
Question 14.4: Do contributors keep the copyright/IP of their contributions?	0	
Question 15.1: Does your website and documentation clearly state the copyright owners of your software and documentation?	0	
Question 15.2: Does each of your source code files include a copyright statement?	0	
Question 15.3: Does your website and documentation clearly state the licence of your software?	1	
Question 15.4: Is your software released under an open source licence?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/LICENSE">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/LICENSE</a>
Question 15.5: Is your software released under an OSI-approved open-source licence?	3	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/LICENSE">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/LICENSE</a>
Question 15.6: Does each of your source code files include a licence header?	0	
Question 15.7: Do you have a recommended citation for your software?	0	
Question 16.1: Does your website or documentation include a project roadmap (a list of project and development milestones for the next 3, 6 and 12 months)?	2	<a href="https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md#roadmap-">https://github.com/NCSU-CSC-510-F2024/Enigma/blob/main/README.md#roadmap-</a>
Question 16.2: Does your website or documentation describe how your project is funded, and the period over which funding is guaranteed?	0	
Question 16.3: Do you make timely announcements of the deprecation	0	

Criteria	Self Score	Evidence
of components, APIs, etc.?		