

CUBETIMER PRO

**FIRST PRESENTATION OF THE ADVANCED
PROGRAMMING PROJECT**

Santiago Andrés Benavides Coral – 20232020036

Miguel Andres Contreras Rodriguez – 20232020020

Programación Avanzada 020-84

Docente: Carlos Andrés Sierra Virguez

Ingeniería de sistemas

Universidad Distrital Francisco José de Caldas

THE BUSINESS MODEL CANVAS

Key Partnerships <ul style="list-style-type: none">• API Providers (WCA – World Cube Association)	Key Activities <ul style="list-style-type: none">• Scramble generation and timer logic• Develop and maintain the application• User engagement and feedback collection	Key Resources <ul style="list-style-type: none">• Development team• API Access (WCA – World Cube Association)	Channels <ul style="list-style-type: none">• Web platform
Value Propositions <ul style="list-style-type: none">• Precision timer for speedcubing• Automatic scramble generation for different cube types• Automatic statistics update (best time, averages)• Multi-cube support for various types of cubes	Customer Relationships <ul style="list-style-type: none">• Feedback loop for continuous improvement	Customer Segments <ul style="list-style-type: none">• Competitive speedcubers• Casual cubers• Speedcubing clubs and communities	

USER STORIES

1. User Registration

As a new user, I want to create an account so that I can log in and track my progress over time.

2. Cube selection

As a casual cuber, I want to choose the type of cube so that I can time my solves for different type of cubes.

3. Scramble Generation

As a speedcuber, I want to receive a random scramble for my selected cube so that I can practice under standard competition conditions.

4. Start and Stop timer

As a user, I want to start and stop the timer so that I can record the time it takes me to solve the cube.

5. Automatic Statistics Update

As a user, I want my statistics to update automatically after each solve so that I can track my performance easily

6. View Past Performance

As a user, I want to see a history of my past solves so that I can measure my improvement over time

7. Log Out

As a user, I want to log out of the app so that my sesión is securely closed

8. Error Handling

As a user, I want the app to notify me if I make a mistake (e.g., enter the application incorrectly) so that I can correct it quickly and continue using the app.

(HOW DO WE GET TO THESE USER STORIES?)

1. Identify User Roles:
Focused on the main user (the speedcuber) who interacts with the app.
2. Analyze Core Features:
Reviewed the app's core functionality (cube selection, timing, scramble generation, stats).
3. Prioritize Essential Features:
Focused on relevant features like timing, scramble generation, and automatic stats.
4. Map the User Journey:
Traced the steps a user takes from logging in, choosing a cube, solving, and viewing results.
5. Define User Goals:
Created stories by linking each feature to a real users goal and its benefit.

APPLICATION PROCESSES AND COMPONENTS

COMPONENTS

1. Frontend (soon)

This will be the part of the application which interacts with users.

2. Backend

- Timer Component → Manages the core functionality of starting and stopping the timer, it also provides resolution times to the info class for statistics.
- API Component → Responsible for generating scrambles based on the cube type, it also communicates with Cube classes to pass scrambles for display and use.
- Statistics Component → The info class handles all calculations related to solve times (best, average, etc), it also automatically updates when new times are recorded.
- Data Management → This includes the User and Register classes, this manages user authentication, account creation, and session control.

