



Department of Information Technology

Vincent School Mary of Science and Technology

IT4314: Software Engineering Concepts

Topic

Crowdfunding System

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Submitted to

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Crowdfunding System

Crowdfunding is the practice of venture by raising monetary contributions from a large number of people. It has been used to fund various different kinds of the projects, which are not limited to software or innovation projects such as music, art, and craft.

Generally, it is a web-based system that allows users to create a project to express their ideas on the website and persuade other people to give them a financial support in order to make it become reality. Those who fund a project may get a reward in return as a gift depending on what the creator will offer.

Statement of Problems

There are only three main problems that we aim to solve:

1. Lack of budget

The problem is that some project creators do have creative ideas, but do not have enough money to develop or make their projects real because they are small organizations or even individuals.

2. Difficult to get money

For developing projects, Thai people usually engage the competitions for finding money such as AIS Startup Competition or get bank loans. It is not easy to win a competition as well as pass a bank's criteria.

3. Project's failure

Some project's owners may be able to find money to create a project, but it turns out to be not interesting enough for the public. It is probably because they do not get

feedback or the public's opinion on the project ideas and how to improve them when developing.

User Requirements

Authorized access or login by using username/password is required for all users.

Project creator

- Able to create a project on the system.
- Able to optionally provide rewards for funders.
- Able to update the project to show the progress of how they've developed.
- Able to see who has given them a financial support and how much.
- Able to get money if the project's funding goal is reached.

Project funder

- Able to browse and see all projects in details.
- Able to read and comment feedback on a project page.
- Able to pledge money for their interested projects.
- Able to choose an available reward.

Admin

- Able to see the detail of all users.
- Able to approve or disapprove submitted projects before publishing.

Objectives

The goal of the project is to develop a web-based crowdfunding platform that allows users to gain seed funding for their project.

1. To develop and design a practical and user- friendly website that consists of crowdfunding platform and also content management platform.
2. To provide a platform for project funders to give monetary supports to project ideas.
3. To provide a platform for project owners to publish and promote their project ideas.

Scope & Limitations

Scope

There are 3 level of users involve in this system:

- 1) Project creator
- 2) Project funder
- 3) Admin

All levels of users are able to login to the system by using corresponding username and password, and also view all contents including projects from the project creators. So, login/logout and view contents are basic functions for all users.

Project creator

- Create a project

All users can create a project and become project creators. They must provide information about their projects in details such as title, image, description, fundraising goal, ended date, and so on.

- Provide rewards

They can optionally provide rewards as a gift for funders. Each pledging range will give different kinds of rewards.

- Update the project

Once project creators publish their project, they can update the progress as well as communicate to funders on the project page.

- View pledging details of their own project

They are able to see who is supporting their projects and the amount project creators get from each funders.

- Collect funds

When their projects reach the funding goal, they can collect their fund.

Project funder

- Comment on the projects

Users can give a feedback or communicate with the project creators by commenting on their project pages.

- Support projects by pledging money

If users are interested in the projects, they can give them a monetary support. But, their money won't be charged if the project funding does not reach the funding goal.

- Select a reward

Funders can choose an available reward based on the range of their monetary support.

Admin

- View user's information

Admin can view and delete user's record.

- Preview submitted projects before showing on the web

This is up to admin's consideration to decide which project is allowed to publish on the website as some projects may not be appropriate or consistent with the concept of our system. If the project is not approved, the project creator has to redefine it.

Limitation

- There is no guarantee that the project creator will be able to complete what they have claimed.
- If a project funding cannot reach its goal, the project will be failed and no money will be charged.
- The payment method is limited to online payment only such as PayPal and credit/debit card.
- Funding money is not refundable once the project creators receive them.
- Admin has to approve every single project manually.
- Admin is not allowed to create and funds projects.

Cost & Benefits

Cost of the proposed system

Cost for Server		
1	SSD Hosting Package (Ruk-Com Hosting) 5GB Storage Space 50GB Bandwidth Directadmin Reverse Proxy Free SSL	599/year

	Total cost for server	599/year
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Cost for Development		
2	MacBook Air (11-inch, mid 2012) macOS Sierra 1.7 GHz Intel Core i5 4GB 1600 MHz DDR3 Intel HD Graphic 4000 1536 MB	36,900.00
	Total cost for development	36,900.00

Cost for Operation		
3	Domain Registration	350
	Total cost for operation	350

Benefits of the proposed system

By developing this Crowdfunding System, it will provide several benefits as following:

- Provide an alternative source of funding in Thailand.
- Easier to pitch and promote the project ideas by using our platform.
- Easier communication between project creators and funders. Also, they are able to use feedbacks to make a better project.
- Can be used as a marketing validation to see if the project is interesting enough for public.

