

Simon Fraser University

Umi

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<https://github.com/CMPT-276-FALL-2024/project-08-oceans>

CMPT 276, Fall 2024

Project Milestone 1

November 5th, 2024

API's and Features

Spotify API

Purpose: Easily accessible music feature on the website to help users focus better when studying

Features:

- Now playing toggle
- Pomodoro time with music
- Study playlist/filter genre for studying

These features are aimed to help users increase their focus studying with easy access to Spotify on the application.

Notion API

Purpose: Track study habits and tasks needed to be completed

Features:

- Create new tasks
- Manage tasks
- Sync to different calendars like Outlook or Google calendar

These features aim to help users better organize their busy schedules and have easy access to the schedules they create on different platforms.

SDLC Model used for our project

For our groups SDLC, we have decided to use a Kanban board. For previous milestones and assignments, our group has been using a Kanban board on Taiga to delegate tasks and keep track of our progress. For our project, we have created a schedule on Monday.com which converts our schedule into a Kanban board with all our specific tasks and deadlines. In addition, our GitHub issues on GitHub are also in a Kanban board to make sure all tasks and schedules are clear.

Project Schedule

Milestone 1 - Basic Components *November 4, 2024*

- Loading page
- Landing page
- Home page
- Task page

Milestone 2 - Notion API Features *November 10, 2024*

- 3 features
 - sync to other calendars
 - add new tasks
 - edit and delete tasks
- each feature tested individually
- all features tested together
- integrated into application successful

Milestone 2.5 - Settings + FAQ Page *November 15, 2024*

- settings page
- FAQ page

- needed for usability heuristics

Milestone 3 - Spotify API Features *November 17, 2024*

- 3 features
 - now playing toggle
 - suggest music
 - filter genre
- each feature test individually
- all features tested together
- integrate into application successful

Milestone 4 - Final testing + ready to deploy *November 24, 2024*

- add login page for external API's
- test application with all features thoroughly
- get feedback from users for bugs and improvements
- add any extra features like mascot if time permits

Ready for peer review for November 26, 2024

Risk assessment for Umi

Low-Risk Issues

1. User Interface Bugs (Low Risk)
Risk: Minor bugs in the interface can cause minor display issues.
Mitigation: Conduct regular usability tests and quality assurance sessions during development to catch bugs early. Prioritize user feedback for UI improvements.
2. API Integration Challenges
Risk: Minor inconsistencies with integrating Notion and Spotify APIs
Mitigation: Allocate buffer time in schedule to debug and test each API feature. Maintain thorough documentation on API behaviors and limitations
3. Data Loss in Task Management
Risk: users may experience data loss if not saved correctly
Mitigation: Implement autosave functionality and backups. Provide users with a prompt to confirm task completion or exit without saving to avoid accidental data loss.
4. Calendar Sync Errors
Risk: Synchronization delays between Umi's calendar and Google Calendar.
Mitigation: Set up automatic syncing at regular intervals and provide users with a manual sync option.
5. Application use may not be obvious at first
Risk: The application may not be obvious to users how the task scheduling works at first.
Mitigation: Create an "about us" page and FAQ page to help new users and answer questions.

Medium-Risk Issues

1. Scalability of Server Resources
Risk: Increased user load may slow down the application.
Mitigation: Monitor server capacity and set up scalable infrastructure on cloud services, allowing for auto-scaling if the application gains more users.
2. Compatibility with Different Browsers/Devices
Risk: UI may not render consistently across devices and browsers.
Mitigation: Conduct cross-browser testing and prioritize responsive design using media queries for common devices and browsers, ensuring accessibility and usability on various platforms.
3. User Data Privacy
Risk: Sensitive user data could be mishandled and exposed.
Mitigation: User encryption for data storage and transmission, and clearly communicate privacy policies. Regularly audit code and systems for security.

High-Risk Issues

1. API Downtime or Services Changes

Risk: Reliance on Notion and Spotify APIs make the application vulnerable to changes or outages.

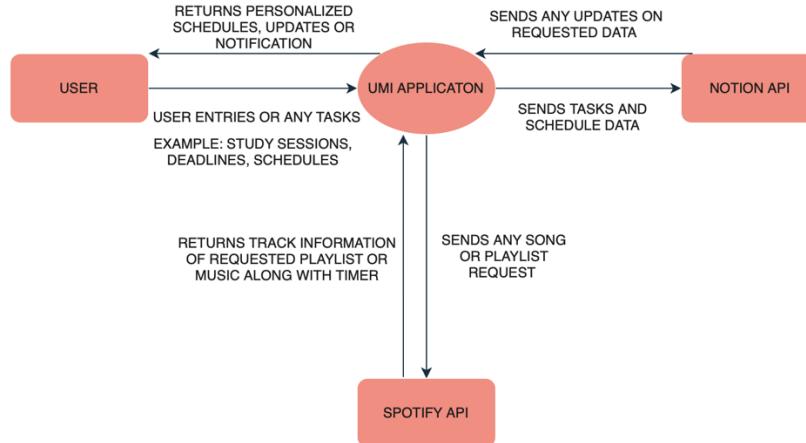
Mitigation: Implement fallback functions for key features, like local task management or offline music playlists, to ensure code functionalities are accessible even if APIs are down.

2. Project Scope Creep

Risk: Adding too many features could delay the project timeline.

Mitigation: Maintain a clear project scope and establish regular checkpoints to assess progress. If new features are suggested, evaluate and prioritize them based on impact and feasibility, considering deferring extras to later versions.

Data Flow Diagram Overview



The Level 0 data flow diagram illustrates the interaction flow within the UMI Application, showing its connections with the user and two external APIs: the Notion API and Spotify API.

Components and Interactions

1. User

- The user interacts with the UMI Application by entering tasks, deadlines, schedules, or other study-related activities (e.g., study sessions).

2. UMI Application

- This central component manages interactions between the user and the external APIs. It receives input from the user, processes it, and communicates with both the Notion and Spotify APIs to provide task management and music services.

3. Notion API

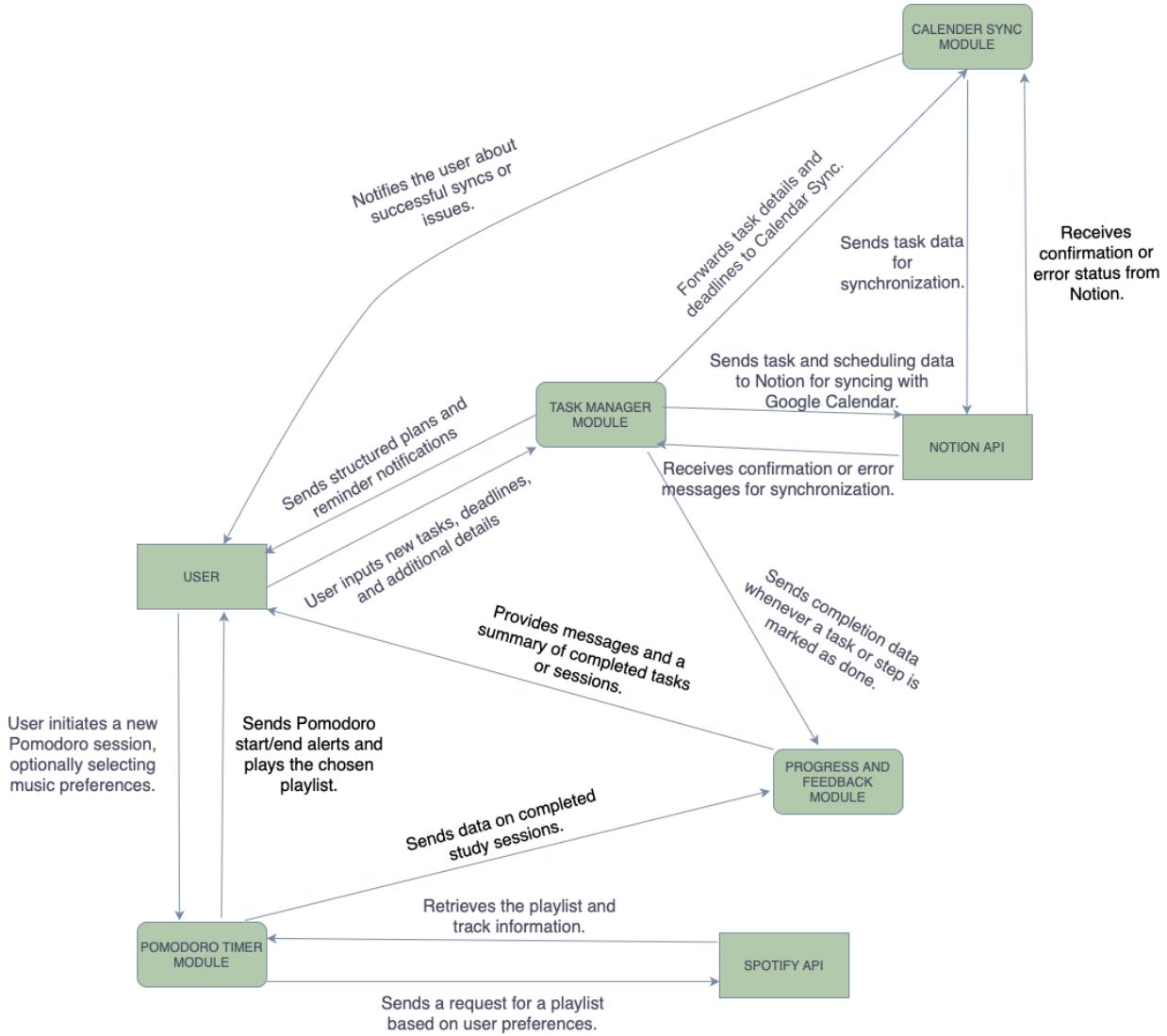
- The UMI Application sends tasks and schedules to the Notion API, which is likely used for managing notes, deadlines, or to-do lists. The Notion API responds by sending back updates or requested data, which the UMI Application can then relay to the user.

4. Spotify API

- When the user requests music, such as a specific song or playlist, the UMI Application sends this request to the Spotify API. Spotify returns track information, including the requested playlist or song, which the UMI Application provides to the user.

Interaction Flow

- The user inputs tasks, schedules, or music requests.
- The UMI Application sends the relevant data to either the Notion API for task or schedule updates or to the Spotify API for music requests.
- Each API responds with the requested information, which the UMI Application then forwards to the user, ensuring they receive updates on their schedules, tasks, or music information as needed.



Level 1 Data Flow Diagram: User-Focused Productivity Application Overview

This Level 1 diagram provides a detailed view of interaction flow within a user-focused productivity application that integrates task management, calendar synchronization, and a Pomodoro timer with music integration.

Components and Interactions

1. User

- The user initiates interactions by entering tasks, deadlines, additional details, and starting Pomodoro sessions with optional music preferences. They receive notifications, structured plans, and summary messages about completed tasks or sessions.

2. Task Manager Module

- This module processes user inputs related to tasks and deadlines:
 - Forwards tasks and schedules to the Notion API for tracking.

- Sends task details to the Calendar Sync Module to enable synchronization with calendar applications.
- Notifies the user about successful syncs or any issues in task management.

3. Notion API

- The Notion API supports both the Task Manager Module and the Calendar Sync Module:
 - Receives task and scheduling data from the Task Manager Module for storage and tracking.
 - Returns confirmation or error messages, allowing the Task Manager Module to update the user on sync status.
 - Sends completion data to the Progress and Feedback Module when a task or step is marked as done.

4. Calendar Sync Module

- This module manages synchronization with calendar applications (e.g., Google Calendar):
 - Receives task data from the Task Manager Module and sends it to the Notion API for further syncing.
 - Confirms sync success or reports errors, relaying this information back to the Task Manager Module and ultimately to the user.

5. Progress and Feedback Module

- This module tracks and manages task completion:
 - Receives data from the Notion API when tasks or steps are marked as complete.
 - Provides users with messages summarizing completed tasks or sessions, helping them stay informed about their progress.

6. Pomodoro Timer Module

- This module supports the Pomodoro technique, allowing users to focus on timed study sessions with optional music:
 - Initiates a Pomodoro session based on user input, sending start and end alerts.
 - Requests playlist or track information from the Spotify API when the user wants background music.
 - Sends data on completed study sessions to keep the user updated.

7. Spotify API

- The Spotify API provides music for Pomodoro sessions:
 - Receives playlist requests based on the user's preferences from the Pomodoro Timer Module.
 - Returns playlist and track information, which the Pomodoro Timer Module uses to play music during sessions.

Interaction Flow

- **Task Management and Calendar Sync:**
 - The user inputs tasks, which the Task Manager Module processes and sends to the Notion API and Calendar Sync Module. These modules confirm or report errors and provide updates to the user.
- **Progress Tracking:**
 - As tasks are marked complete, the Notion API and Progress and Feedback Module communicate, ultimately notifying the user about completed tasks or sessions.
- **Pomodoro and Music Integration:**
 - The user initiates a Pomodoro session with the Pomodoro Timer Module, which can request a playlist from the Spotify API. The module manages the start and end of the session and keeps the user informed about session completion.

This system provides a comprehensive productivity experience by integrating task management, calendar synchronization, progress tracking, and timed study sessions with optional music, offering users a well-rounded productivity application.

MVC Model Explanation

The Umi website follows an MVC-based architectural pattern, dividing the application into three interconnected parts: the Model, View, and Controller. This modular structure supports easier deployment, maintenance, and testing of the code.

Model

- The Model component in Umi handles all data-related aspects, including data storage, retrieval, and updates.
- It stores user data, such as task information, schedules, and music preferences, in a structured format within collections or tables.
- Temporary data, such as Pomodoro session information and theme preferences, are stored locally to ensure quick access.

View

- The View component provides the user interface for Umi, responsible for rendering data from the Model and displaying it to users.
- Key elements include the task planner, calendar, Pomodoro session information, and music controls, all designed for ease of navigation and an enhanced user experience.
- The interface is dynamically updated using HTML, CSS, and JavaScript to reflect changes based on user input and theme preferences.

Controller

- The Controller serves as the middle layer between the Model and View, ensuring proper updates based on user inputs.
- It interprets user actions and sends appropriate commands to update both the Model and the View, maintaining data consistency across the application.
- The Controller manages interactions with external APIs, including Notion and Spotify ensuring smooth integration.
- It also handles logic validation, manages exceptions, and handles errors from external APIs to ensure seamless functionality between Umi and these external services.

This MVC structure provides a clear separation of responsibilities, supporting a well-organized, scalable, and user-friendly UMI application.

Monday work management [See plans](#)

CMPT276_Umi

New task Search Person Filter Sort Hide Group by ...