PROCESSES

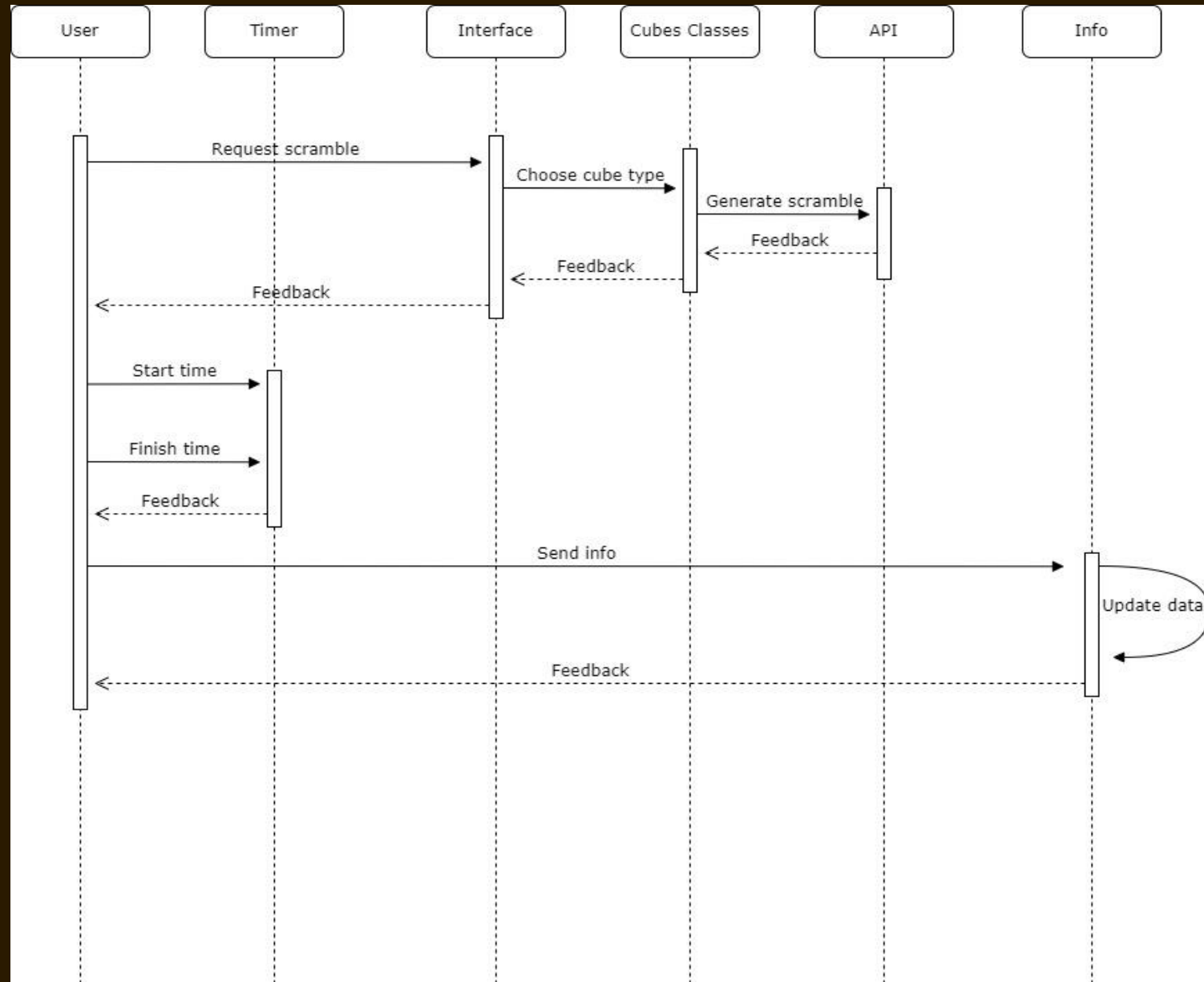
- User Registration and Login → The user creates an account and logs in to access data.
- Cube selection → The user select which cube type they want to solve.