Project Management

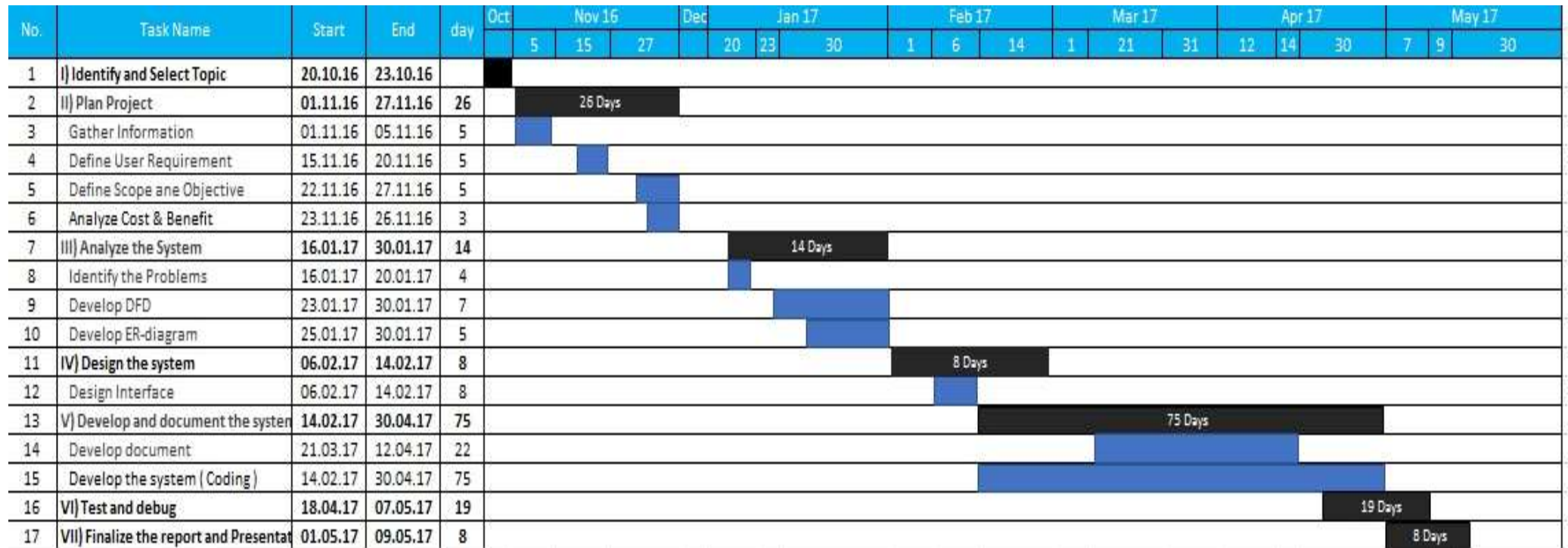


Figure 2: Gantt Chart for Project Management

Entity Relationship Diagram (ERD)

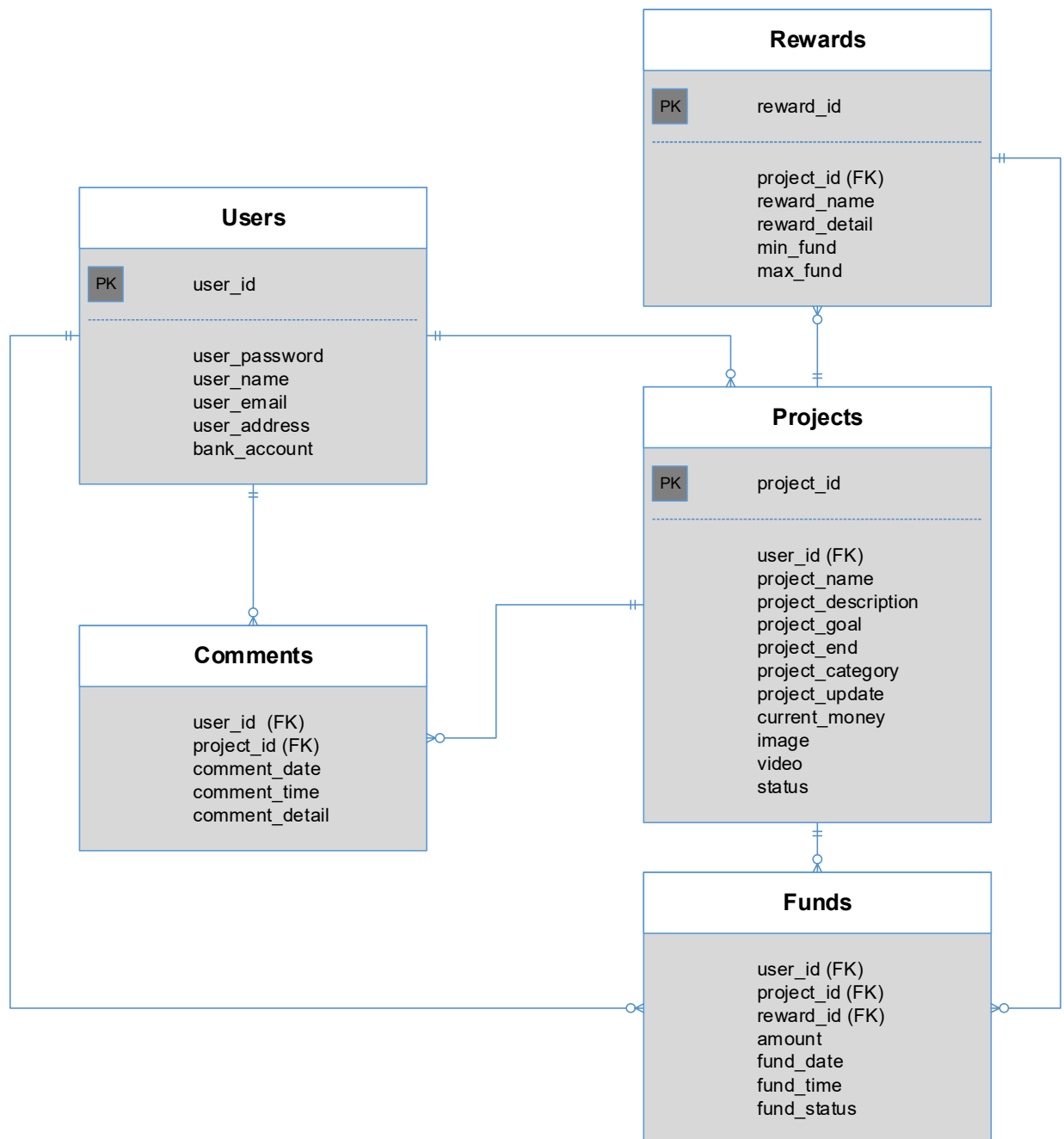


Figure 3: Entity Relationship of Crowdfunding System

Database Design

Table: Users

Attribute: [user_id, user_password, user_email, user_name, user_address, bank_account]

Primary Key: user_id

Foreign Key: None

Table: Projects

Attribute: [**project_id**, project_name, project_category, project_goal, project_end,
current_money, status, project_update, user_id]

Primary Key: project_id

Foreign Key: user_id

Table: Rewards

Attribute: [**reward_id**, reward_name, reward_detail, min_fund, max_fund, project_id]

Primary Key: reward_id

Foreign Key: project_id

Table: Fundings

Attribute: [amount, fund_date, fund_time, fund_status]