Completed

<input type="checkbox"/>	Task	Owner	Status	Due date	Notes	Timeline	Last updated	Text	+
<input type="checkbox"/>	Set up GitHub React envir...		Done	Nov 1	Basic Components	Nov 1	2 days ago		
<input type="checkbox"/>	set up CI/CD pipeline		Done - review	Nov 5	milestone 1.5	Nov 1 - 5	2 days ago		
<input type="checkbox"/>	Set up React components		Not Started	Nov 2	Header, Footer, Nav	Nov 1 - 2	5 days ago		
<input type="checkbox"/>	Set up HTML structure		Working on it	Nov 2	Loading Page/Logi...	Nov 1 - 2	23 hours ago		
<input type="checkbox"/>	CSS layout/images		Not Started	Nov 3	Loading Page/Logi...	Nov 2 - 3	2 days ago		
<input type="checkbox"/>	Set up HTML structure		Working on it	Nov 2	Home page	Nov 1 - 2	23 hours ago		
<input type="checkbox"/>	CSS layout/images		Not Started	Nov 3	Home page	Nov 2 - 3	5 days ago		
<input type="checkbox"/>	Set up HTML structure		Working on it	Nov 2	Task page	Nov 1 - 2	23 hours ago		
<input type="checkbox"/>	CSS layout/images		Not Started	Nov 3	Task page	Nov 2 - 3	5 days ago		
<input type="checkbox"/>	integrate main pages		Not Started	Nov 4	home, task and lo...	Nov 4	3 days ago		
<input type="checkbox"/>	Create questions for both f...		Done - review	Nov 1	Forms	Nov 1	23 hours ago	google doc	
<input type="checkbox"/>	Scouring from HTML		Not Started	Nov 4	Forms	Nov 2 - 4	3 days ago		

Basic Components

<input type="checkbox"/>	Task	Owner	Status	Due date	Notes	Timeline	Last updated	Text	+
<input type="checkbox"/>	Set up GitHub React envir...		Done	Nov 1	Basic Components	Nov 1	2 days ago		
<input type="checkbox"/>	set up CI/CD pipeline		Done - review	Nov 5	milestone 1.5	Nov 1 - 5	2 days ago		
<input type="checkbox"/>	Set up React components		Not Started	Nov 2	Header, Footer, Nav	Nov 1 - 2	5 days ago		
<input type="checkbox"/>	Set up HTML structure		Working on it	Nov 2	Loading Page/Logi...	Nov 1 - 2	23 hours ago		
<input type="checkbox"/>	CSS layout/images		Not Started	Nov 3	Loading Page/Logi...	Nov 2 - 3	2 days ago		
<input type="checkbox"/>	Set up HTML structure		Working on it	Nov 2	Home page	Nov 1 - 2	23 hours ago		
<input type="checkbox"/>	CSS layout/images		Not Started	Nov 3	Home page	Nov 2 - 3	5 days ago		
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<input type="checkbox"/>	Scouring from HTML		Not Started	Nov 4	Forms	Nov 2 - 4	3 days ago		

monday work management [See plans](#)

CMPT276_Umi

New task Search Person Filter Sort Hide Group by ...

Basic Components

	Task	Owner	Status	Due date	Notes	Timeline	Last updated	Text	+
<input type="checkbox"/>	Notion task form HTML		Working on it	Nov 4	Forms	Nov 2 - 4	14 hours ago		
<input type="checkbox"/>	Spotify form CSS		Not Started	Nov 6	Forms	Nov 4 - 6	4 days ago		
<input type="checkbox"/>	Notion form CSS		Not Started	Nov 6	Forms	Nov 4 - 6	4 days ago		
<input type="checkbox"/>	test form + pages		Not Started	Nov 7	task + forms	Nov 6 - 7	3 days ago		
<input type="checkbox"/>	integrate forms into applic...		Not Started	Nov 7	forms	Nov 6 - 7	3 days ago		
<input type="checkbox"/>	set up FAQ page html		Not Started	Nov 11	info page	Nov 10 - 11	3 days ago		
<input type="checkbox"/>	FAQ page CSS		Not Started	Nov 13	info page	Nov 12 - 13	5 days ago		
<input type="checkbox"/>	set up Setting page html		Not Started	Nov 11	info page	Nov 10 - 11	5 days ago		
<input type="checkbox"/>	test FAQ page and setting...		Not Started	Nov 15	info page	Nov 15	5 days ago		
<input type="checkbox"/>	integrate FAQ page and se...		Not Started	Nov 14	info page	Nov 14	5 days ago		
<input type="checkbox"/>	add mascot		Not Started	Nov 24	all	Nov 19 - 24	4 days ago		
+ Add task									

Nov 1 - 24 Nov 1 - 24 Nov 1 - 24

API Features #1

Monday work management [See plans](#)

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New task Search Person Filter Sort Hide Group by ...

Basic Components

	Task	Owner	Status	Due date	Notes	Timeline	Last updated	Text	+
create feature #1	+		Not Started	Nov 8	sync to other calen...	Nov 4 - 7	2 days ago	must be tested indi...	
create feature #2	+		Not Started	Nov 8	track tasks	Nov 4 - 7	2 days ago	must be tested indi...	
create feature #3	+		Not Started	Nov 8	log habits	Nov 4 - 7	4 days ago	must be tested indi...	
integrate feature #1	+		Not Started	Nov 9	sync to other calen...	Nov 8 - 9	5 days ago		
integrate feature #2	+		Not Started	Nov 9	track tasks	Nov 8 - 9	5 days ago		
integrate feature #3	+		Not Started	Nov 9	log habits	Nov 8 - 9	5 days ago		
create automated testing f...	+		Not Started	Nov 9	all	Nov 5 - 9	3 days ago		
test API features together	+		Not Started	Nov 10	all	Nov 9 - 10	4 days ago		
CSS design for logging hab...	+		Not Started	Nov 9	all	Nov 5 - 9	4 days ago		

+ Add task

sayjaycies-team.monday.com Projects - CMPT... CMPT 276 - M1... Invite / 4 ...

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CMPT276_Umi

New task Search Person Filter Sort Hide Group by ...

API Feature #1

	Task	Owner	Status ⓘ	Due date ⓘ	Notes	Timeline ⓘ	Last updated	Text	+
create feature #1	+		Not Started	Nov 14	now playing page	Nov 11 - 14	3 days ago	must be tested indi...	
create feature #2	+		Not Started	Nov 14	recommend music	Nov 11 - 14	4 days ago	must be tested indi...	
create feature #3	+		Not Started	Nov 14	filter genre	Nov 11 - 14	4 days ago	must be tested indi...	
integrate feature #1	+		Not Started	Nov 15	now playing page	Nov 15 - 16	4 days ago		
integrate feature #2	+		Not Started	Nov 15	now playing page	Nov 15 - 16	4 days ago		
integrate feature #3	+		Not Started	Nov 15	now playing page	Nov 15 - 16	4 days ago		
create automated tests for...	+		Not Started	Nov 16	all	Nov 11 - 16	2 days ago		
test all API features together	+		Not Started	Nov 17	all	Nov 16 - 17	4 days ago		
CSS design	+		Not Started	Nov 16	all	Nov 11 - 16	4 days ago		

+ Add task

API Feature #2

	Task	Owner	Status ⓘ	Due date ⓘ	Notes	Timeline ⓘ	Last updated	Text	+
create feature #1	+		Not Started	Nov 14	now playing page	Nov 11 - 14	3 days ago	must be tested indi...	
create feature #2	+		Not Started	Nov 14	recommend music	Nov 11 - 14	4 days ago	must be tested indi...	
create feature #3	+		Not Started	Nov 14	filter genre	Nov 11 - 14	4 days ago	must be tested indi...	
integrate feature #1	+		Not Started	Nov 15	now playing page	Nov 15 - 16	4 days ago		
integrate feature #2	+		Not Started	Nov 15	now playing page	Nov 15 - 16	4 days ago		
integrate feature #3	+		Not Started	Nov 15	now playing page	Nov 15 - 16	4 days ago		
create automated tests for...	+		Not Started	Nov 16	all	Nov 11 - 16	2 days ago		
test all API features together	+		Not Started	Nov 17	all	Nov 16 - 17	4 days ago		
CSS design	+		Not Started	Nov 16	all	Nov 11 - 16	4 days ago		

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CMPT276_Umi

Main Table Kanban Gantt Calendar +

New task Search Person Filter Sort Hide Group by ...

API Feature #2

	Task	Owner	Status	Due date	Notes	Timeline	Last updated	Text	+
<input type="checkbox"/>	create automated tests for...		Not Started	Nov 16	all	Nov 11 - 16	2 days ago		
<input type="checkbox"/>	test all API features together		Not Started	Nov 17	all	Nov 16 - 17	4 days ago		
<input type="checkbox"/>	CSS design		Not Started	Nov 16	all	Nov 11 - 16	4 days ago		
	+ Add task								

Nov 14 - 17 Nov 11 - 17

Test + wrap-up

	Task	Owner	Status	Due date	Notes	Timeline	Last updated	Text	+
<input type="checkbox"/>	Test application thoroughly...		Not Started	Nov 19		Nov 17 - 19	4 days ago	this gives us a week...	
	+ Add task								

Nov 19 Nov 17 - 19

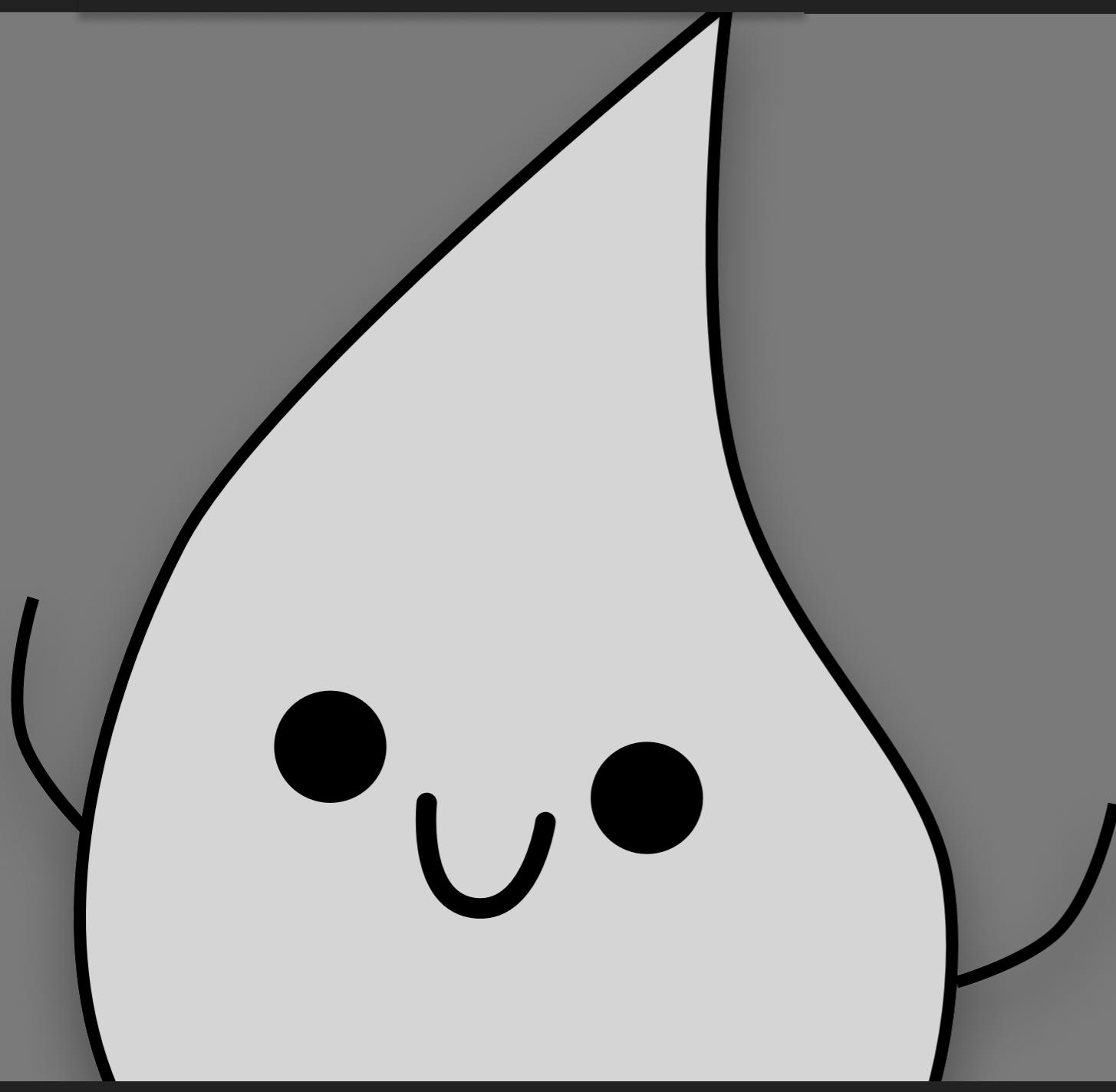
+ Add new group



Home

Music

Umi



Hi there!
Lorem ipsum
dolor sit amet

About us

What is X?

What is Y?

Begin your
journey with us!

Start Now!

Music

Umi

Heading

Heading

Heading

Contact us!

