



# LITAB

A life time financial assist application

## Member

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## Project Name

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Litab is for life tab, meaning it is a financial tally book and hope users will use this application as long as possible.

**GitHub:** <https://github.com/s3665803/excited-bird>

**Trello:** <https://trello.com/b/HchjnuLb/tr-excited-birds>

## Team Member

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Bowen Zhang 3617571

**Background & Passion** - Basic coding skills and passionate about games and Artificial Intelligence.

**Skill & Interest** - Good at Coding, Learning and organizing and interested in all sorts of games and AI or advanced technologies.

**Weakness** – I'm not good at English writing.

**Role** – Organiser & programmer

Cheng Chen s3728207

**Background & Passion** - Had basic coding experience with VS, Pascal, Python and Java. Strong interest in building a software.

**Skill & Interest** - Enthusiast of hardware and game building, Good at organising. Interested in coding and function developing.

**Weakness** - Weak at visual design.

**Role** - Mainly working on software structures and feature design.

Bowen Yang s3665803

**Background & Passion** - I have basic experience with Java programming language and program interface design.

**Skill & Interest** - Better at text editing than coding, but I am working hard to learn programming and are interested in the IT words.

**Weakness** - Probably the coding skills need to improve.

**Role** - I expect to become a competent team member that be able to do a good job of assigning tasks and be able to present their own views on the project.

Zongming Liu s3713771

**Background & Passion** - I know some basic coding skills and static web layout coding skills.

**Skill & Interest** - I am good at designing the website

**Weakness** - weak at coding

**Role** - design the UI and interface of the app

Lei Guo s3516439

**Background & Passion** - I have basic coding skills in Java, .net and web programming.

**Skill & Interest** - Good at teamwork and interesting in computer games and travelling

**Weakness** - Weak at English

**Role** - Good team member

Zheshun Shi s3696260

**Background & Passion** - basic Java and web programming skills.

**Skill & Interest** - interested in VR.

**Weakness** - weak at English grammar and oral speaking.

**Role** - perfect teammate.

## Project Description

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Our team is building a mobile application called Litab which is a combination of Tally book and Reminder. The main purpose of this application is to keep track on personal expense and to remind user what's coming next and what they want to buy or do in the future. Users can plan their future expense based on their monthly average spending and income and users can categorize their expense for better management. The application will also tell the user if their plan have fulfilled or short by how much as well, remind them if they need to cut their budget or create extra income to achieve their goal. Finally, this app will feature all the basic function a tally book has such as list all consumption, categories and a clean and friendly interface.

## Motivation

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People always plan what they want to buy or figure out what they did with their money for management purpose, once in the past, I wanted to find out how much I spent weekly to see how much money will left for me at the end of the month to buy something I wanted, it was so inconvenience that I have to remember everything I paid because if I miss one or two things, the result may not as good as I thought.so, I think an application should be able to keep track my consumption and do some calculation for me to remind me how much money left at the end of the month or how long it takes for the thing I want or the event I need to pay to be affordable based on current consumption routine and income.

The other reason I think this app is valuable is everything in the current generation needs to be paid and higher life standard we all desire requires personal financial management which we should supposed to do some of it on our own instead of hiring a financial manager to do all of them. and, this application seems appropriate for our current level of skills.

# Demonstrable Outcomes

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## Minimum Viable Features

1. Record income and outcome. Put them into categories for better organization.

**Validation:** Input some income and outcome data and select the pre-coded categories. If the data are correctly recorded, this function is working properly. Input a value but do not select any of the categories. If the app prompts for a valid category, we can make sure that every data is recorded into the correct category.

2. Set categories as well as labels to justify different spending. See how you spend money and develop better spending habits.

**Validation:** Input some name in the category creation menu. If the category shows up on the spending input page, this function is working properly.

3. Set budget for each week, month etc. or custom period. This is to help prevent overspending and better organize money.

**Validation:** Set different budget and record some data to perform overspend. If the app shows an alarm when the current spending value exceeds the budget set, this function is working properly.

4. Money box: Set something that you want to save to buy. Set a time target and see how much you need to save every week.

**Validation:** Set a target in money box with preferred purchase date. If the app correctly shows the amount of money needed to be saved each week, this function is working properly.

5. Notes and reminders: Take notes on what to buy or what to do. Set reminders and alarms for important events and important stuff to buy. Prevent forgetting important things.

**Validation:** Set some notes and reminders. If the notes are correctly displayed, the notes function is working properly. If the alarm goes off at the desired time, the reminder function is working properly.