Primary Key: None

Foreign Key: user_id, project_id, reward_id

Table: Comments

Attribute: [comment_date, comment_time, comment_detail]

Primary Key: None

Foreign Key: user_id, project_id

Logical Design of the Crowdfunding System

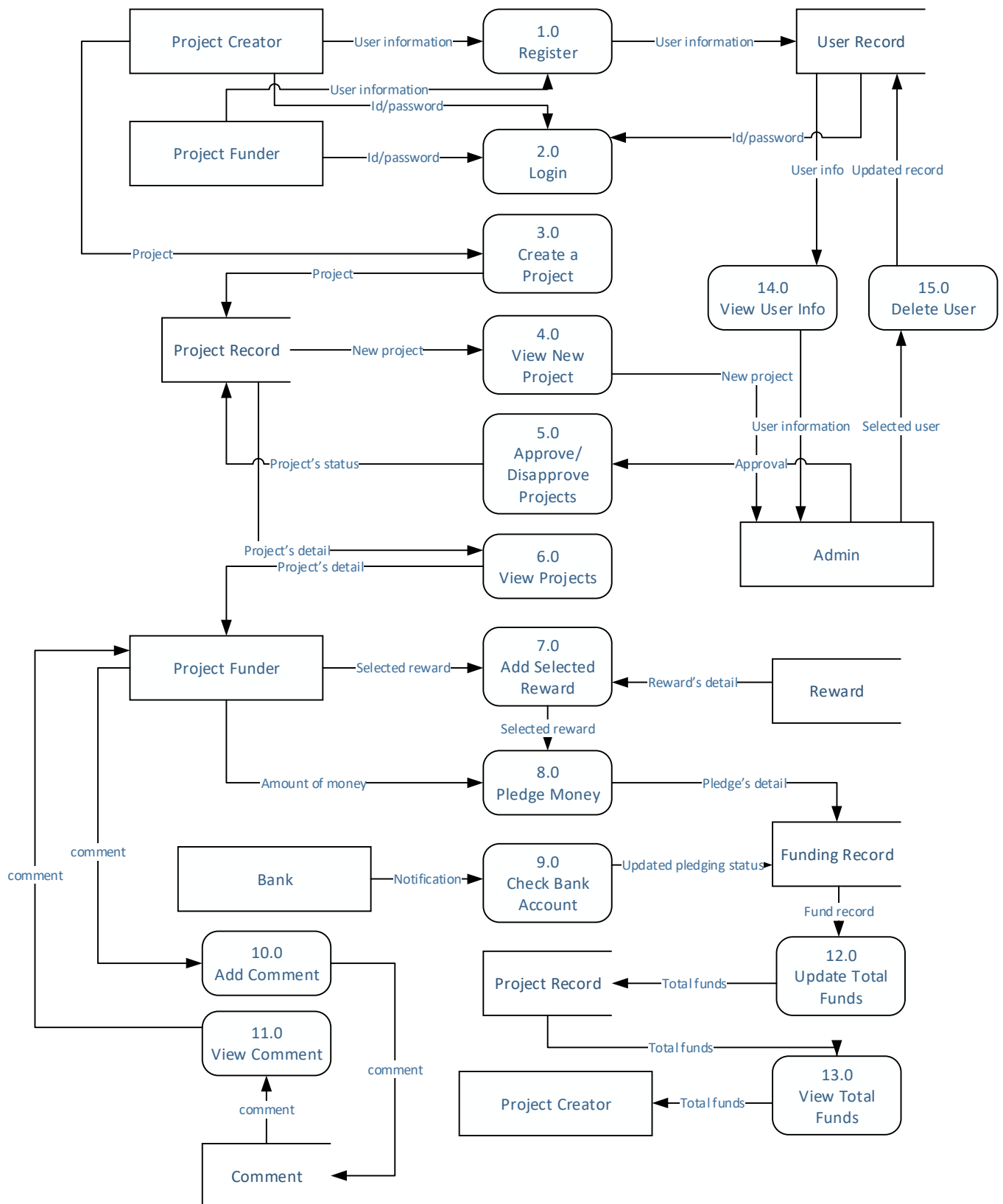


Figure 4: Data Flow Diagram of Crowdfunding System

Process's Explanations

Process 1.0 Register

GET user information from user (project creators and funders), and STORE in User Record.

Process 2.0 Login

GET username and password from user, THEN CHECK in User Record. IF login is valid, RETRIEVE user's ID, role, and then store in Session.

Process 3.0 Create a Project

IF create a project is selected, THEN the system GET projects submitted from project creators and STORE in Project Record. The user role will be a project creator.

Process 4.0 View New Project

RETRIEVE new projects from Project Record and DISPLAY to admin so that they can make an approval.

Process 5.0 Approve/Disapprove Project

Admin APPROVE or DISAPPROVE the projects, and the project's status will be UPDATED. IF the status is 'approved', THEN the project is PUBLISHED.

Process 6.0 View Projects

RETRIEVE and DISPLAY projects with approved status from Project Record.

Process 7.0 Add Selected Reward

RETRIEVE reward's details from Reward for each project. Project funders SELECT a reward.

Process 8.0 Pledge Money

Project funders SUBMIT the amount of money they want to give. The system then STORE the details in Funding Record.

Process 9.0 Check Bank Account

IF pledging money is successful, THEN project funders GET notifications from banks about details of the transaction. UPDATE the pledging or funding status in Funding Record.

Process 10.0 Add Comment

When project funders SUBMIT a comment on a project page, the system STORE it in Comment Table.

Process 11.0 View Comment

RETRIEVE comment from Comment Table in order to DISPLAY on the project page.

Process 12.0 Update Total Funds

The system GET new funding amount from Funding Record and UPDATE it to Project Record.

Process 13.0 View Total Funds

RETRIEVE and DISPLAY the total of funding money gained from Project Record on a project page.

Process 14.0 View User Info

GET user information from User Record and DISPLAY all to admin.

Process 13.0 Delete User

Admin DELETE the specific user from User Record, THEN User Record is UPDATED.