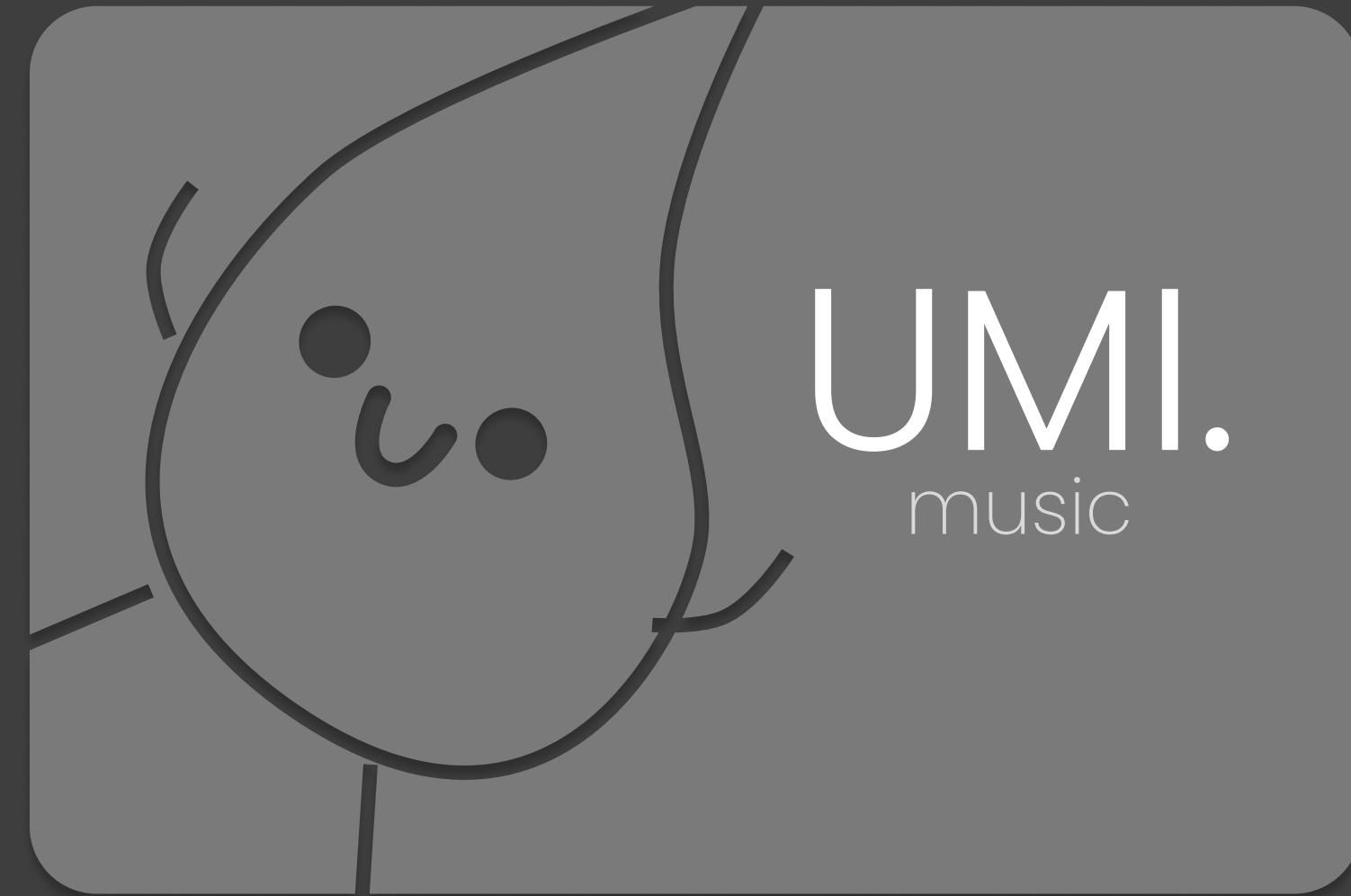




Home

Music

Umi



curate a playlist persona

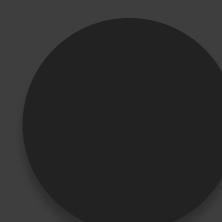
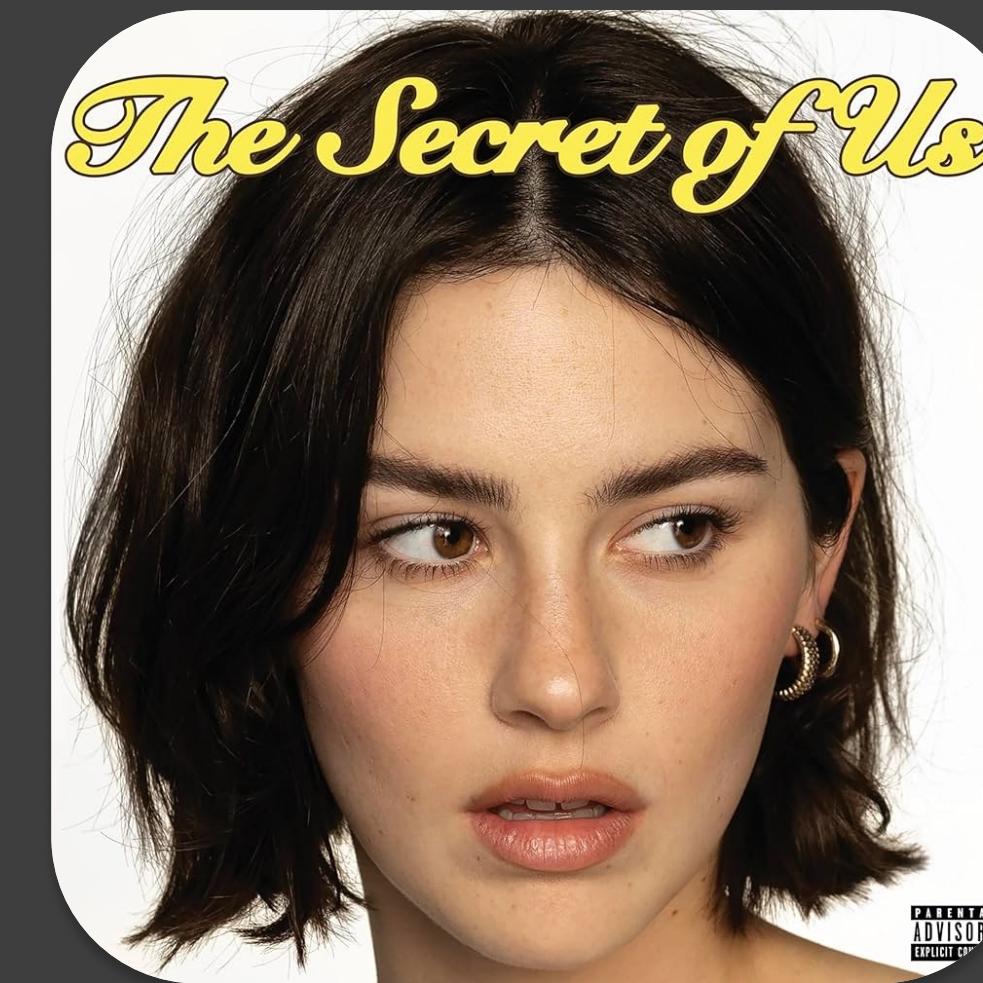
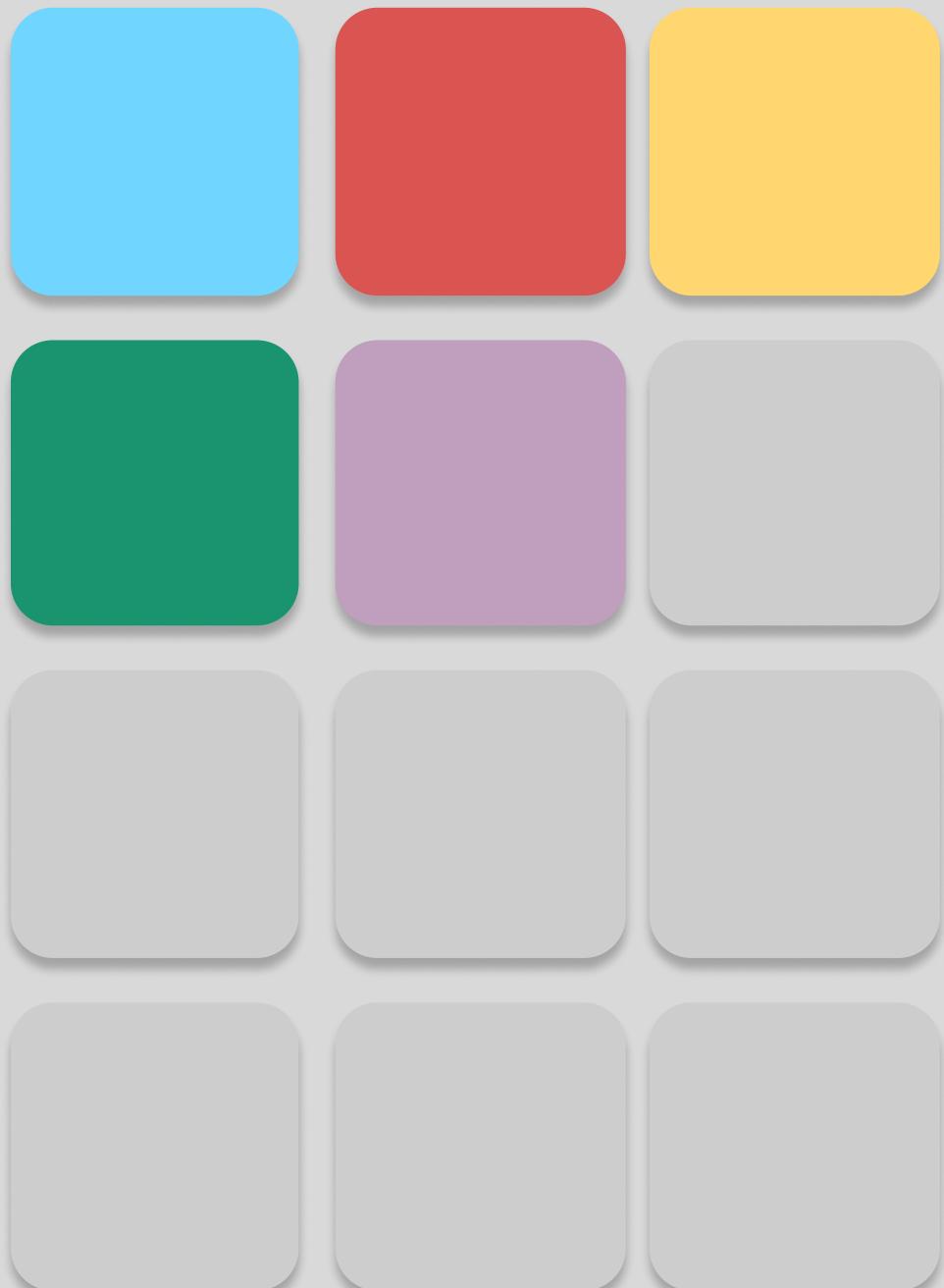


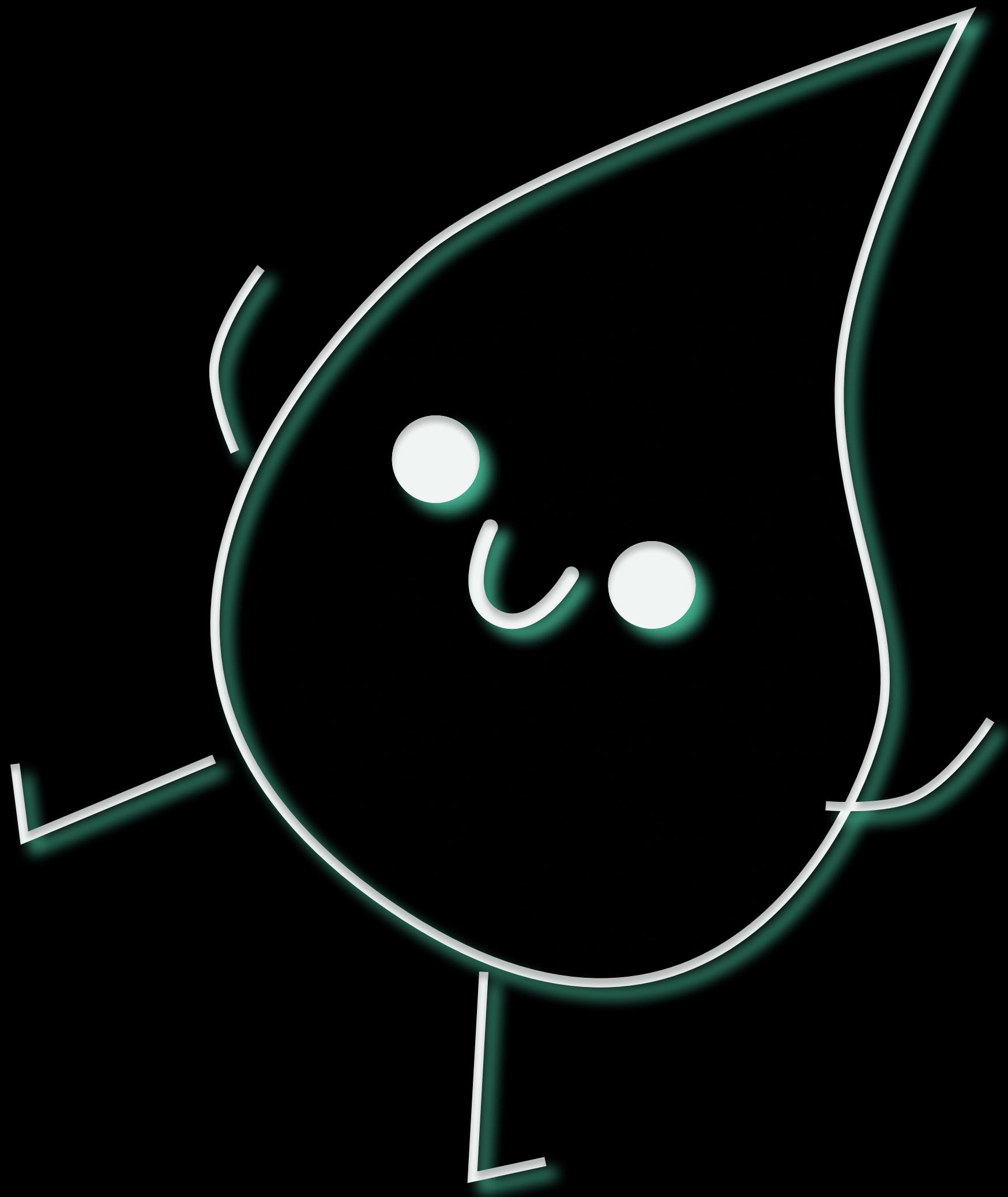


Home

Music

Umi





UMI.
music

...now loading





1

2

3

4

1

2

3

4

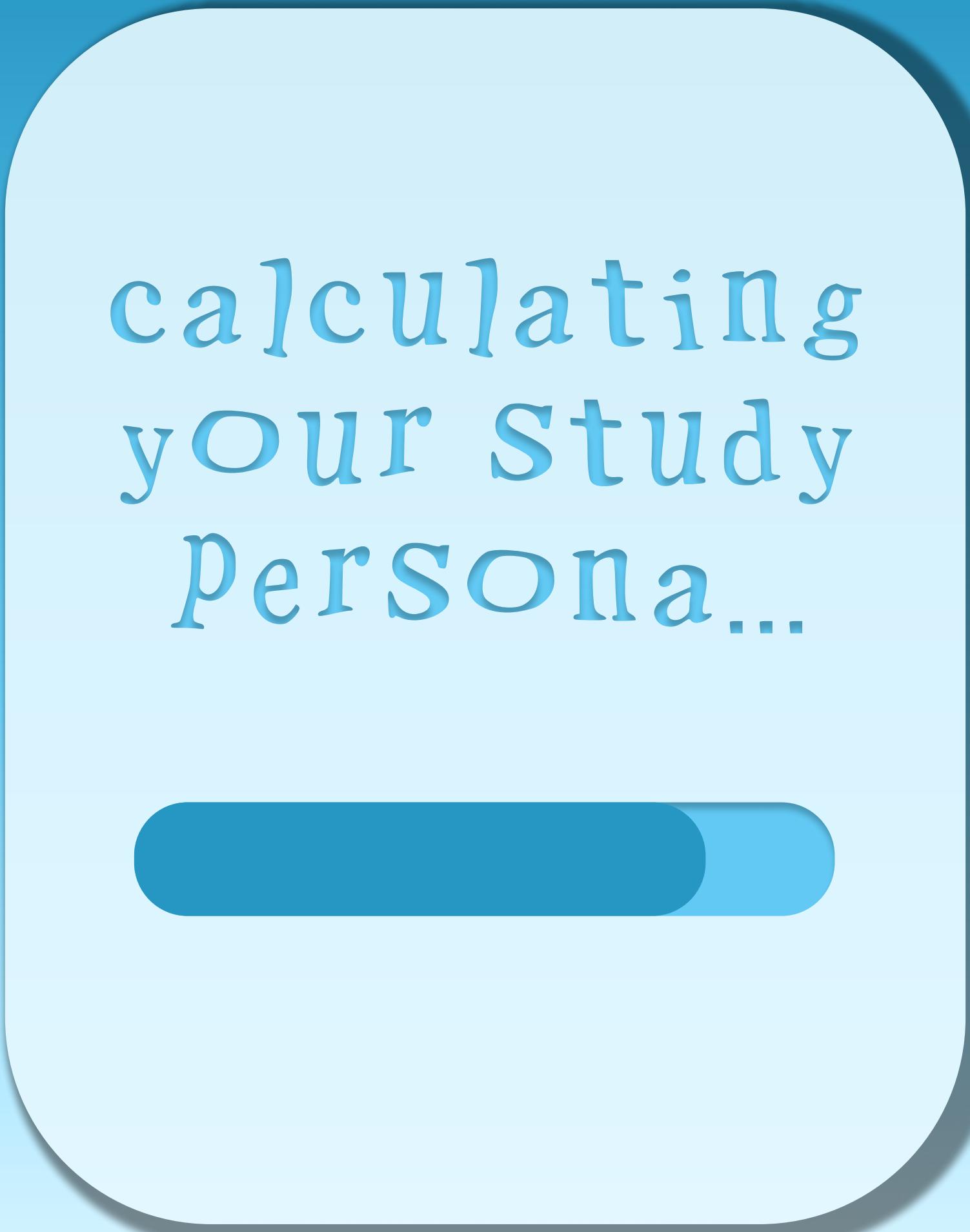


1

2

3

4



calculating
your study
Persona...