APPLICATION PROCESSES AND COMPONENTS

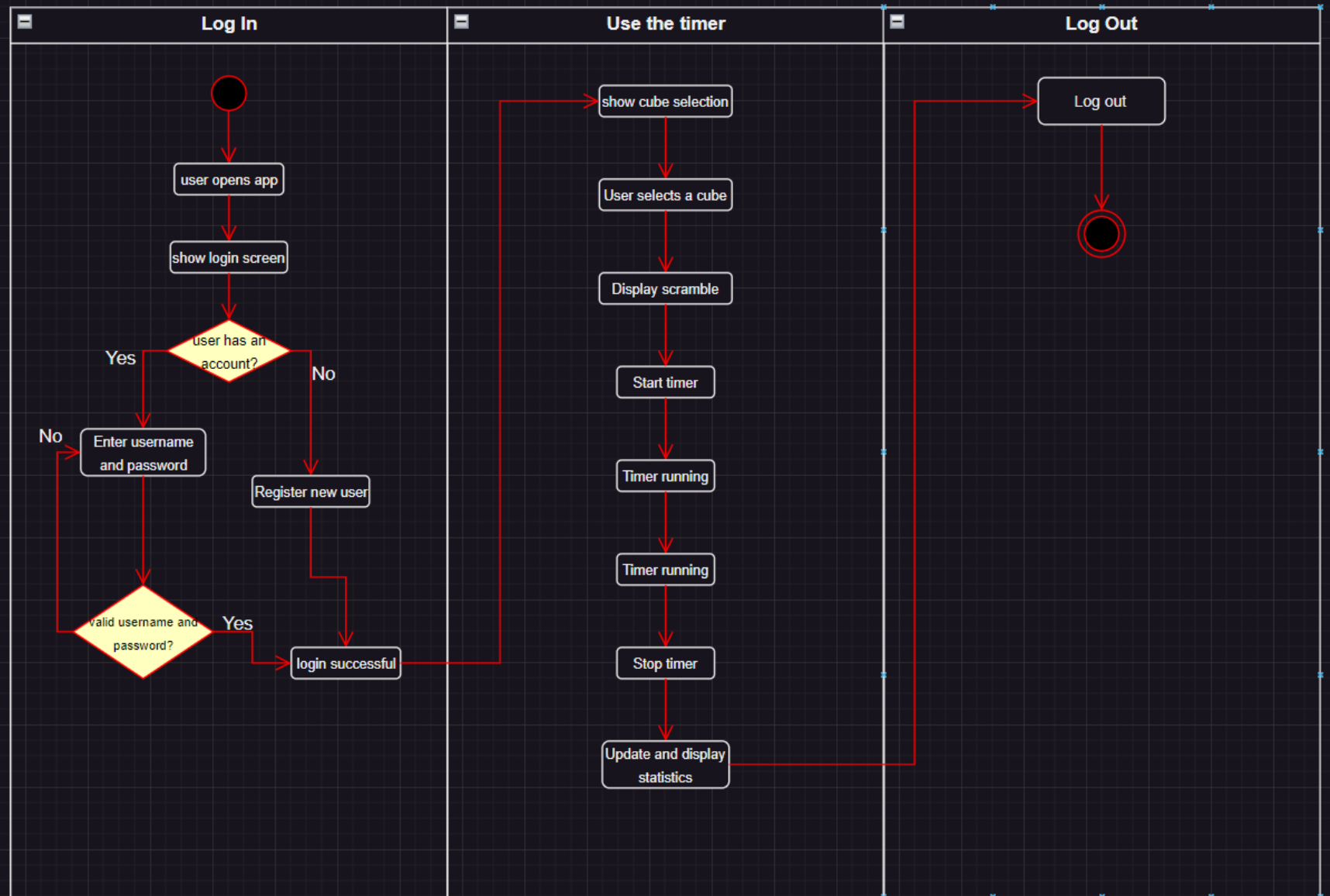
PROCESSES

- Timer Start and Stop → The user starts and stops the timer to record solve times
- Statistics Update → After the user stops the timer, the app automatically updates the user's statistics
- View Solve History → The user can access their past solve times to track progress.
- Log Out → The user can log out of the application