User Interface Design

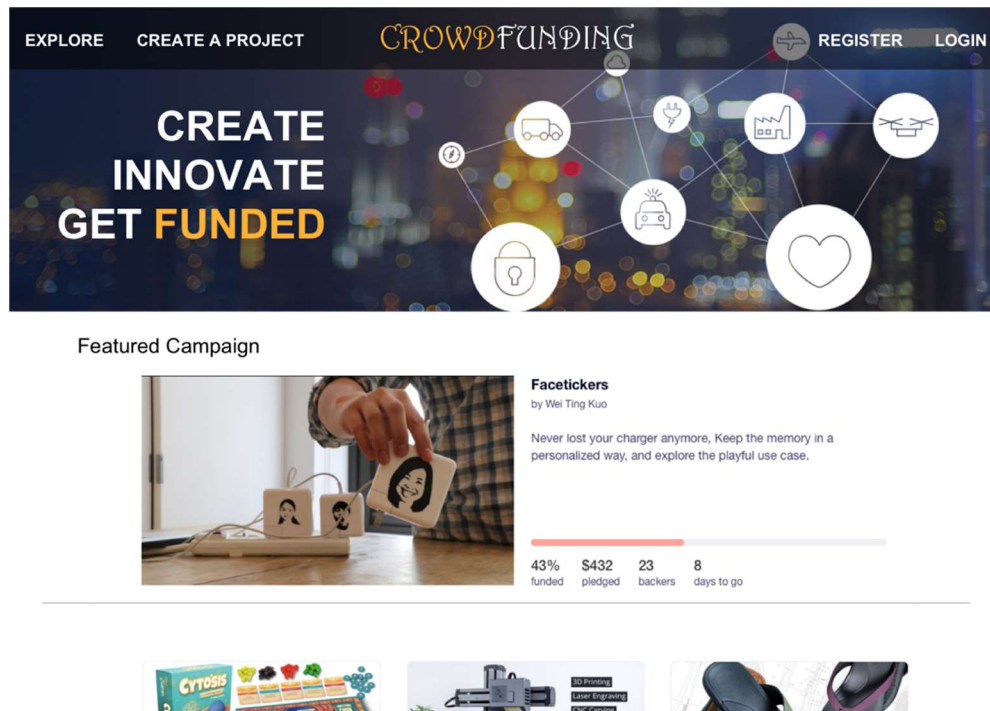


Figure 5: Homepage

This page is our homepage showing the featured campaign selected by admin and other new campaigns. Users can choose menu from the header bar.

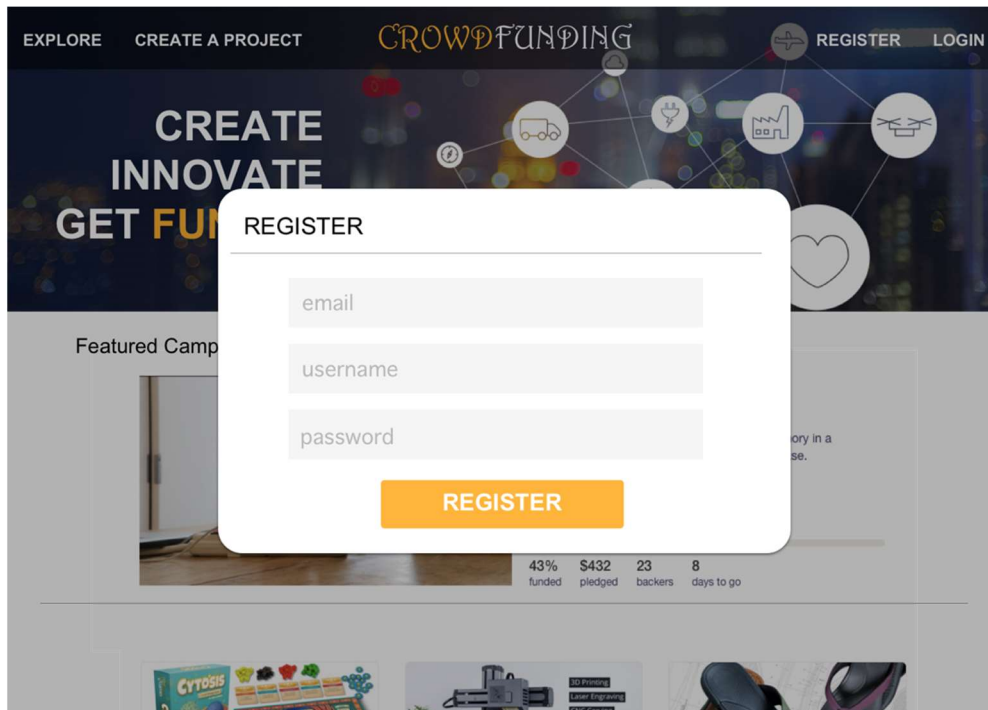


Figure 6: Register Pop-up

Users input their email, username, and password for user registration. There is no name, last name, or address because these can be added later when logging in.