Cafe Coder

playlist

genre

genre

genre

about
you

try
again

Save
image

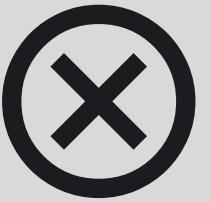
add to
umi
library

add to
spotify
library

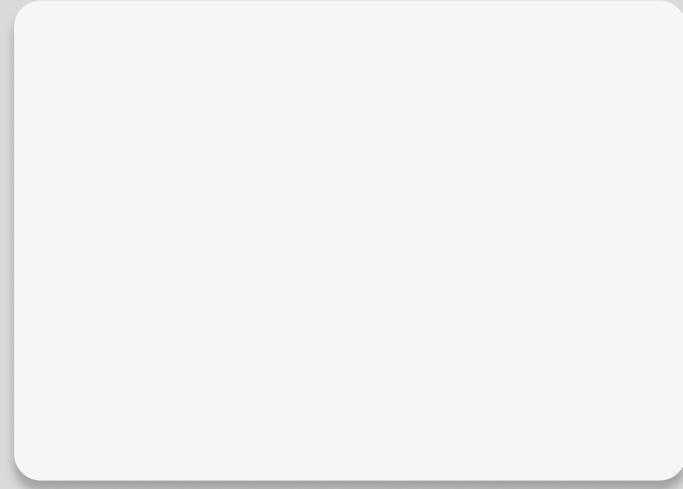
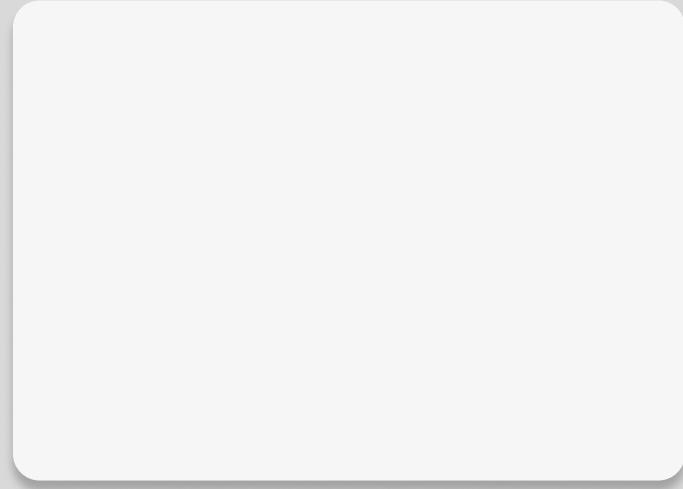
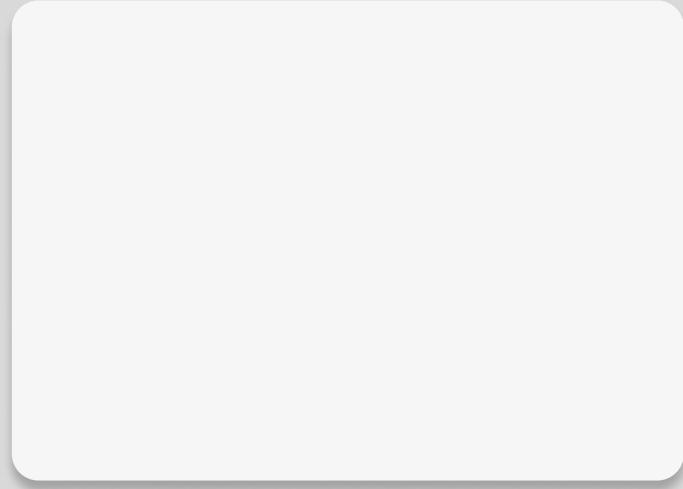
welcome to
UML.

...now loading





commit to your tasks.





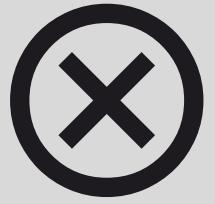
how will you
complete these tasks?





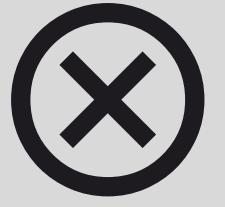
list the distractions
that you will discard.



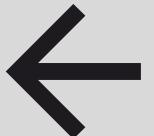
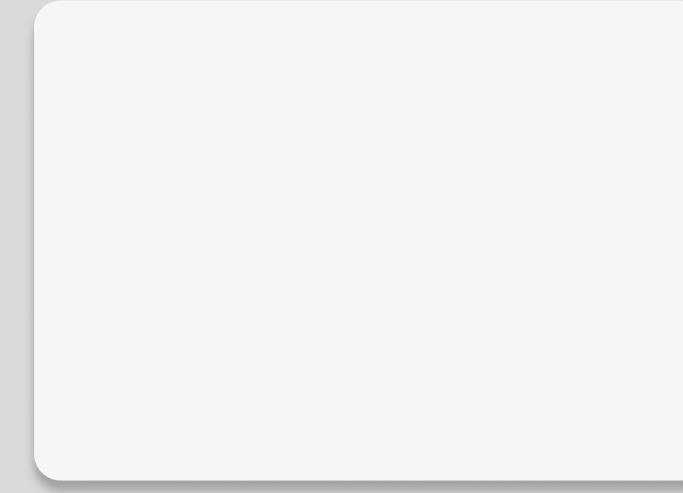
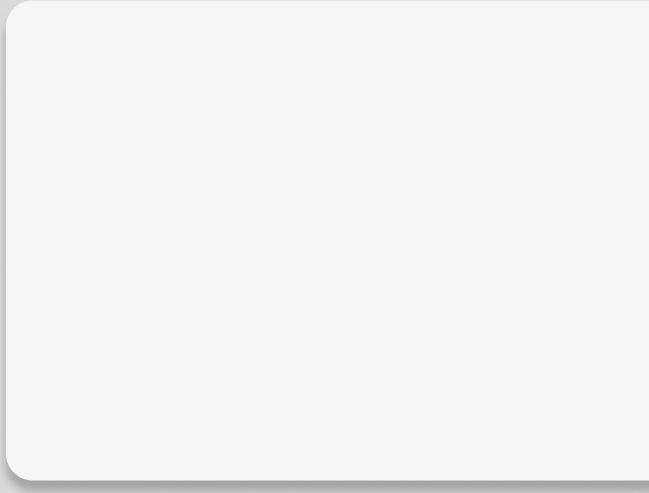
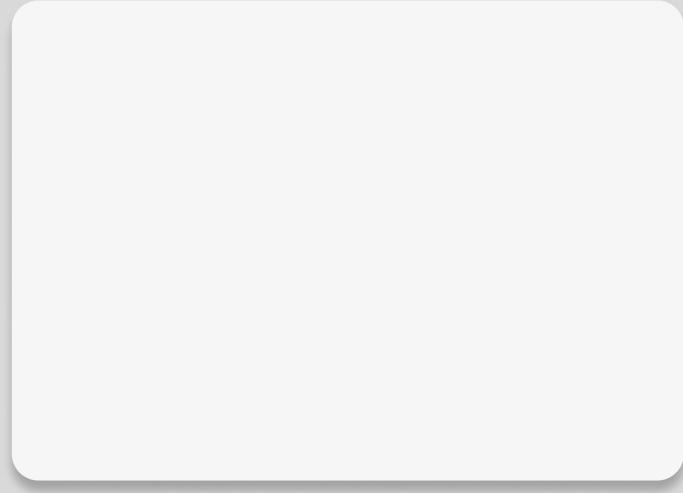


what will you do to
tidy up your workspace?



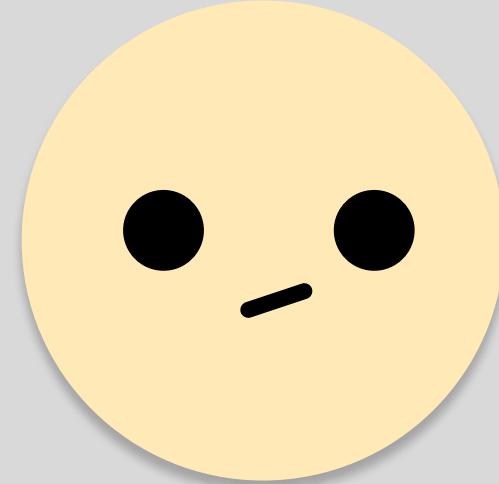


rearrange your week.





are you satisfied?



welcome to
UML.

...now loading

welcome to Umi.

to continue,
please connect your accounts.



Sign in with Notion



Sign in with Google

try out Umi music.



Sign in with Spotify

Umi

username

password



Home

Music

Umi



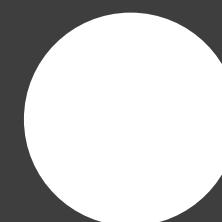
good morning!

today is MM/DD/YYYY.

monday



0:00

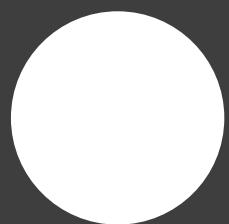


monday

0:00

• • •

• • • • •



monday

0:00

• • • •

• • • • • •

song name





Home

Music

Umi



General

Notifications

Appearance

Accounts

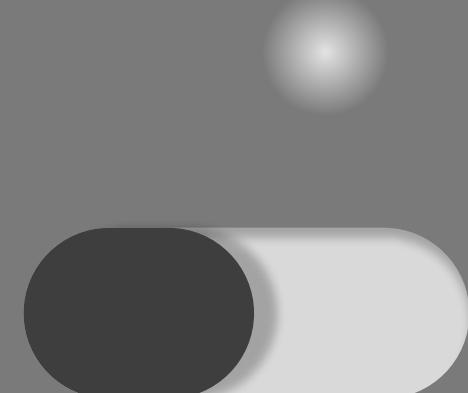
FAQ

Delete All Data

Dark Mode/Light Mode

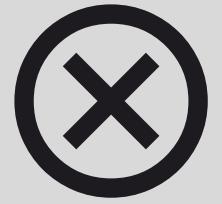


Accent colour

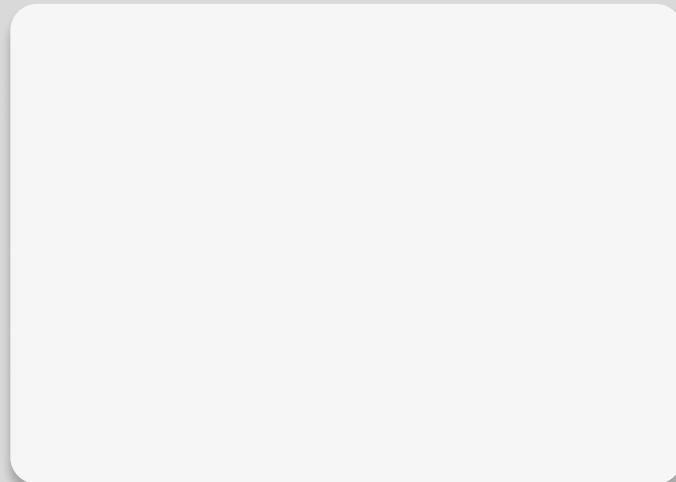
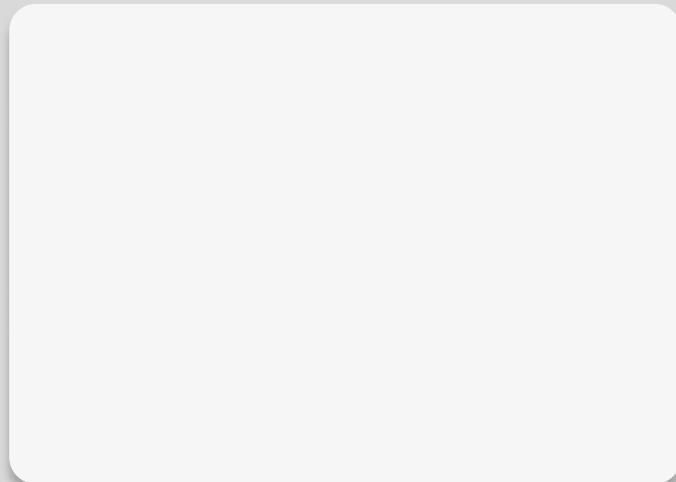
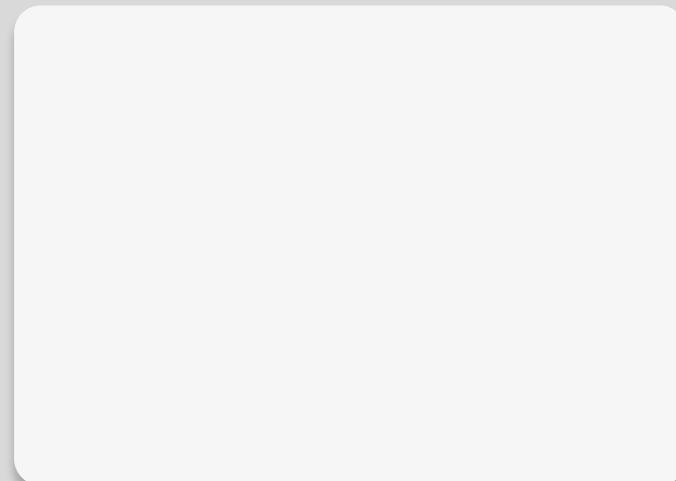
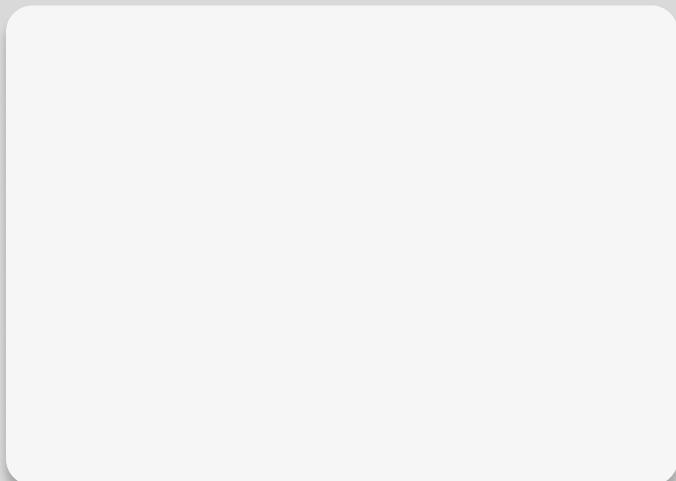
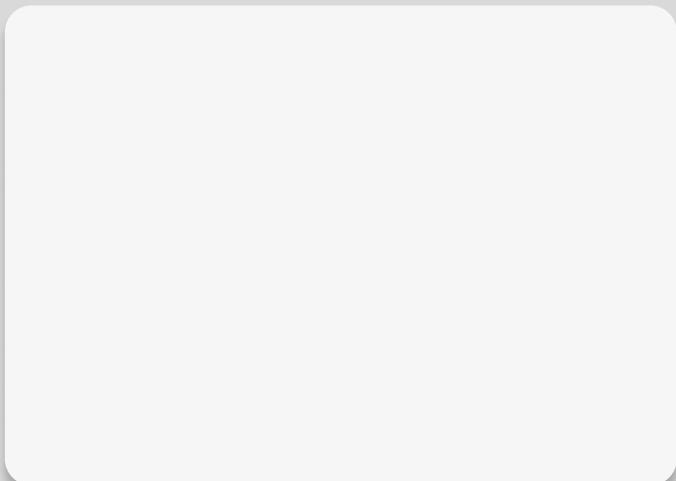


Toggle Mascot





refine your week.