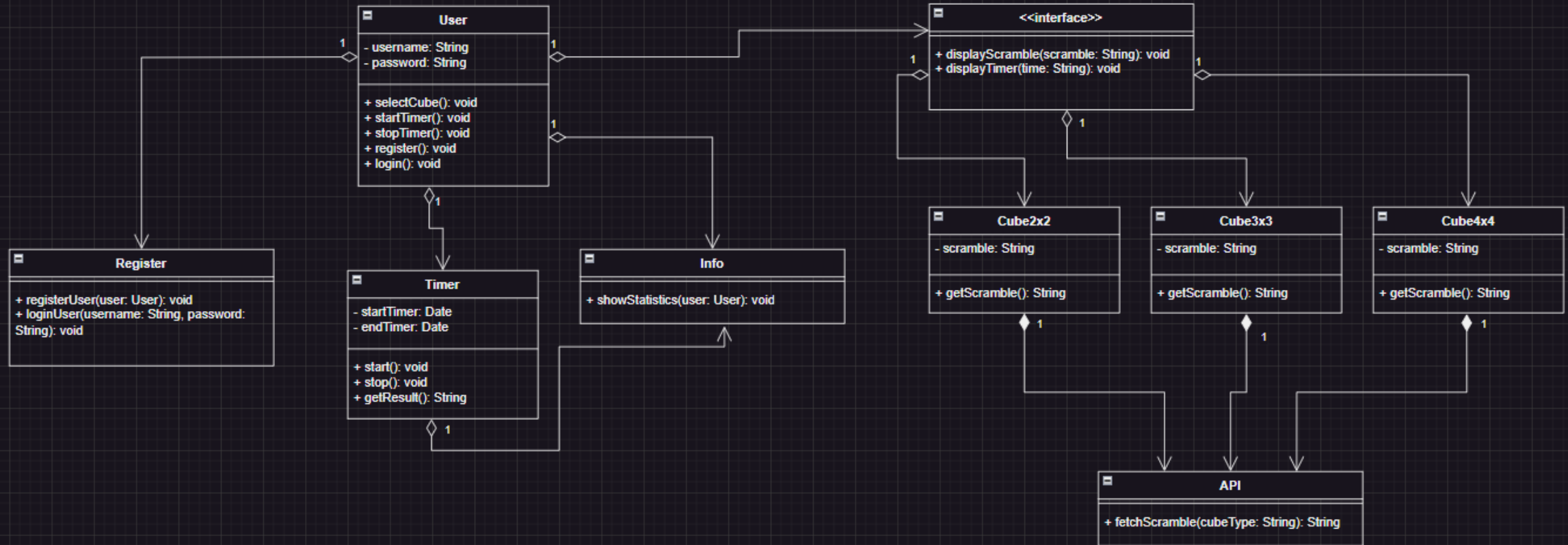
SEQUENCE DIAGRAM



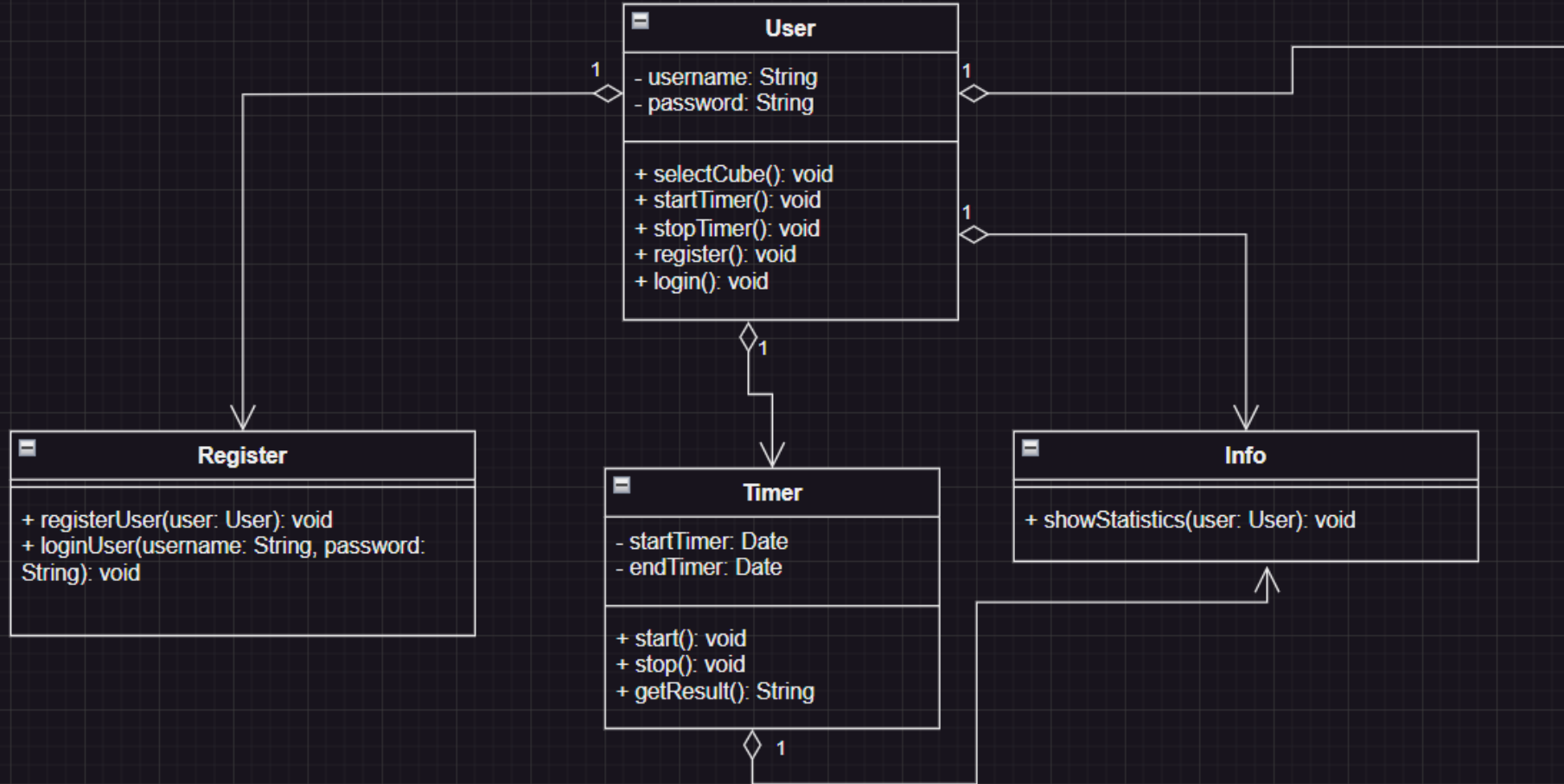
ACTIVITY DIAGRAM