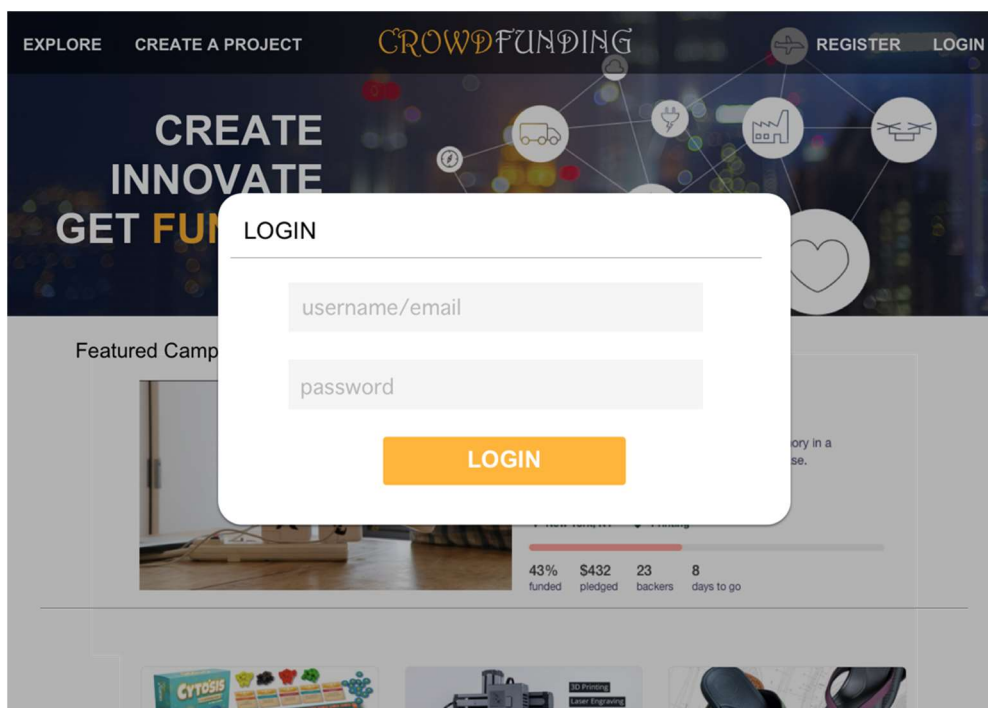
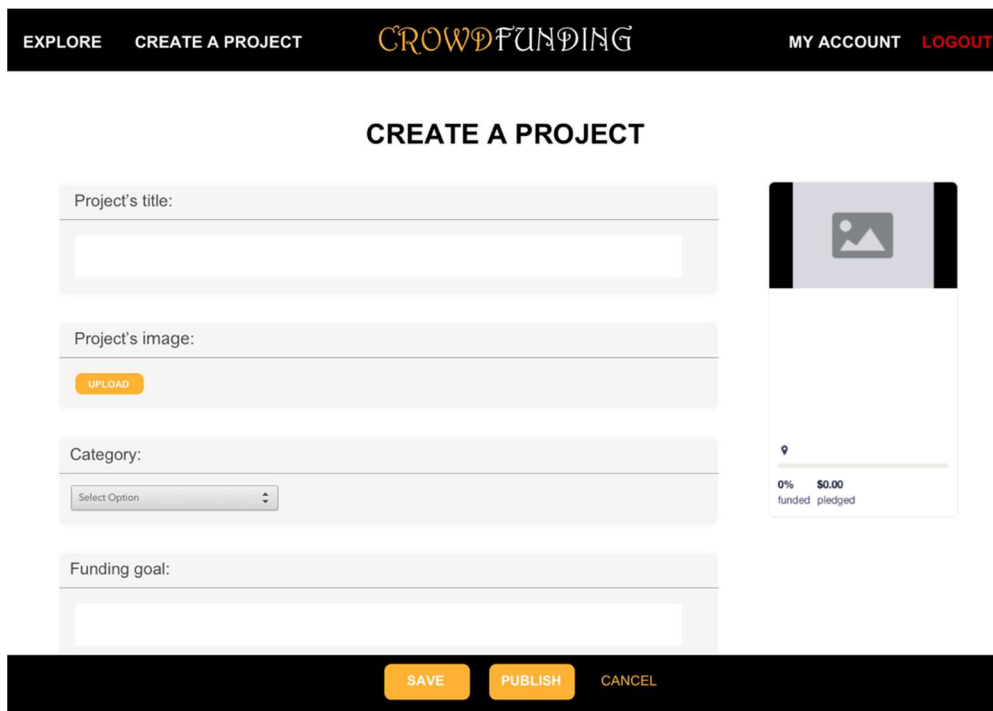


Figure 7: Login Pop-up

This login pop-up will be triggered when users select both register or create a project without logging in. Users input their registered username or email and password in the fields, they will be checked in the database whether they are matched or not as well as their role.



The screenshot displays the 'CREATE A PROJECT' page on a crowdfunding platform. At the top, a black navigation bar contains the links 'EXPLORE', 'CREATE A PROJECT', the 'CROWDFUNDING' logo, 'MY ACCOUNT', and 'LOGOUT'. The main heading 'CREATE A PROJECT' is centered below the navigation bar. The form consists of several input fields: 'Project's title:', 'Project's image:', 'Category:', and 'Funding goal:'. The 'Project's image:' field includes an 'UPLOAD' button. The 'Category:' field features a dropdown menu with 'Select Option' as the current selection. To the right of the form, there is a preview area showing a placeholder image and a progress bar indicating '0% funded' and '\$0.00 pledged'. At the bottom of the form, a black bar contains three buttons: 'SAVE', 'PUBLISH', and 'CANCEL'.

Figure 8: Create a Project Page

This page shows a project submission form. When users (or creators) fill in all the fields and submit the project, it will be sent to admin as a pending project (See Figure 15) waiting for approval.

OUR PROJECTS

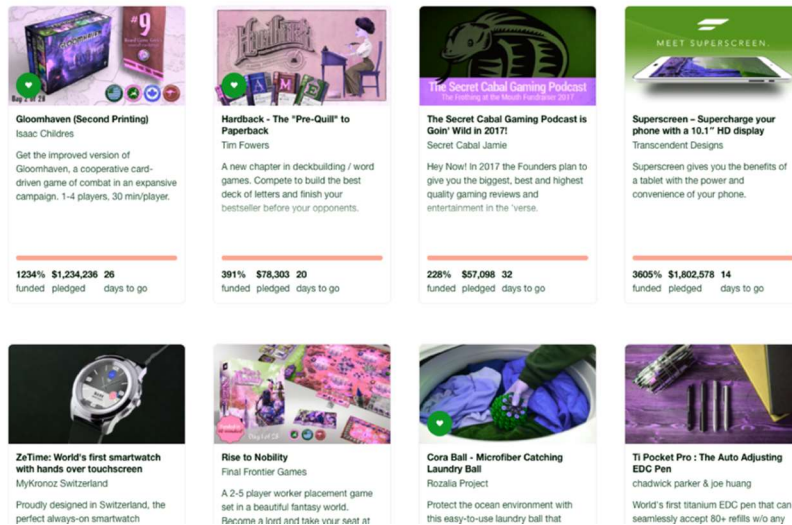


Figure 9: All Projects Page

All projects are shown on this page. By clicking on a project card, it will redirect to that particular project page.