Home

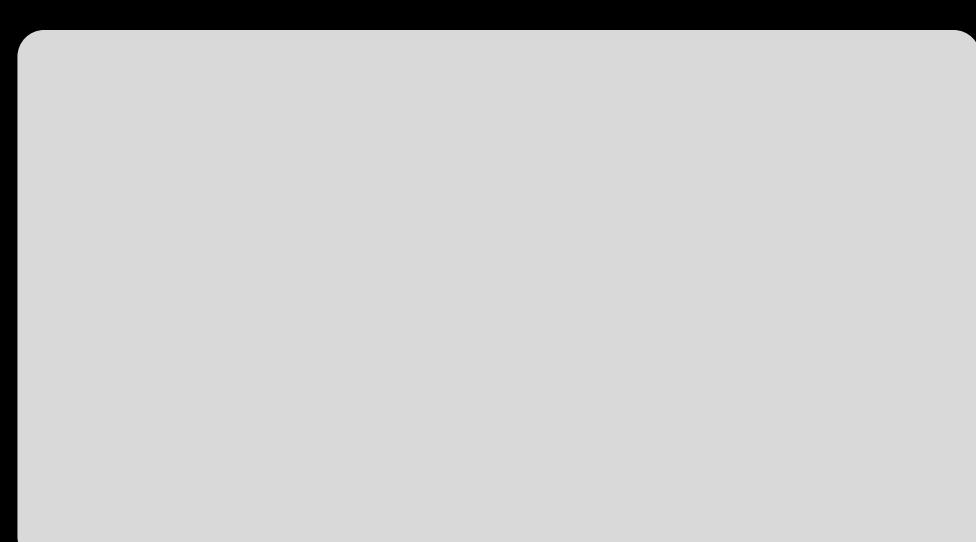
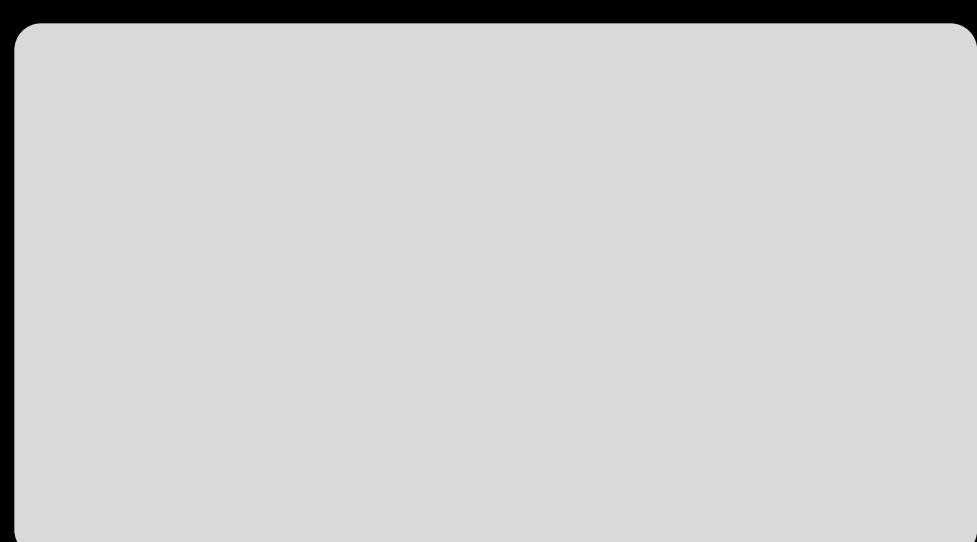
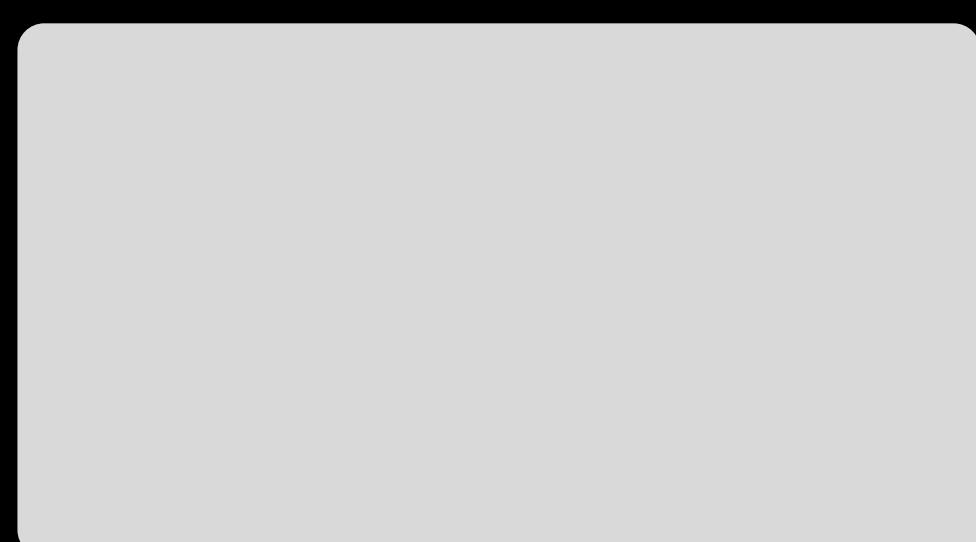
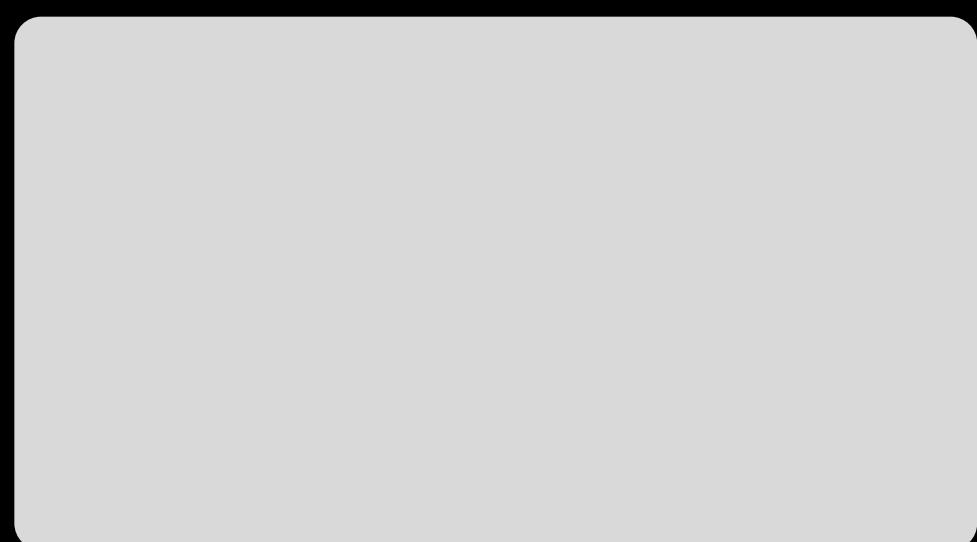
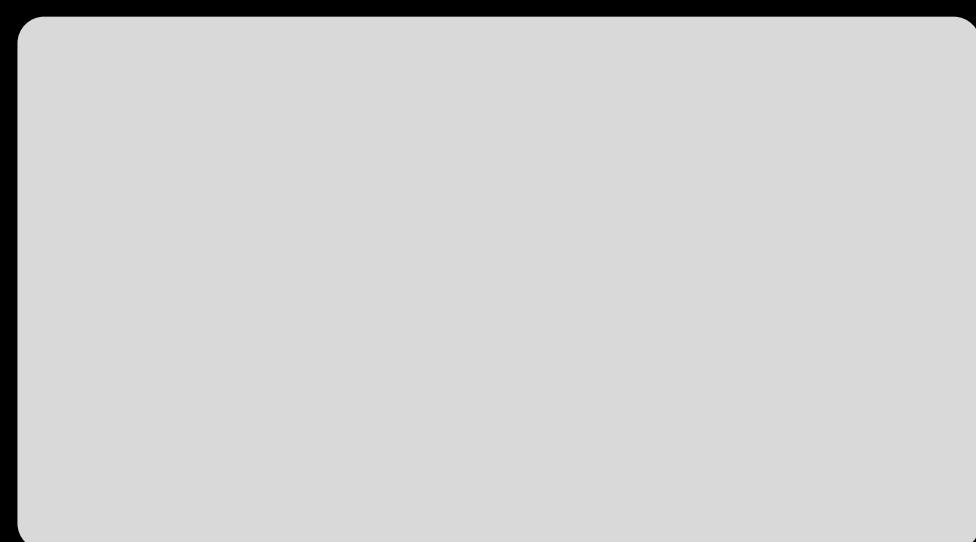
Music

Umi



Frequently Asked Questions

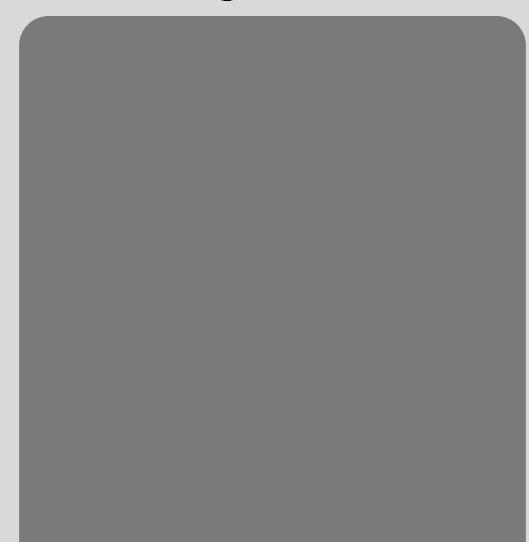
How do I ...



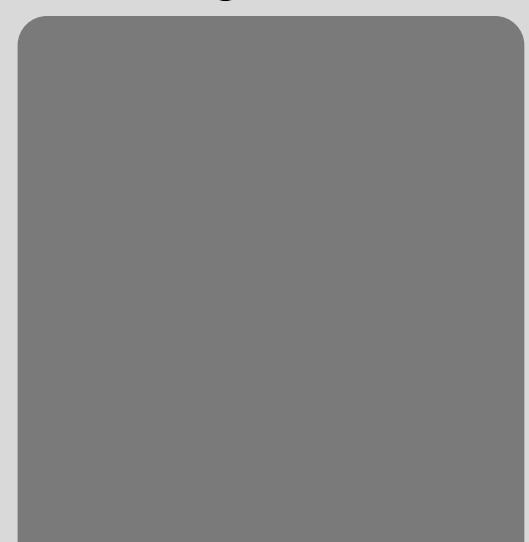
Umi



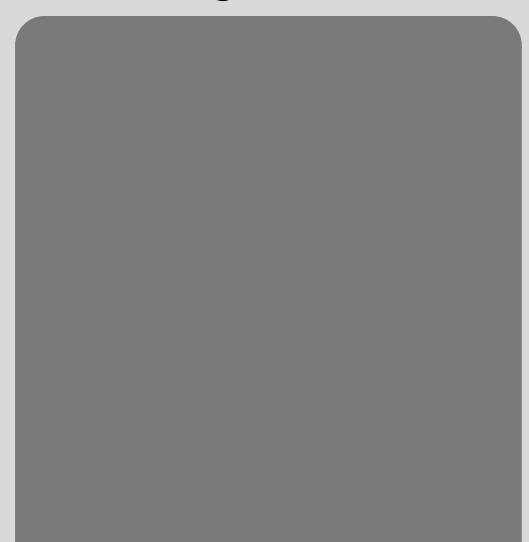
Heading



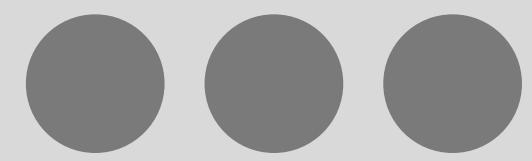
Heading



Heading



Contact us!

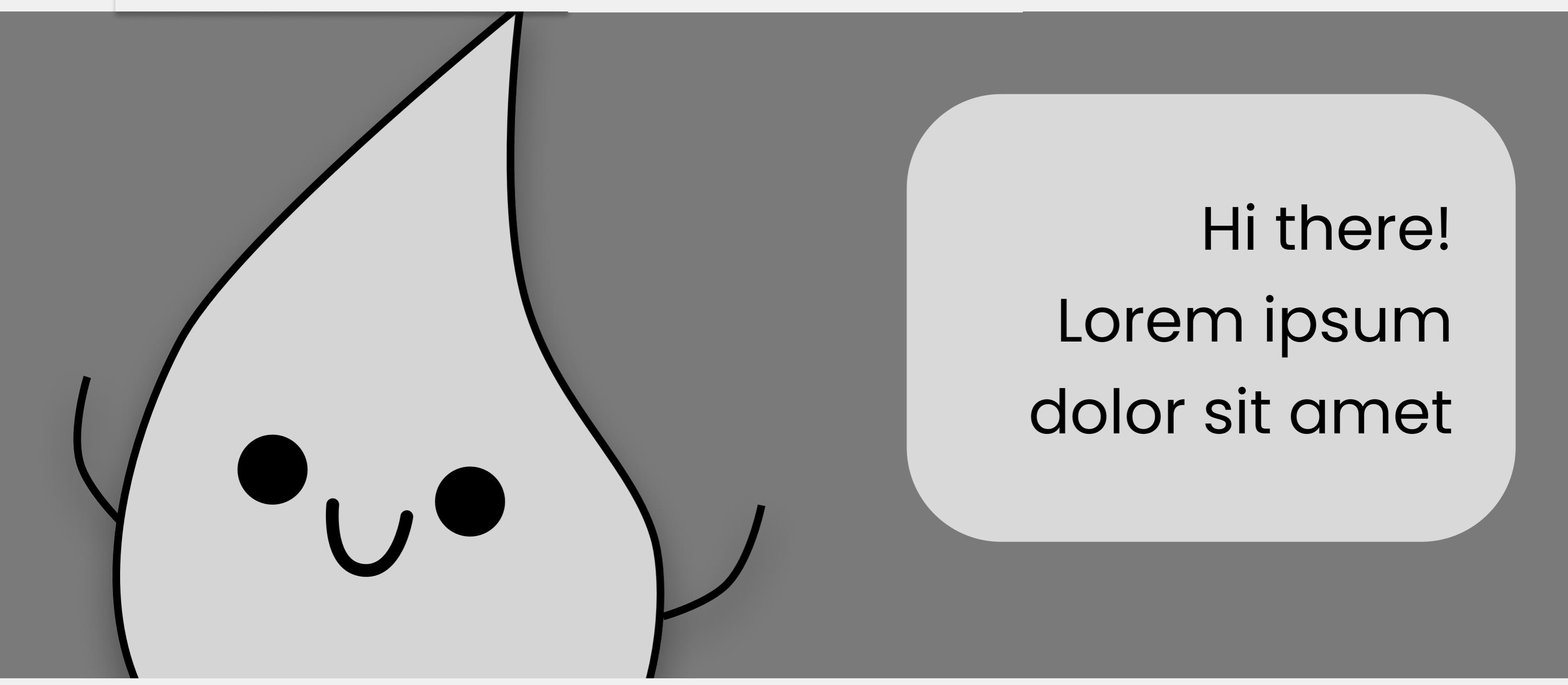




Home

Music

Umi



About us

What is X?

What is Y?

Begin your journey with us!

Start Now!

Music

Umi

Heading

Heading

Heading

Contact us!