6. Option to create an account and login for online synchronization. (Future planned)

**Validation:** Input a valid username and password. If successfully logged in, it is working properly. Input an invalid username or password. If the login failed, the login function is fully working.

## Extended Features

1. Set SMS templates to automatically recognize text messages from the bank and record spending without manually input every time.

**Validation:** Set a template and test with some text messages corresponding to the template. If the app recognizes the text message and records the correct value in the text, this function is working properly.

2. Lists and sub-lists for notes and reminders. Organize notes of different categories to help searching if there is many.

**Validation:** Set different lists and sub-lists. If all notes and reminders are correctly distributed to their category, this function is working properly.

3. Set a note to favorite and set priority for different notes and reminders.

**Validation:** Favorite some notes and set some reminders to high priority. If the favorite and high priority notes and reminders are displayed on top, this function is working properly.

4. Financial plans: plan your income, outcome, debts and credits for the whole year in advance.

**Validation:** Set a plan for the year. If the predicted spending graph and suggestions are displayed, this function is working properly.

5. Set templates for recurring cost. e.g. water and electricity bills, Internet and SIM plan bills. Remind you to make sure that the account has enough money for the automatic payment and automatically record the bills.

**Validation:** Set up a recurring phone bill. If the reminder goes off at the correct date and the cost is recorded, this function is working properly.

# Project Justification

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## Justified Workload (For everyone)

### Week 2

We spend 3 hours to discuss and share project ideas and then decide the project. Then spend 2 hours to search information about this project.

### Week 3

We spend 2 hours to discuss the project, such as motivation, tools and features, then assign individual task. Everyone spends 3 hours to search related information and complete individual task.

### Week 4

Spend 5 hours to check and discuss individual task, then develop individual task.

### Week 5

Spend 2 hours to search information about target users and design UI. Spend 3 hours to design the prototyping and framework.

### Week 6- week 8

Assign individual programming task. Spend at least 5 hours per week to search information and learn programming skills to implement the function of application.

### Week 9

Spend 5 hours to test and debug the application and then publish the application on the APP Store.

## Beyond Current Capabilities

All our team members have basic programming skills and passion for IT. We have learned the basic of Java programming language, therefore we can build this application by Java, all of us are programmer for this project, we can work together to build this application. Furthermore, we have learned a course on



design, we can make the UI of this application friendly and useful. We will try our best to make a good application. Because our group will develop this program on the iOS platform, we will learn how to code on XCode. In addition, we will learn more programming skills to develop this application. Honestly, it is very difficult for us to complete this application because it beyond our knowledge and capabilities, but we will try our best to develop this application.

## Project Risk

1. **Risk:** interaction logic confusion

**Example:** the user may not know how to use the app with the useful function

**Mitigation:** when the user first using the app, we will give the user a introduction video or dynamic guide which can help the user to familiar with the app faster.

2. **Risk:** Security is a big problem for the app

**Example:** The app probably needs users input their personal information and it might leak or our App are easily crackable due to us lacing of App experiences and technic.

**Mitigation:** The team will keep learning the code skill. If we meet some code problems, we will use the internet or asking the teacher to solve them.

3. **Risk:** There will be the same type of products on the market.

**Example:** In the app market, like apple store or google play store, there are many apps which may as same as one of our app's functions.

**Mitigation:** We try to broaden the applicability and practicality of the app. We will find an app style to attract the users. We also will keep developing the app with updating to give the app more useful functions.

4. **Risk:** The target users are blurry.

**Example:** The target users may not be our users and we might need to do some huge adjustment after we finished.

**Mitigation:** Although it will cause huge amount of extra work. Like changing design, interface, core function. Our target users are very huge from 12 to 70. There is a huge age gap in it. We try to make the app easy to operate and set up.

# Resources and tools

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## 1. XCode

### a. Short description

XCode is an integrated development environment (IDE) provided by Apple to developers for the development of MacOS, iOS, WatchOS and tvOS applications.

### b. Rationale

Because our group will develop a program on the iOS platform. XCode has a unified user interface design, coding, and testing that is the fastest way to develop OS X and iOS applications. Support multi-language programming programs C, C++, Objective-C or Java programming and it can publish the program directly to the App Store. Therefore, the XCode is the most suitable IDE for our program.

### c. Specific version

XCode 9.4.1 For free.