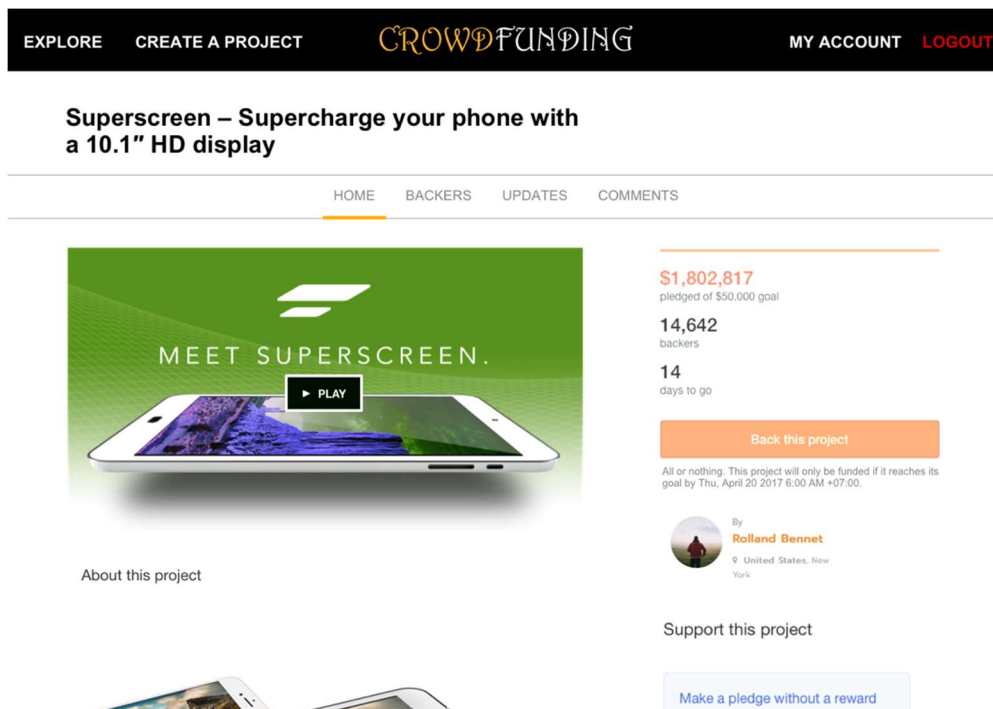


Figure 10: Project Page (1)

This is a main page of the project that shows the project video and its description in details with a sidebar of total funded amount, number of backers, days left, and rewards.

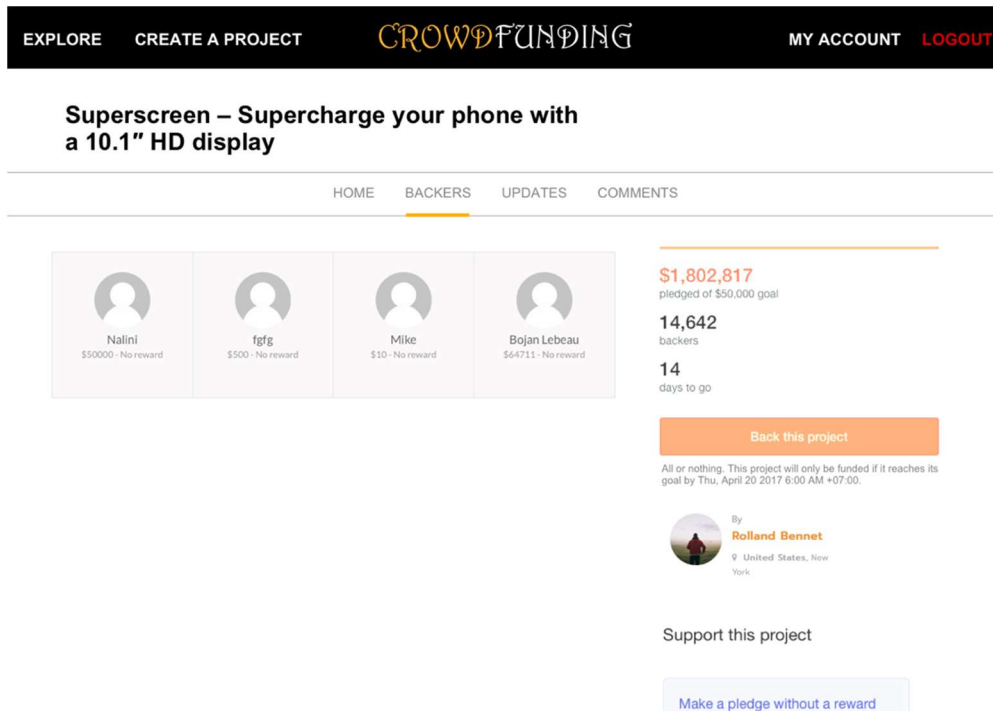


Figure 11: Project Page (2)

The backers list with their pledge amount will be shown if users select backers tab.