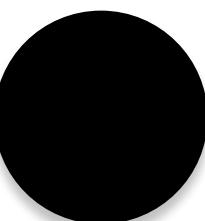
Home

Music

Umi



curate a playlist persona

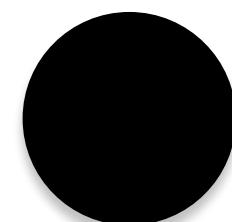
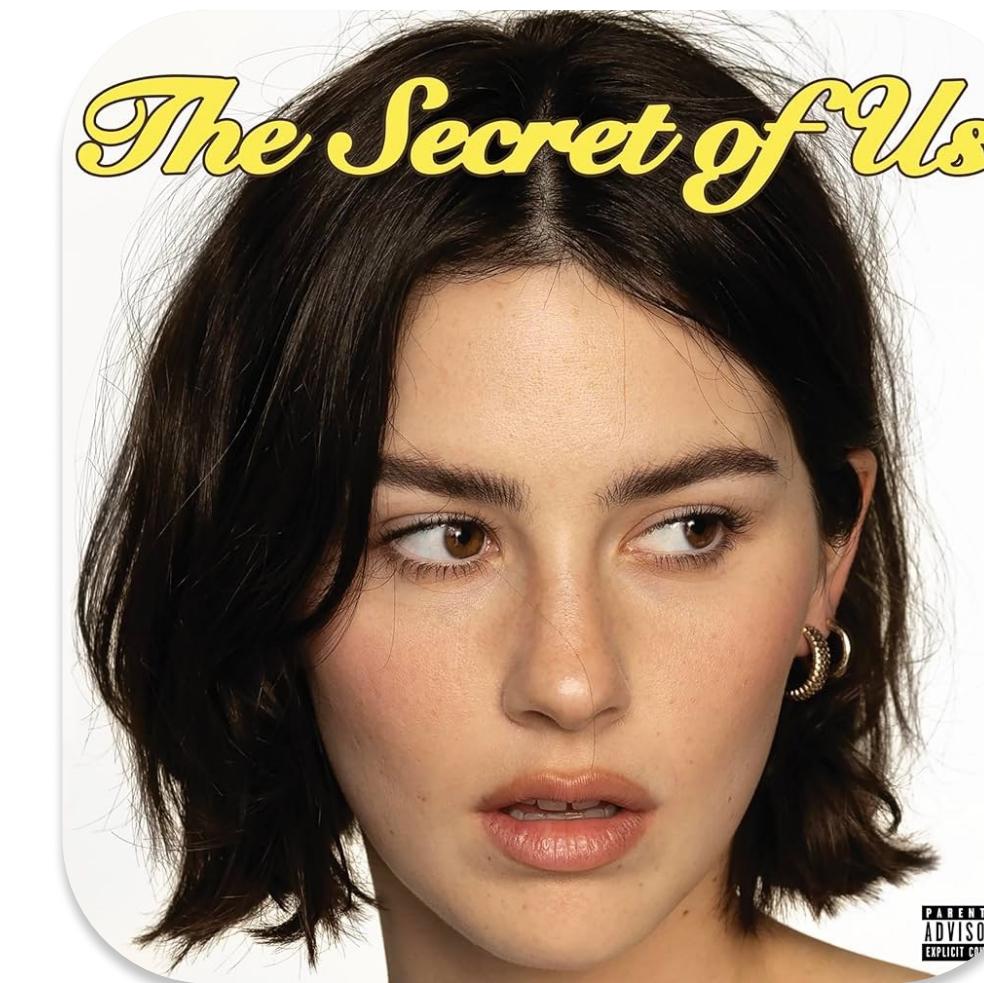
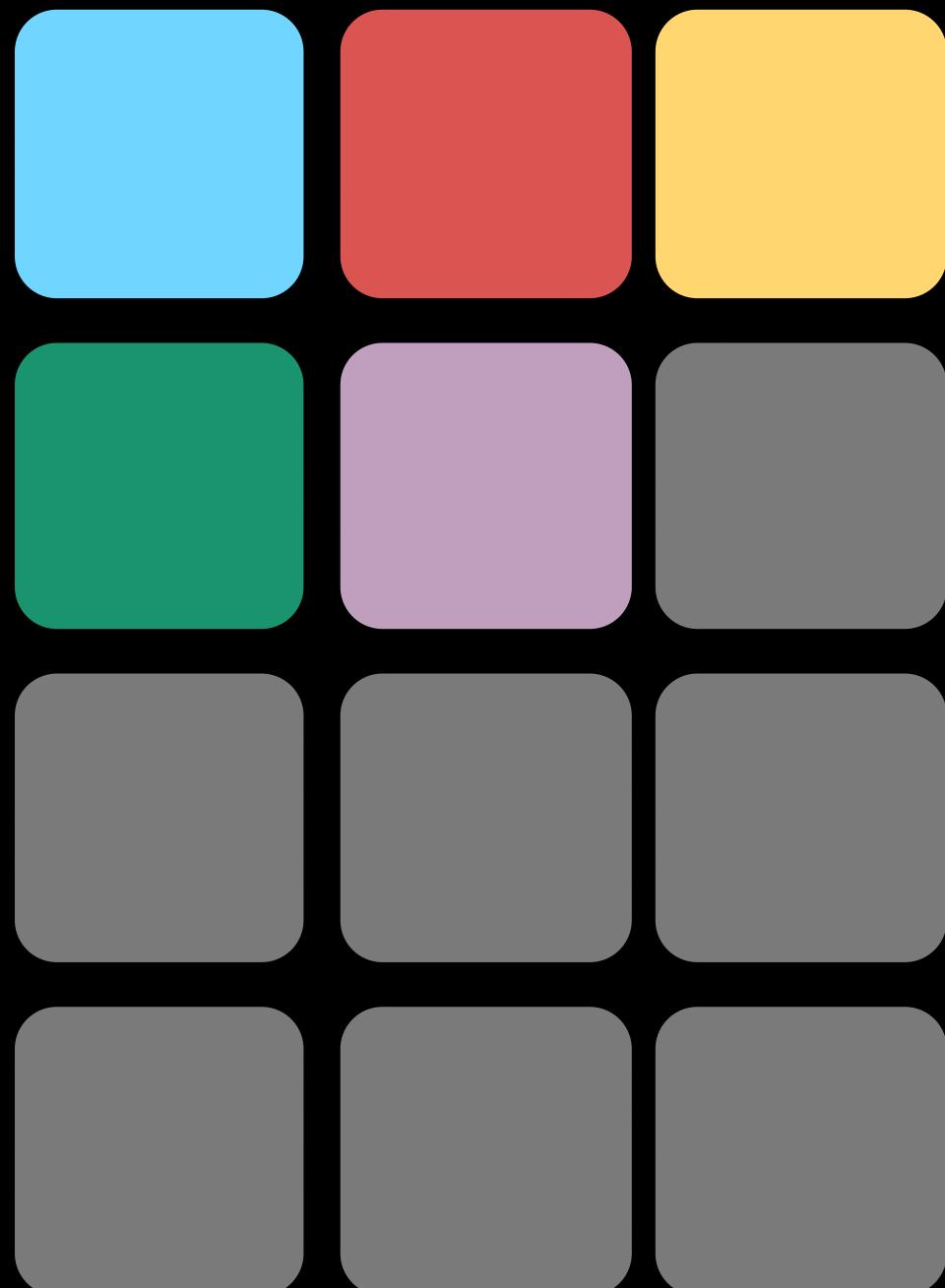


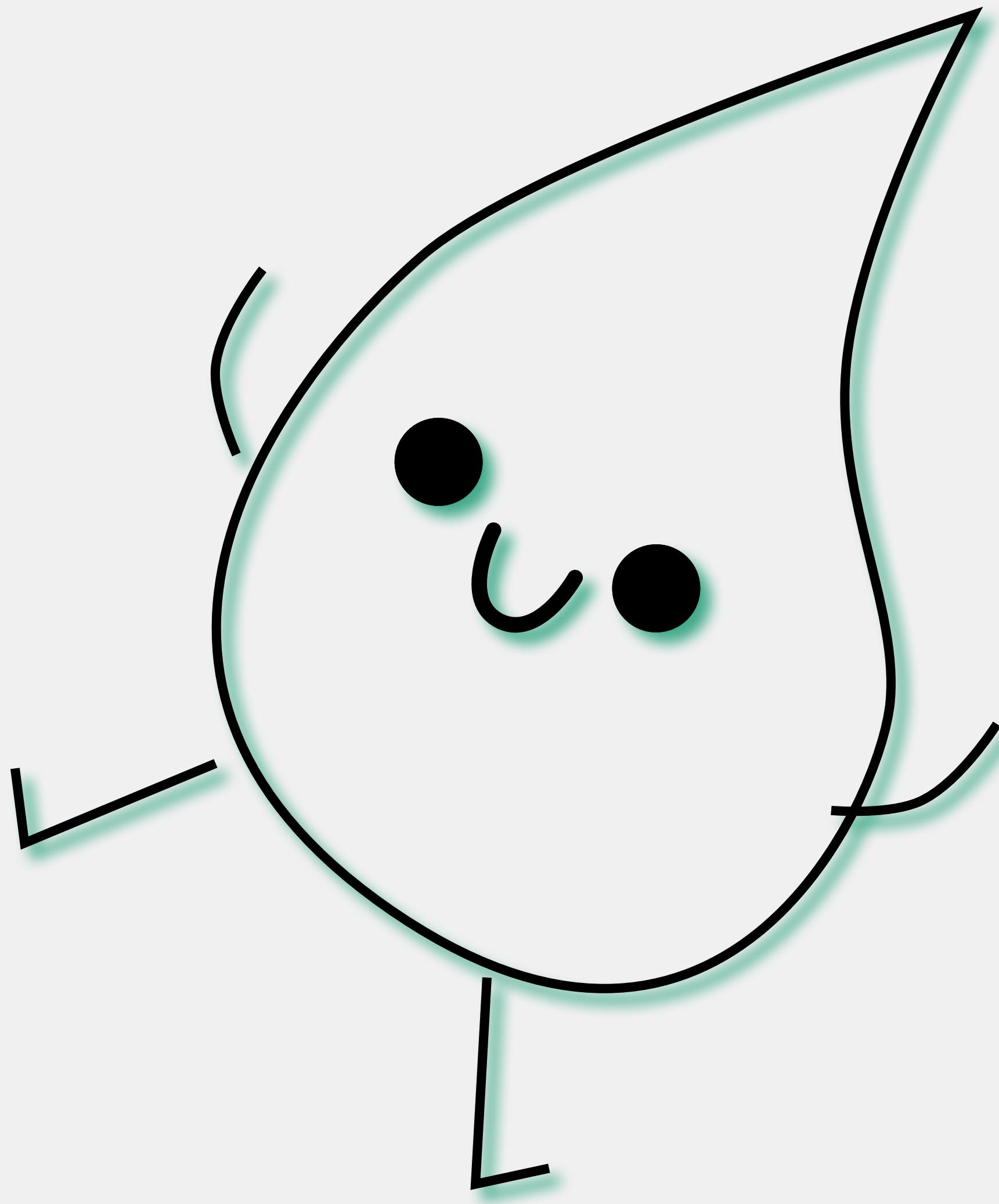


Home

Music

Umi





UMI.
music

...now loading



1

2

3

4



1

2

3

4

1

2

3

4

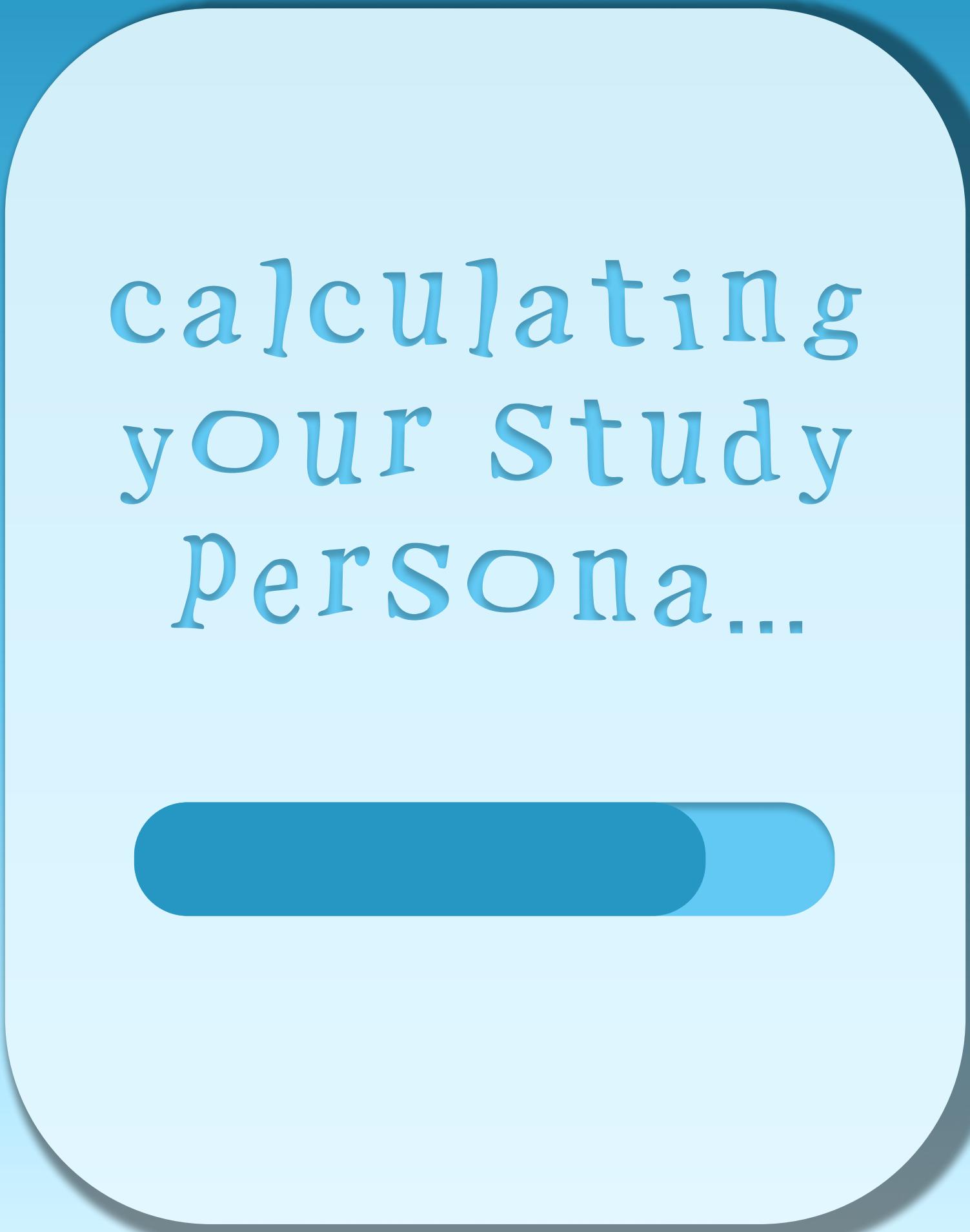


1

2

3

4



calculating
your study
Persona...

Cafe Coder

playlist

genre

genre

genre

about
you

try
again

Save
image

add to
umi
library

add to
spotify
library

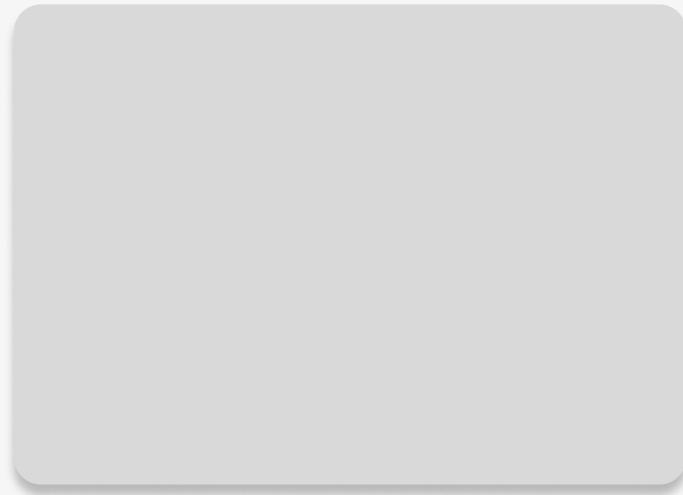
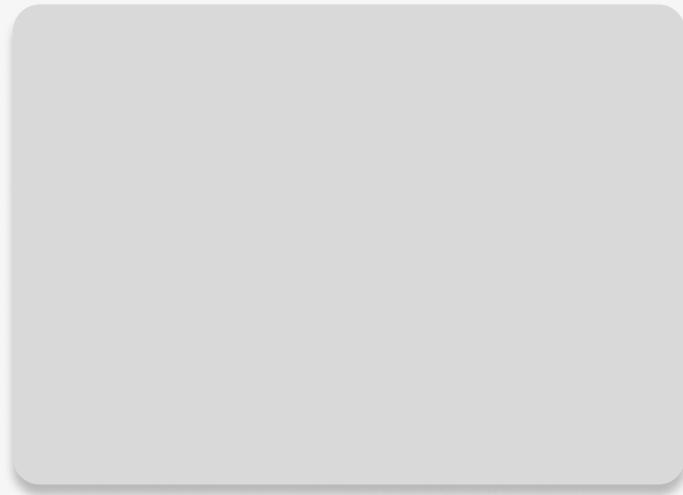
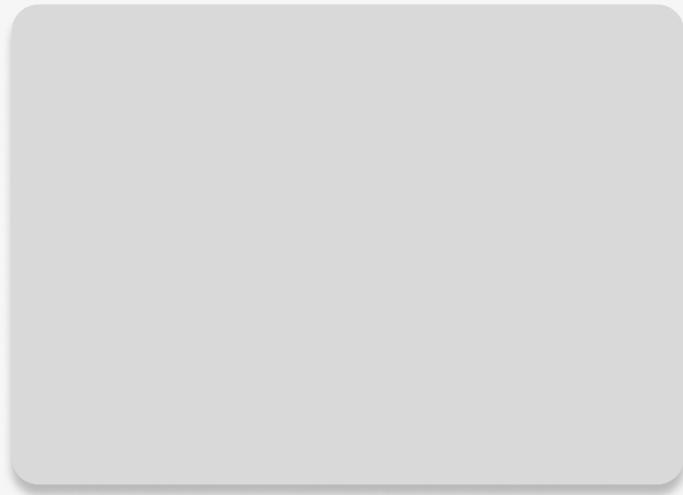
welcome to
UMI.

