

Phase 1 Report | CS 6400 - Fall 2018 | Team 062

Data Types:

User	Attribute	Data Type	Nullable	Constraint
	Email	string	not null	
	Name	string	not null	< 64 characters
	PIN	Integer	not null	4 digits
	List_of_Follower	List<user>	null	
	List_of_Followee	List<user>	null	
	List_of_watched_corkboard	List<CorkBoard>	null	
	Number_of_corkboards	integer	not null	

Push Pin	Attribute	Data Type	Nullable	Constraint
	Hyperlink	string	not null	
	Description	string	null	< 500 characters
	Tag	List<string>	null	< 10 strings
	Date_time	timestamp	not null	

Comment	Attribute	Data Type	Nullable	Constraint
	Content	string	not null	< 500 characters
	Data_Time	timestamp	not null	

CorkBoard	Attribute	Data Type	Nullable	Constraint
	Title	string	not null	< 64 characters
	Created_Date_time	timestamp	not null	
	Last_posted_date_time	timestamp	not null	
	Category	List<string>	not null	< 10 strings
	Visibility	string	not null	{"Public", "Private"}
	Count_of_pushpins	integer	not null	
	Password	integer	null	4digitals; NULL if visibility is public
	List_of_watchers	List<user>	null	NULL if visibility is private

Business logic constraints:

Logging In

1. Users who are new to CorkBoardIt must register first.
2. One email can only be registered for one account.
3. PIN is a 4-digit PIN.
4. A valid combination of Email and PIN is needed for Users to login CorkBoardIt to manipulate the DBMS including retrieval, insertion, deletion, and modification.
5. An error message will be displayed if the user provides an invalid login credentials.

USER

6. The max number of corkboard a user owned is 500.
7. The max number of pushpin of a corkboard is 20,000.
8. The max number of followed people is 50,000.
9. OWNER can not WATCH his/her own PUBLIC_CORKBOARD.
10. USER can not FOLLOW himself/herself.
11. OWNER can not LIKE his/her own PUSHPIN.
12. Tags are optional and can have as many as USER wants, but have to be separated by commas.
13. COMMENT is optional but can not be deleted by USER
14. The relation of 'LIKE', 'FOLLOW' and 'WATCH' can be deleted, which means 'UNLIKE', 'UNFOLLOW' and 'UNWATCH'.

CORKBOARD

15. The list of Category of CORKBOARD is fixed and managed by the database administrator. It has the following initial list:
 - Education
 - People
 - Sports
 - Other
 - Architecture
 - Travel
 - Pets
 - Food & Drink
 - Home & Garden
 - Photography
 - Technology
 - Art

PUSHPIN

16. The supported file extension of a image from URL are **.jpg**, **.png**, and **.gif** etc.

Task Decomposition & Abstract Code:

Login

Task Decomp

Lock Types: Read-only on User

Number of Locks: Single

Enabling Conditions: None

Frequency: Around 200 logins per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- User enters *email* and *pin* into input fields.
- If data validation is successful for both *email* and *pin* input fields, then:
- When *Login* button is clicked:
- If User record is found but *pin* is incorrect:
 - Go back to Login form, with error message.
- Else:
 - Go to Home Screen form.
- Else *email* and *pin* input fields are invalid, display Login form, with error message.

View CorkBoard Home Screen

Task Decomp

Lock Types: Read-only on Watcher, Owner, CorkBoard,

Pushpin

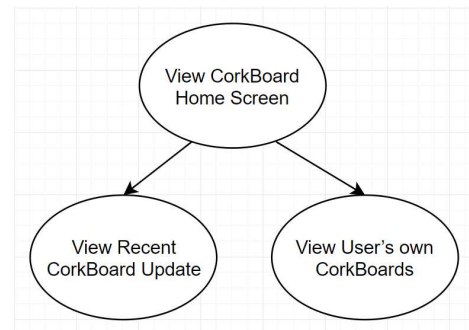
Number of Locks: 4

Enabling Conditions: Successfully log in as user

Frequency: Around 300 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: View Recent CorkBoard Update. View User's own CorkBoard



Abstract Code

- User clicked on *login* button from login form.
- Run the view corkboard task: query for information about the recent Corkboard updates and my Corkboards
 - The “Recent CorkBoard Update” will show the corkboard which belongs to the owner that user follow or the corkboard which user watch
 - Find the corkboard using the corkboard Title. For each corkboard, display the owner, and the data/time of the last Pushpin.
- If the corkboard is private, display the class of the corkboard.