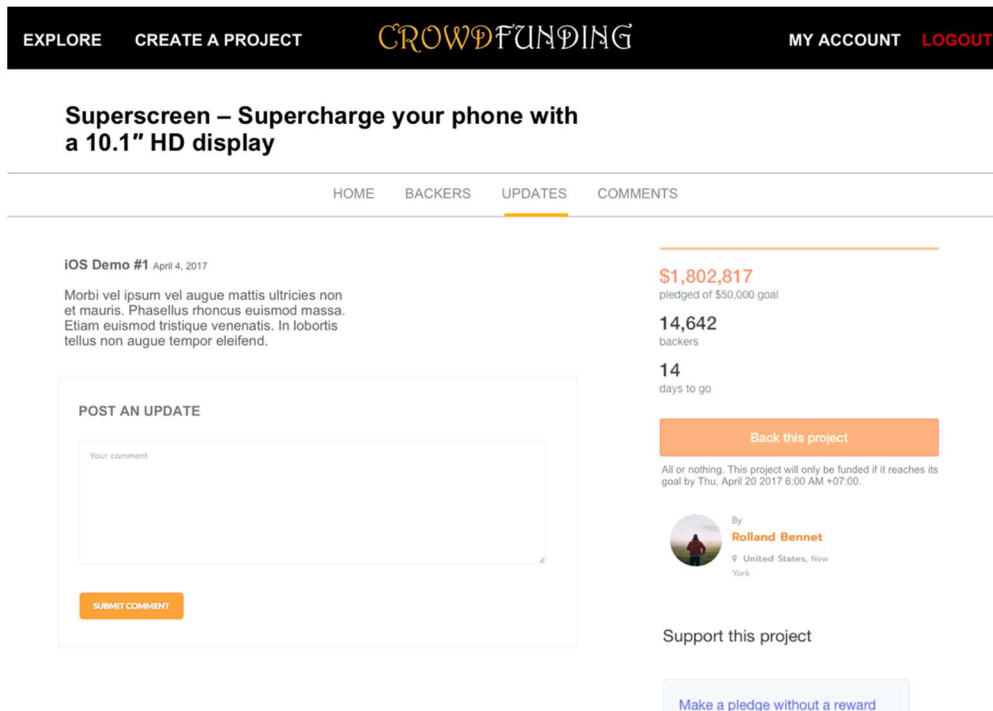


Figure 12: Project Page (3)

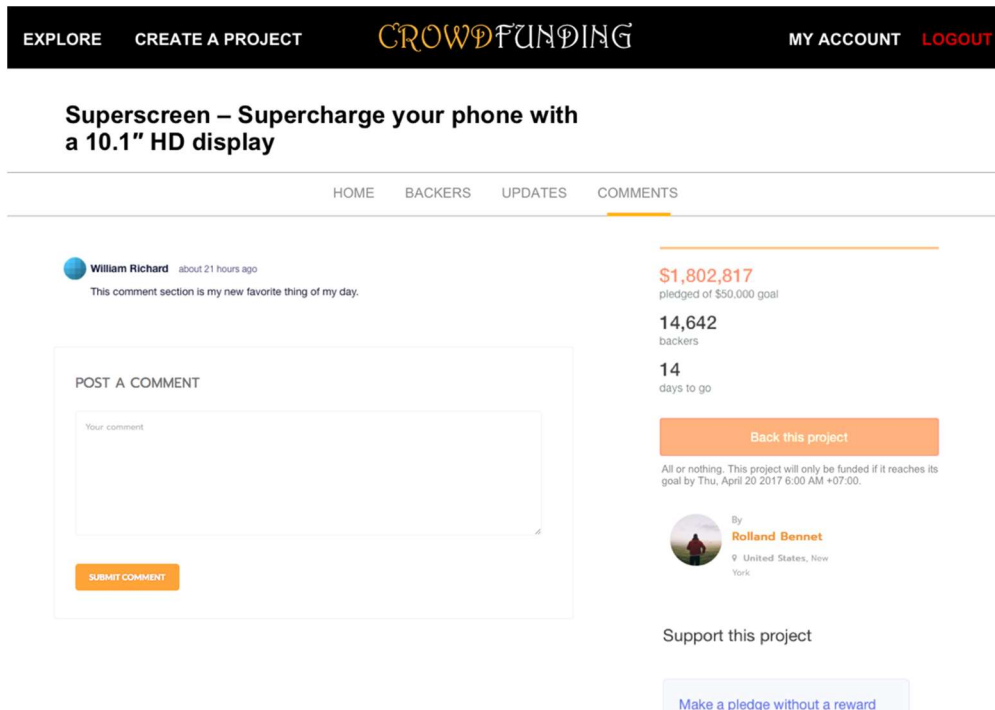


Figure 13: Project Page (4)

‘UPDATES’ tab allows the project creators to post an updated progress of their projects while ‘COMMENTS’ allows funders to give a feedback to creators directly.

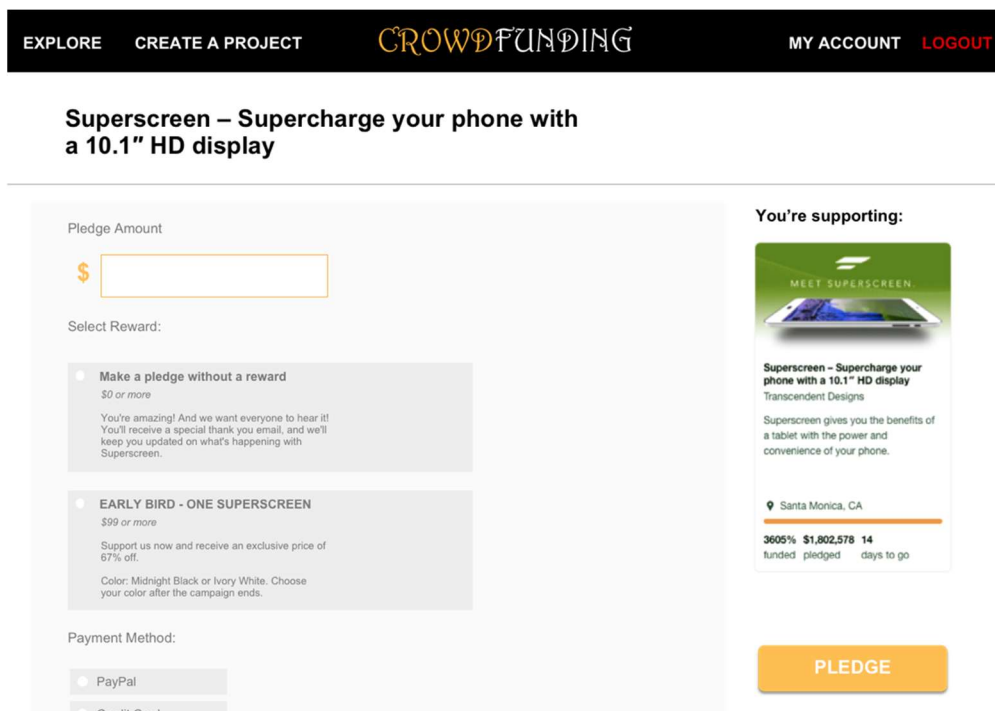


Figure 14: Funding Page

After clicking 'Back the project' button on a project page, this funding page will be redirected. Funders have to fill in their pledge amount and select a payment method. If they select a reward, it will be checked whether theirs have reached the minimum amount of that reward or not. When 'PLEDGE' is clicked, the website will navigate to the particular payment website (See Figure 14).