...now loading



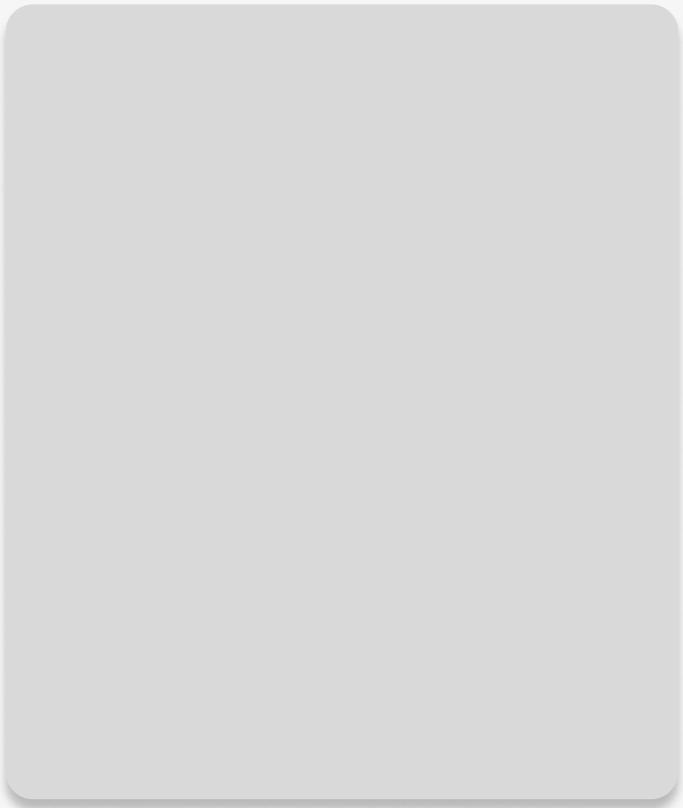


commit to your tasks.



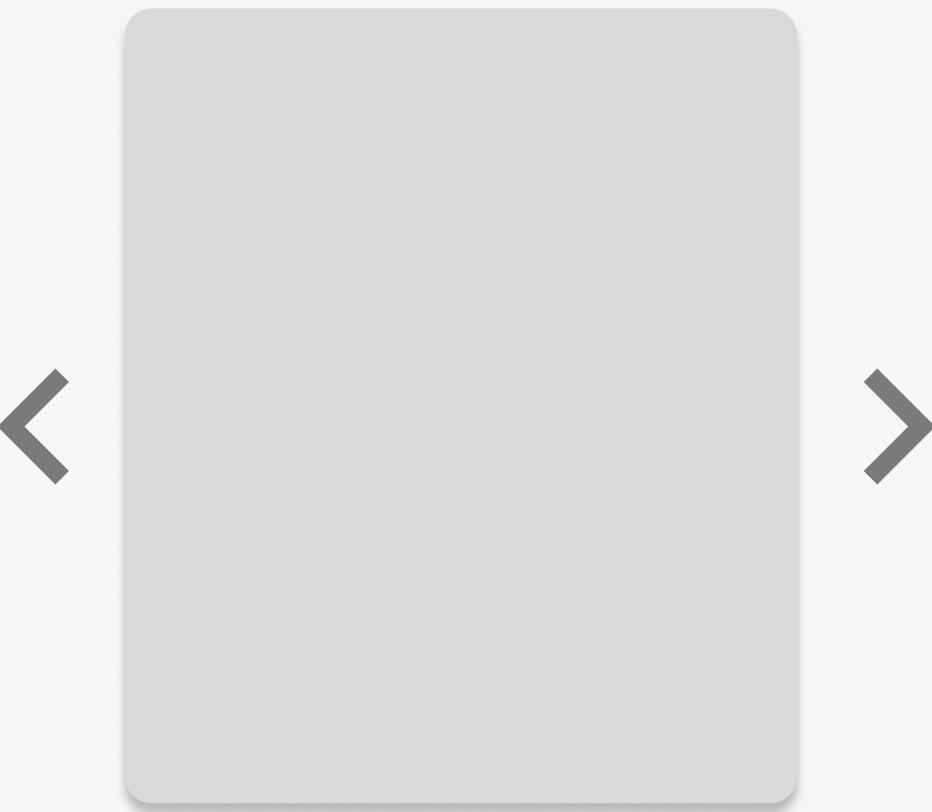


how will you
complete these tasks?



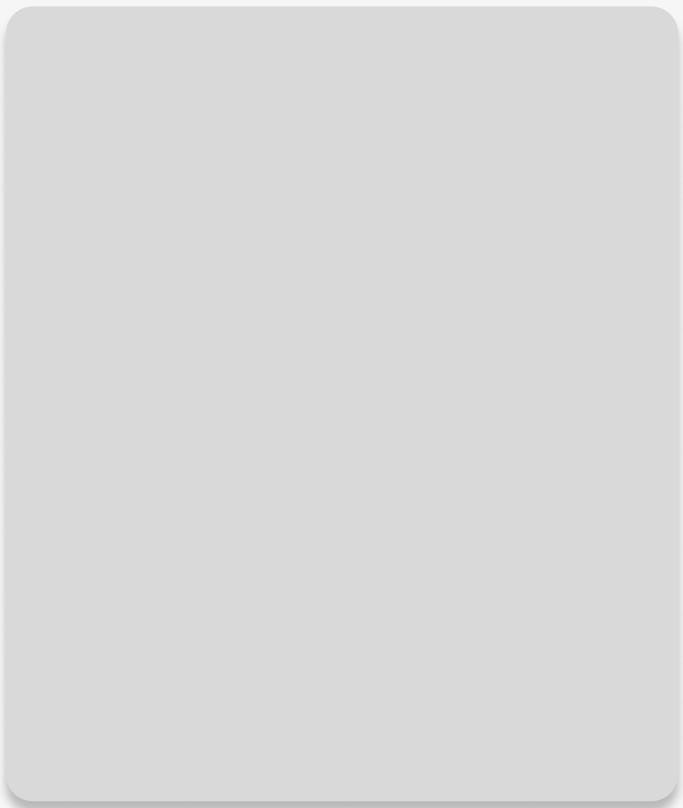


list the distractions
that you will discard.



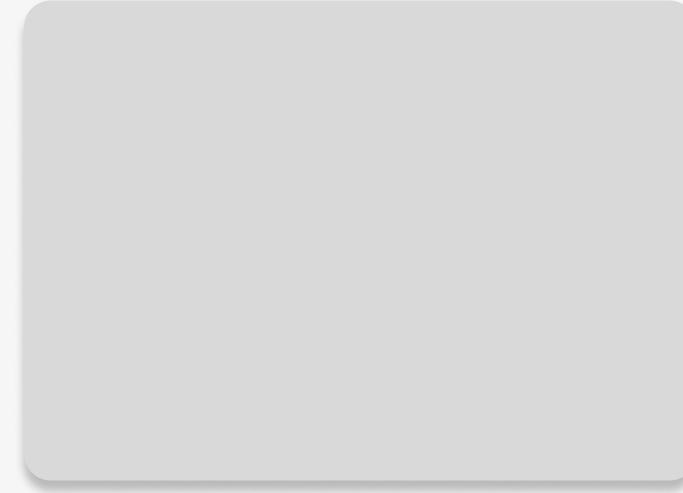
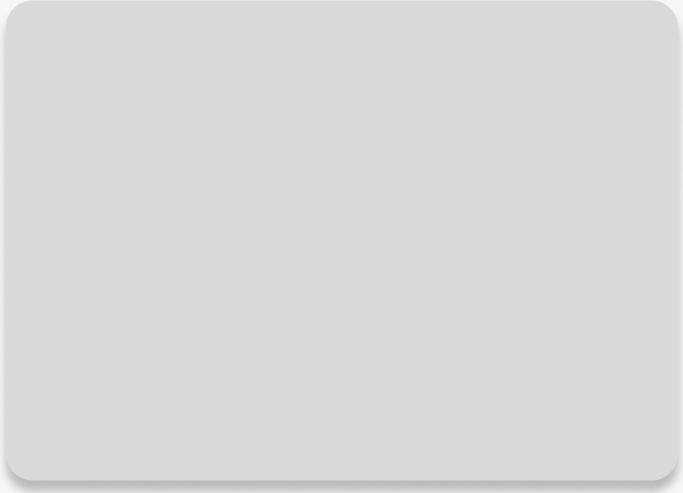
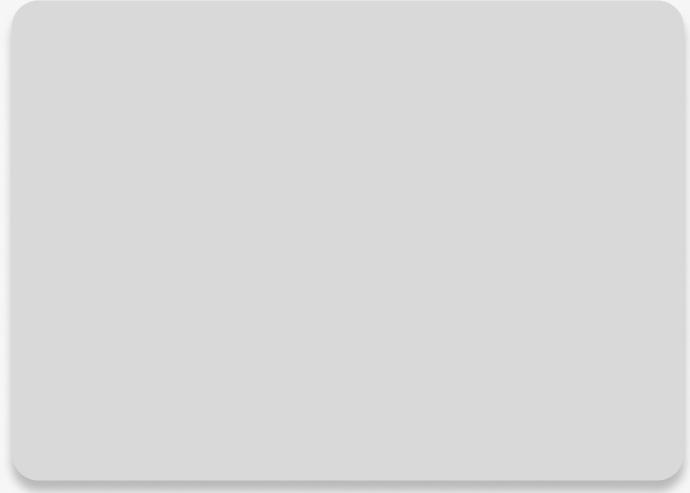


what will you do to
tidy up your workspace?





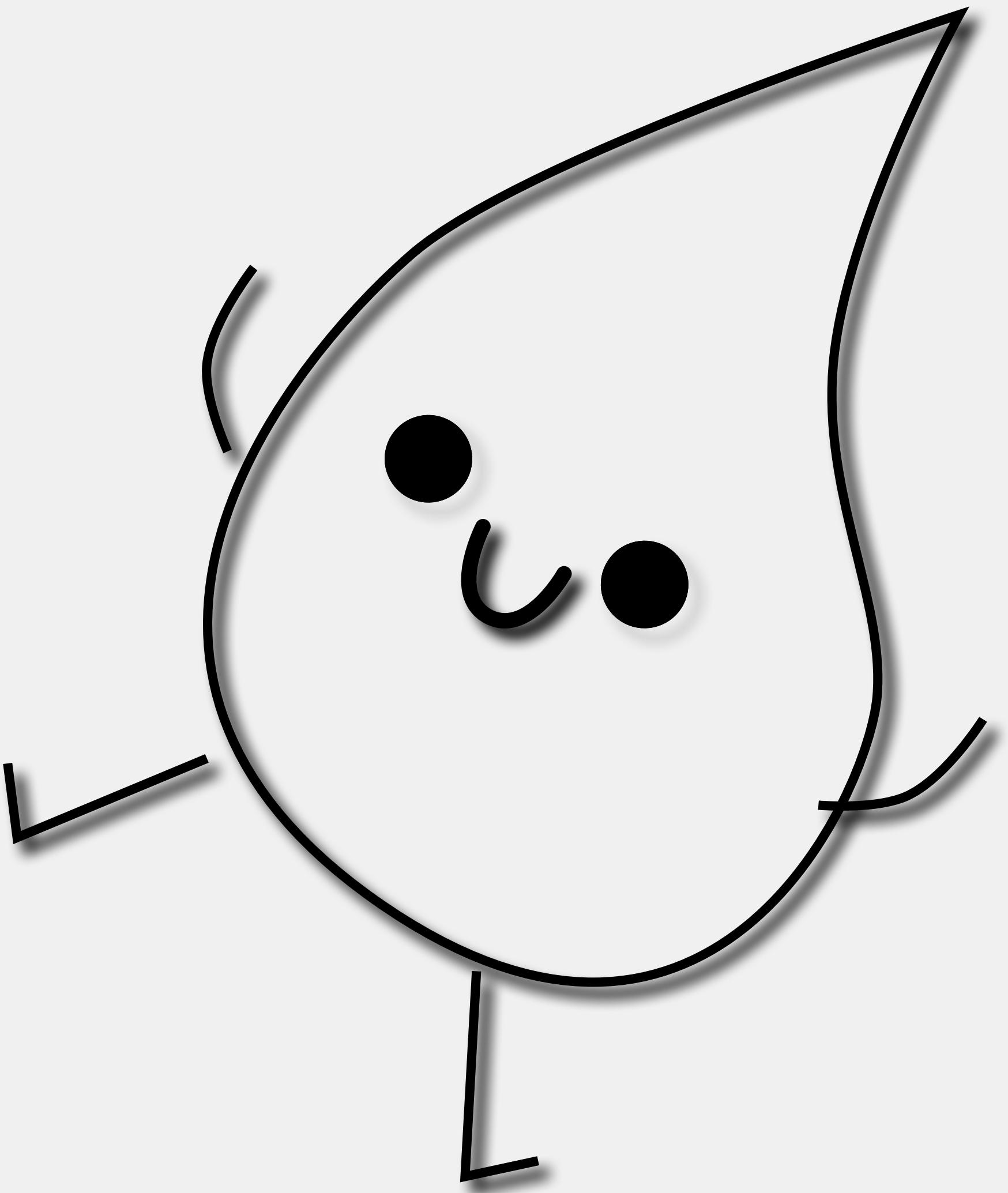
rearrange your week.





are you satisfied?





welcome to
UMI.

...now loading

to continue,
please connect your accounts.



Sign in with Notion



Sign in with Google

try out Umi music.



Sign in with Spotify

welcome to
UMI.