- Find the corkboard the user owns. For each corkboard, display the title of the corkboard and the number of pushpins on that board.
- Click *Popular Tags* button, jump to the **View Popular Tags** task.
- Click *Add Corkboard* button, jump to the **Add Corkboard** task.
- User enters *search keyword* into input fields.
- Click *Pushpin Search* button, jump to the **Pushpin Search** task.

View Recent CorkBoard Update

Task Decomp

Lock Types: Read-only on Watcher, Owner, CorkBoard, Pushpin

Number of Locks: 4

Enabling Conditions: Successfully log in as user

Frequency: Around 300 per day

Consistency (ACID): not critical, order is not critical.

Supertask: View CorkBoard Home Screen

Abstract Code

- Query for information about the recent Corkboard updates and my Corkboards
- The “Recent CorkBoard Update” will show the corkboard which belongs to the owner that user follow or the corkboard which user watch

View User’s own CorkBoard

Task Decomp

Lock Types: Read-only on Watcher, Owner, CorkBoard, Pushpin

Number of Locks: 4

Enabling Conditions: Successfully log in as user

Frequency: Around 300 per day

Consistency (ACID): not critical, order is not critical.

Supertask: View CorkBoard Home Screen

Abstract Code

- Find the corkboard the user owns. For each corkboard, display the title of the corkboard and the number of pushpins on that board.

Enter Private Corkboard Password

Task Decomp

Lock Types: Read-only on User, Private_CorkBoard

Number of Locks: 2

Enabling Conditions: Successfully log in as User

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- User enters password into input fields.
- Click *OK* button, jump to the **watch corkboard** task.
- Click *Cancel* button, jump to the **view corkboard home screen** task.

Add CorkBoard

Task Decomp

Lock Types: Read-only on Owner, Write on Corkboard

Number of Locks: 2

Enabling Conditions: Successfully log in Owner

Frequency: Around 200 per day

Consistency (ACID): not critical, original Corkboard could be viewed when editing a new CorkBoard.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- Populate Category dropdowns.
- User enters *Title* into input field.
- User choose visibility of the adding corkboard.
 - If the adding corkboard is Private, then enter *password* into input field.
- Click *Add* button, add data to the corkboard form, jump to the **View Corkboard** task.

View CorkBoard

Task Decomp

Lock Types: Read-only on Watcher, Owner, Corkboard, Pushpin

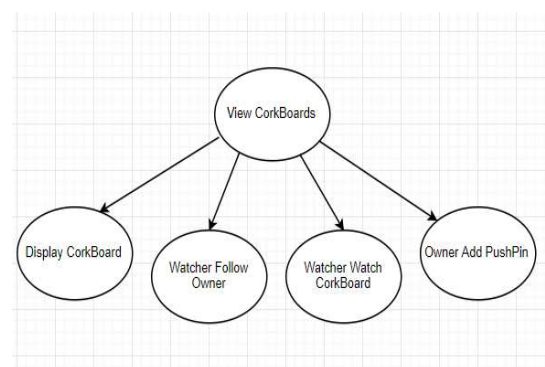
Number of Locks: 4

Enabling Conditions: Successfully log in as User, View Public Corkboard or View the private Corkboard with the correct password

Frequency: Around 600 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Display CorkBoard, Watcher Follow Owner, Watcher Watch CorkBoard, Owner Add Pushpin



Abstract Code

- Run the View Corkboard task, query information about the corkboard; Display the owner, title, and last updated date/time, Category, of the Corkboard. .

- Query information of all the pushpin in this corkboard.
- Query information of the watcher of this corkboard, display the total number of watcher to this corkboard.
- Click *Follow* button, follow the user who owns the Corkboard.
- Click *Add Pushpin* button, jump to the **Add Pushpin** task.
- Click image, jump to the **View Pushpin** task.
- If the corkboard is owned by other user.
 - If the corkboard is public.
 - Click the *watch* button to watch the corkboard.

Add Pushpin

Task Decomp

Lock Types: Read-only on Owner, Write on Pushpin, CorkBoard

Number of Locks: 3

Enabling Conditions: Successfully log in Owner

Frequency: Around 200 per day

Consistency (ACID): not critical, the original Pushpin, CorkBoard can be viewed while adding the Pushpin.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- User enters *URL*, *Description* and *Tags* into input fields.
 - If enter *Tags*, each tag should be separate by commas.
- When Click *Add* button
 - If input *URL* is valid.
 - Jump to **View Corkboard** task.