Figure 15: Payment

Admin

When a user is logged in as admin, the admin bar will appear below the header bar with additional menus.

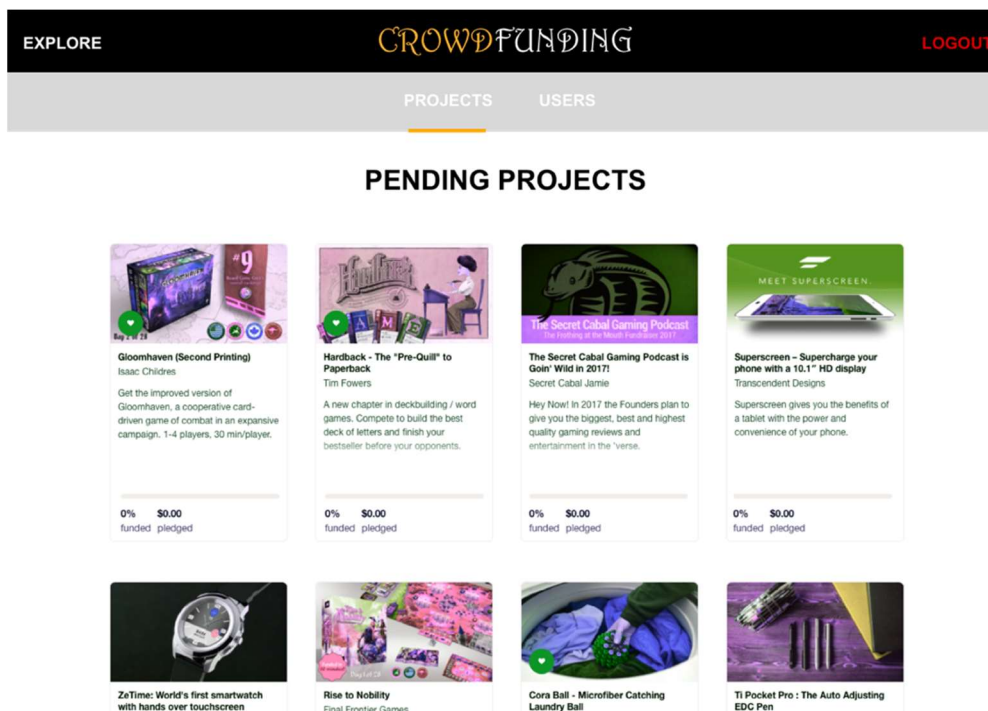


Figure 16: Pending Projects Page (1)

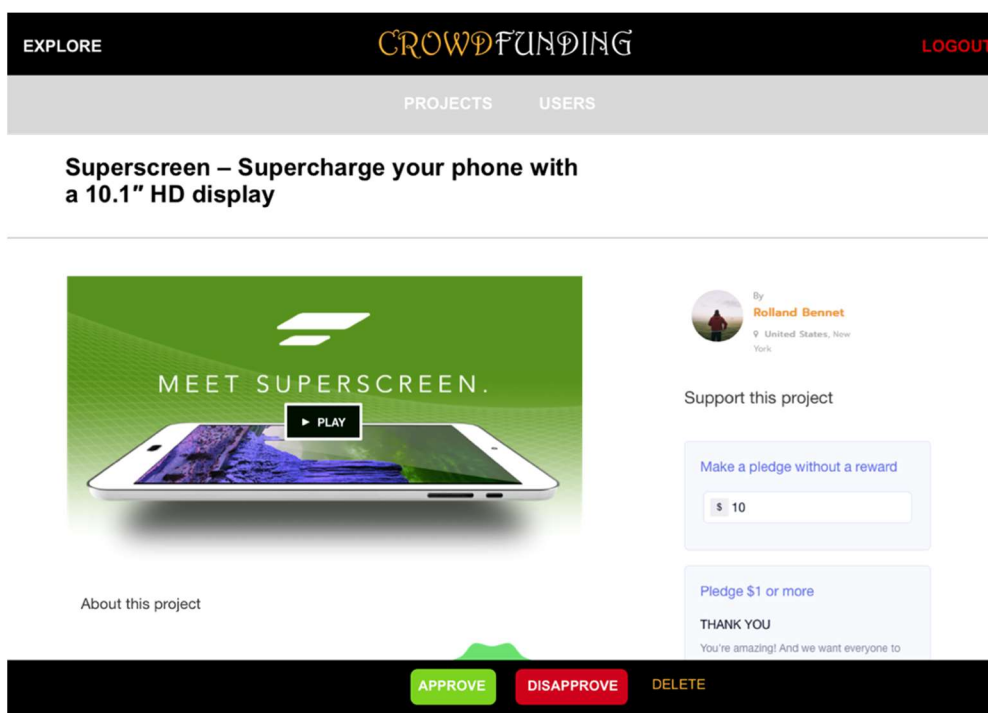


Figure 17: Pending Projects Page (2)

All these projects are pending projects that project creators have published waiting for admin approval. Admin can view each project as if it has been published before making a decision. Then the project status will be updated.

PROJECTSUSERS

USERS

USERNAME	NAME	EMAIL		
john007	John Doe	jd12@gmail.com	DETAIL	DELETE
jane101	Jane Smith	janej@outlook.com	DETAIL	DELETE
qwerty	James Bold	qwer@gmail.com	DETAIL	DELETE
somrak	Sam Son	ssos@hotmail.com	DETAIL	DELETE

Figure 18: Users Management Page

All users' information will be shown in 'USERS' tab. Admin can select either seeing each in details or just simply delete that user permanently.