Umi

username

password



Home

Music

Umi



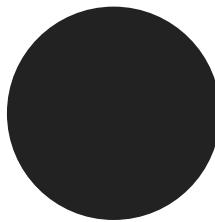
good morning!

today is MM/DD/YYYY.

monday



0:00





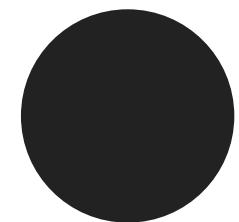
Home

Music

Umi



monday





Home

Music

Umi



monday



song name





Home

Music

Umi



General

Notifications

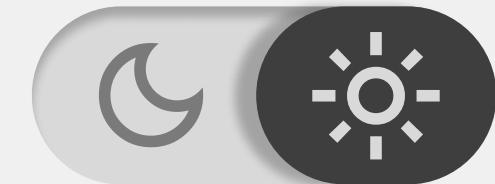
Appearance

Accounts

FAQ

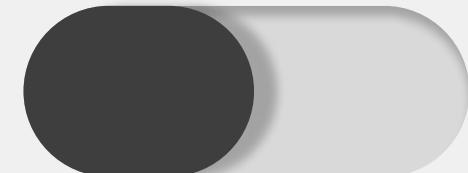
Delete All Data

Dark Mode/Light Mode



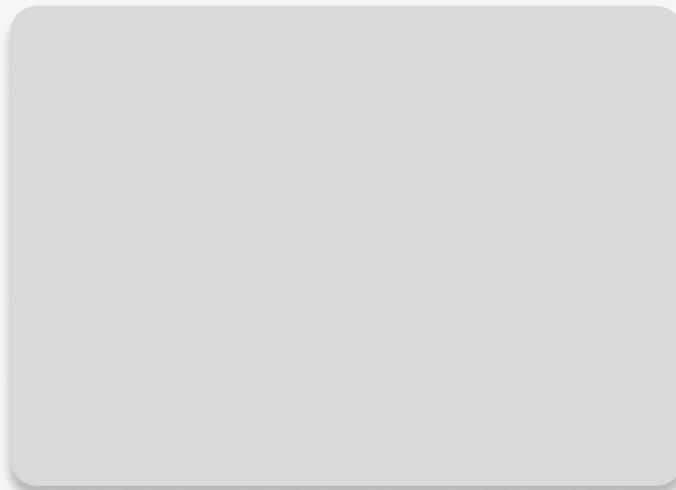
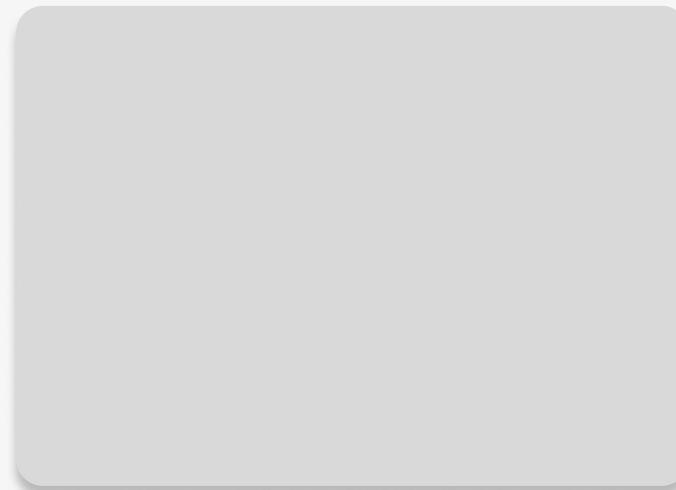
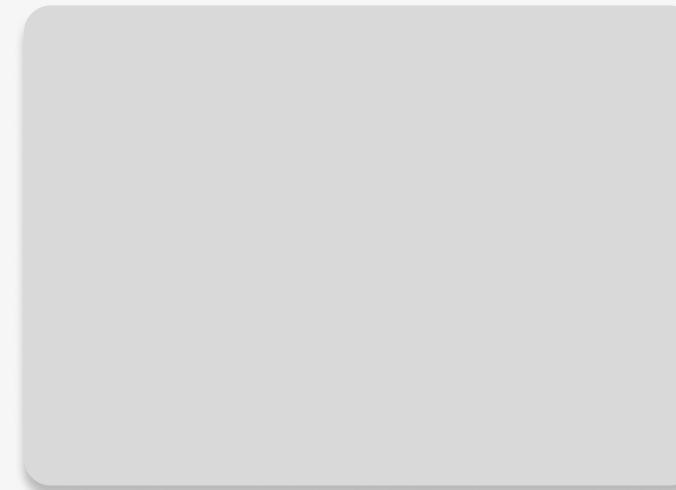
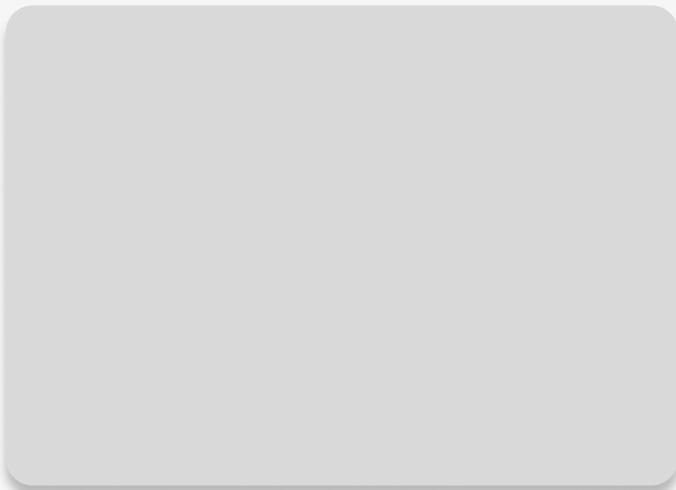
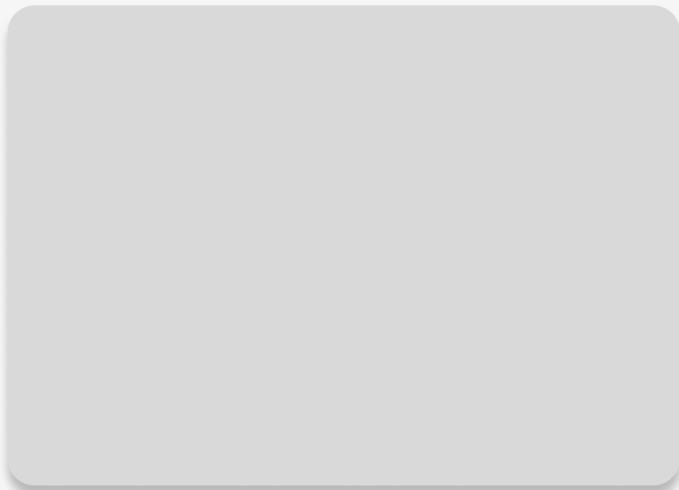
Accent colour

Toggle Mascot





refine your week.





Home

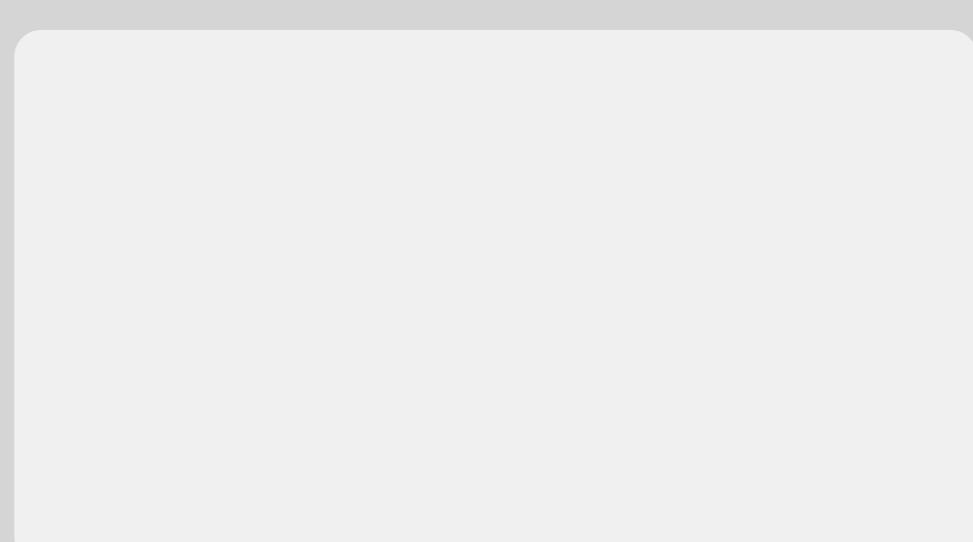
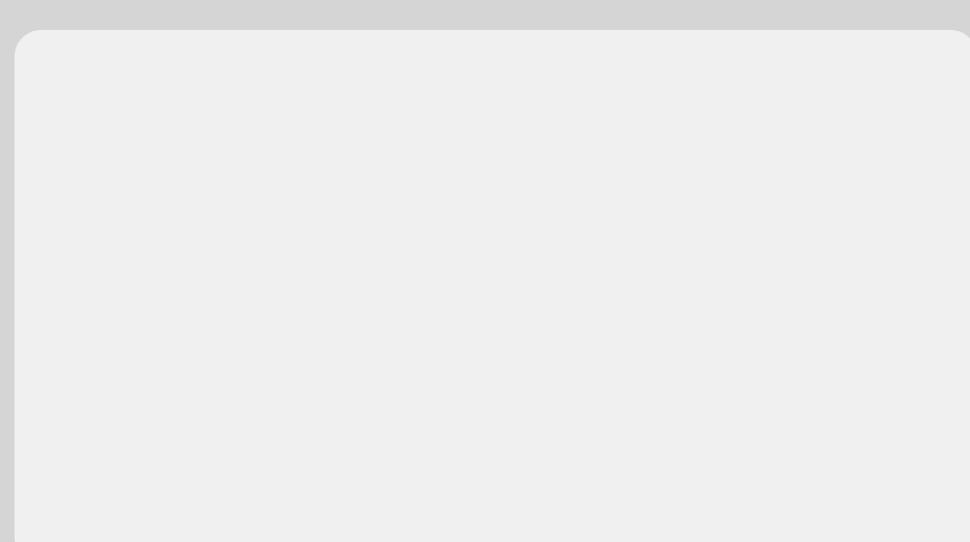
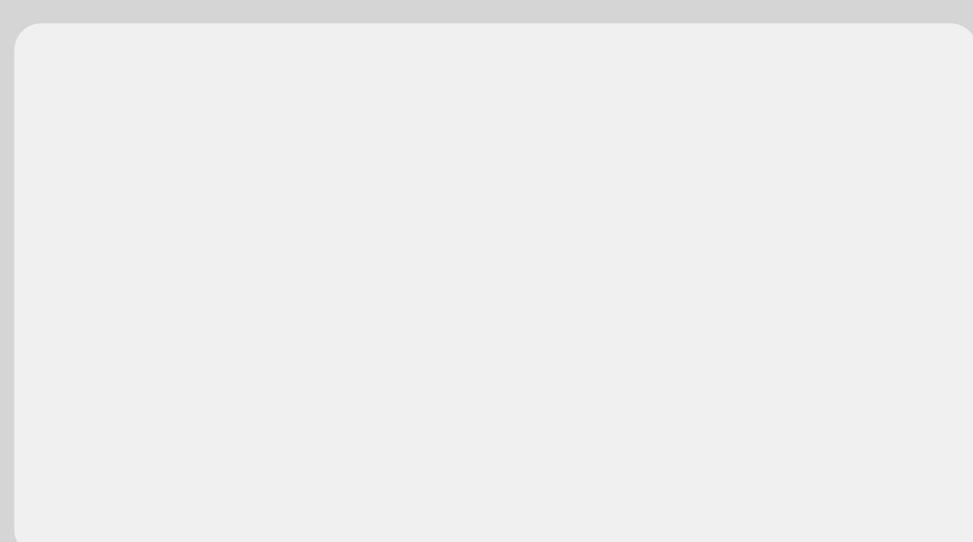
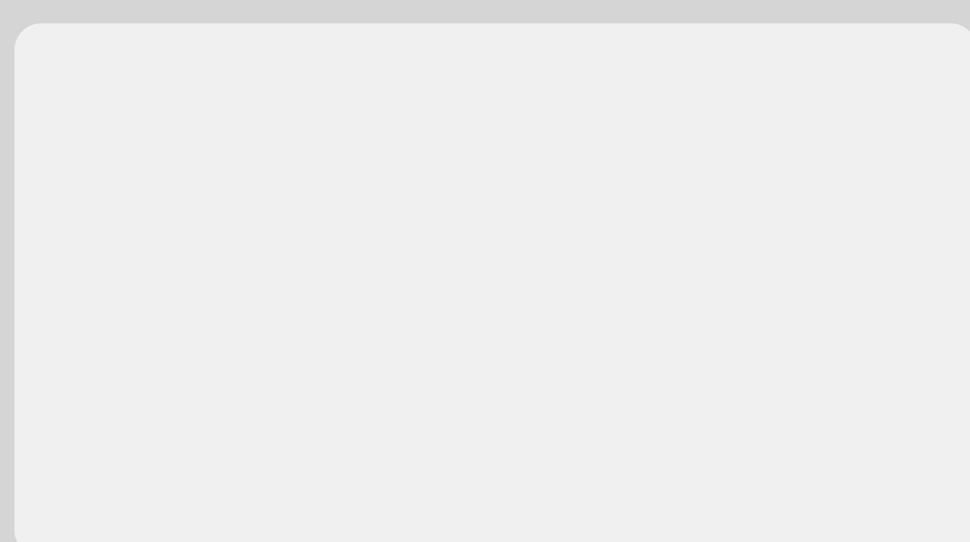
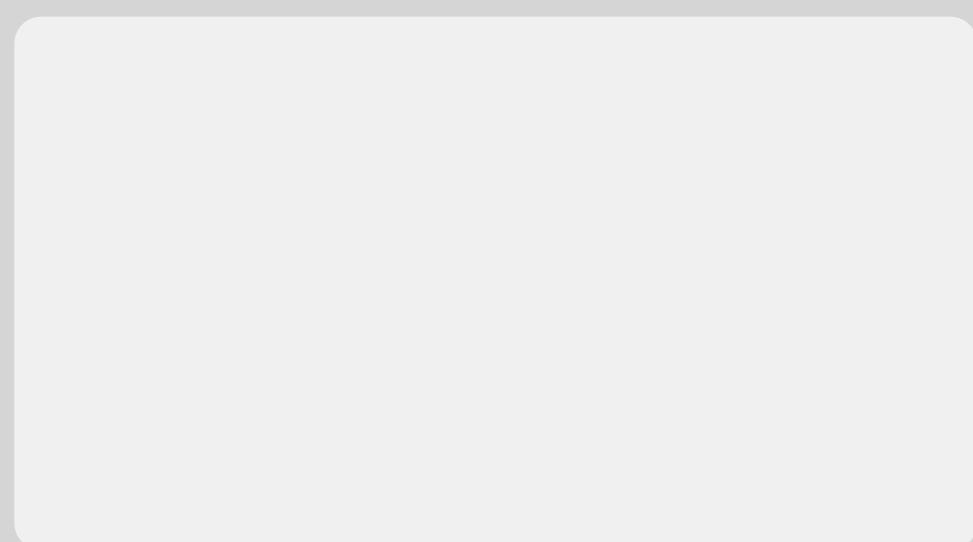
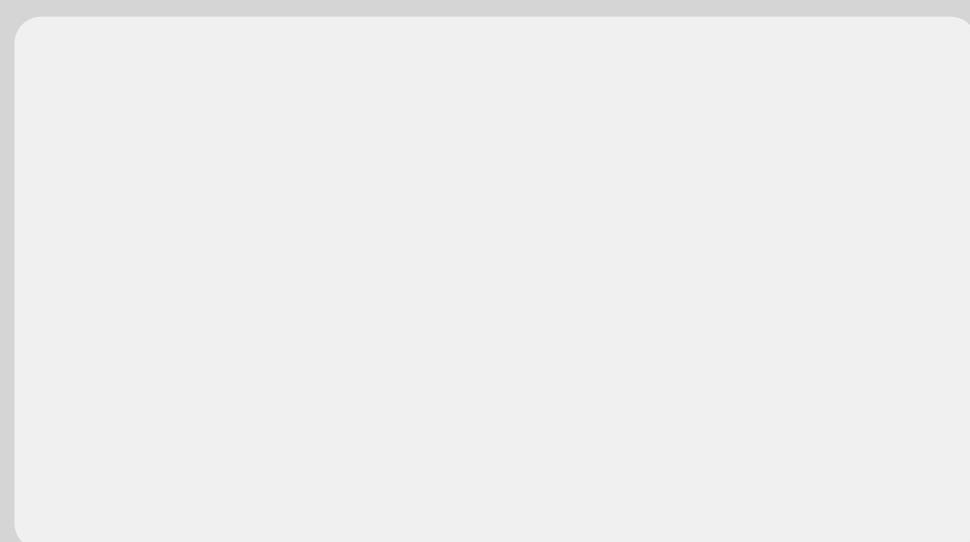
Music

Umi



Frequently Asked Questions

How do I ...



Umi



Heading



Heading



Heading



Contact us!