View Pushpin

Task Decomp

Lock Types: Read-only on Watcher, Owner, Corkboard, Pushpin

Number of Locks: 4

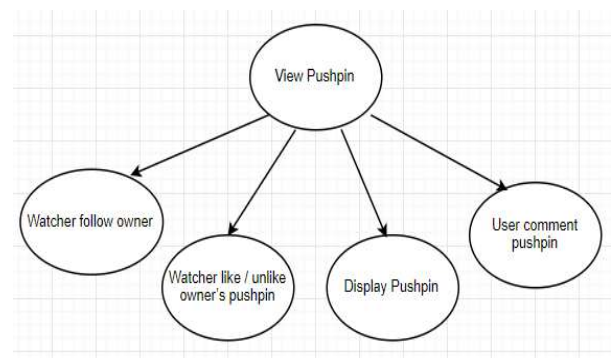
Enabling Conditions: Successfully log in as user

Frequency: Around 600 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Display Pushpin, Watcher follow owner,

Watcher like owner's pushpin, Watcher unlike owner's pushpins. User comment pushpin.



Abstract Code

- User click the hyperlink from View Corkboard.
- Run the View Pushpin task, query for information about the owner of the Corkboard which the pushpin pinned, the title of the Corkboard, data and time the first pinned.
- Query for information about the image and the tags.
- Query information about the user who comment this pushpin and the content of the comment.
- When click *Follow* button, update the Follow relation form.
- When click Hyperlink of the Corkboard title, jump to the **View Corkboard** task.
- When click *Like* button, update the user like relation form.
- When *Like* button has been clicked. There's an *UnLike* button. Click the *UnLike* button and update the user like relation form.
- When click *Post Comment* button, update the user comment pushpin form.

Watcher follow owner

Task Decomp

Lock Types: Read-only on Watcher, Owner, write on Follow

Number of Locks: 3

Enabling Conditions: Successfully log in as user

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Super Task: View Pushpin

Abstract Code

- When click *Follow* button, update the Follow relation form.

Watcher like/ unlike owner's pushpins

Task Decomp

Lock Types: Read-only on Watcher, Owner, write on like

Number of Locks: 3

Enabling Conditions: Successfully log in as user

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Super Task: View Pushpin

Abstract Code

- When click *Like* button, update the user like relation form.
- When *Like* button has been clicked. There's an *UnLike* button. Click the *UnLike* button and update the user like relation form.

User comment pushpins

Task Decomp

Lock Types: Read-only on User, pushpins. write on comment

Number of Locks: 3

Enabling Conditions: Successfully log in as user

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Super Task: View Pushpin

Abstract Code

- When click *Post Comment* button, update the user comment pushpin form.

Search for Pushpin

Task Decomp

Lock Types: Read-only on Owner, Public_CorkBoard, Pushpin

Number of Locks: 3

Enabling Conditions: Successfully log in as user

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- Query the information of Pushpin Description, Category and owner of the Corkboard which the pushpin pinned.
- Sorted the results alphabetically by Pushpin description.
- Click the hyperlink of the pushpin description, jump to **View Pushpin** task.

View Popular Tags

Task Decomp

Lock Types: Read-only on Pushpin, CorkBoard

Number of Locks: 2

Enabling Conditions: Successfully log in as user

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- Query the information of Tag, the number of Pushpins with this tag and the corresponding unique corkboards number.
- sorted the results alphabetically by number of Pushpins with the highest appearing first.
- Click the hyperlink of the tag, jump to **Search for Pushpin** task.

View Popular Sites

Task Decomp

Lock Types: Read-only on Pushpin

Number of Locks: Single

Enabling Conditions: Successfully log in as user

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- Query the information of Sites that the most pushpin links.
- Validate the name of the sites and display by number of Pushpins with the highest appearing first.

View Corkboard Statistics

Task Decomp

Lock Types: Read-only on Public CorkBoard, Private CorkBoard, Pushpin, User

Number of Locks: 4

Enabling Conditions: Successfully log in as user

Frequency: Around 100 per day

Consistency (ACID): not critical, order is not critical.

Subtasks: Mother Task is not needed. No decomposition needed.

Abstract Code

- Populate the query result on screen.
- Print the current user's row to red.