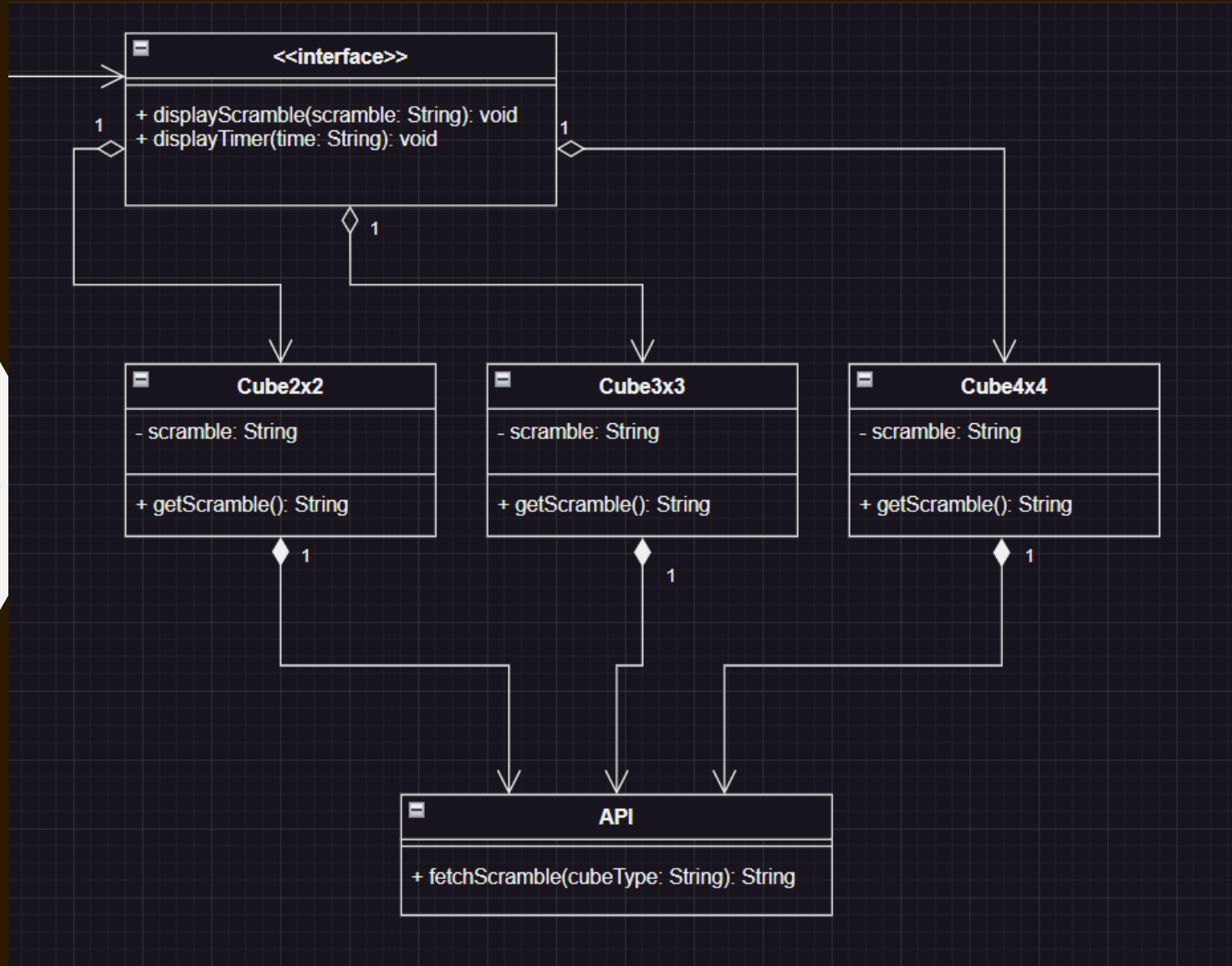
CLASS DIAGRAM



CLASS DIAGRAM



CLASS DIAGRAM



**THANK YOU
VERY MUCH
FOR PAYING
ATTENTION!**