### d. Alternative plan

Eclipse

<https://www.eclipse.org/>

## 2. proto.io

### a. Short description

Proto.io is a dedicated mobile phone prototyping platform that can build and deploy prototypes of fully interactive mobile applications and simulate similar finished products.

### b. Rationale

It's convenient for quickly creating an interface because it has a rich set of standard UI elements, and many of them are customizable. In addition, it can

be many screens in a project, and transitions can be made between these screens.

c. Specific version

Proto.io 6    Free for 15 days.

d. Alternative plan

Invision

<https://www.invisionapp.com/>

## Collaborative Workspaces

1. google doc

<https://drive.google.com/drive/u/0/folders/1CsO1w9nZACLbIzIfCf-IPmvl-VHngsY->

Google doc is the tool our team uses to write reports. Controlled by our tutor and given the permission of our team members to edit.

2. GitHub

<https://github.com/s3665803/excited-bird>

GitHub is controlled by our team member Bowen Yang and gives us team members permission to edit.

3. Trello

<https://trello.com/b/HchjnuLb/tr-excited-birds>

Trello is controlled by our tutor and given the permission of our team members to edit, which can show the progress of our assignment.

## Communication Expectations

WeChat

In order to be able to respond in time and propose ideas after class, we create a WeChat group, which it can help our group eliminate misunderstandings and improve efficiency.

Basically, six members of our team use WeChat every day to discuss assignments and to check and correct the completed parts.

We divide the assignment into six equal parts for each member. The connection between each part is powerful despite the fact that each member has their individual parts. Therefore, in order to guarantee the quality of the assignment, we need to report on the task. We report three sections in the WeChat group every day, which is completed tasks, remaining tasks, and scheduled tasks.

Every member of our team is essential and contributes to the overall efficiency of the team. The absence of team members, whether planned or not, will affect the efficiency of the team. First of all, if the absence is foreseen in advance, then the leader will assign the task to everyone, and the absent member will complete it at other times and use WeChat to report the completion to other members. Besides, if there is an unexpected absence and the impact is greater, the leader will assign the absentee task to other members who have the ability to complete.

## Decision-making Processes

We use brainstorming methods to make decisions. First, all team members are free to comment. In addition, we will post the idea to give other members a reference, which will allow everyone to be inspired and combine ideas with other people's opinions. In addition, our team members are treated on an equal footing. Finally, it is not allowed to evaluate the quality of an idea during the idea collection phase, and not to refute the opinions of others.

Once the team has different opinions and needs to be resolved, we will first put aside the dispute on the disagreement, refine and execute the same point, and then automatically select the direction of the divergence point through more and more new data and new results.

# Timetable

Complete Assigned Report Tasks	Planned Start	Planned Due	Lead by	Achieve
Week 3				
<a href="https://trello.com/c/WaQMgzHB/42-assignment-1-project-description">https://trello.com/c/WaQMgzHB/42-assignment-1-project-description</a>	[29/07]	[05/08]	Bowen	Achieve
<a href="https://trello.com/c/cjgyUNE9/37-assignment-1-risks">https://trello.com/c/cjgyUNE9/37-assignment-1-risks</a>	[29/07]	[05/08]	Hank	Achieve
<a href="https://trello.com/c/d3DqVVXa/36-assignment-1-justification">https://trello.com/c/d3DqVVXa/36-assignment-1-justification</a>	[29/07]	[05/08]	Lei Guo	Achieve
<a href="https://trello.com/c/h3c0zMJC/43-assignment-1-timetable">https://trello.com/c/h3c0zMJC/43-assignment-1-timetable</a>	[29/07]	[05/08]	Zheshun SHI	Achieve
<a href="https://trello.com/c/juBPF55A/40-assignment-1-demonstrable-outcomes">https://trello.com/c/juBPF55A/40-assignment-1-demonstrable-outcomes</a>	[29/07]	[05/08]	Cheng chen	Achieve
<a href="https://trello.com/c/LKhBr2FV/38-assignment-1-resources-tools">https://trello.com/c/LKhBr2FV/38-assignment-1-resources-tools</a>	[29/07]	[05/08]	Bowen Yang	Achieve

Assignment 1 Report	Planned Start	Planned Due	Lead by	Achieve
Week 4				
[ <a href="https://trello.com/c/NWSYPNR4/44-formatting">https://trello.com/c/NWSYPNR4/44-formatting</a> ]	[05/08]	[12/08]	Bowen	Achieve
[ <a href="https://trello.com/c/VYuHtjMw/45-assignment-1-report">https://trello.com/c/VYuHtjMw/45-assignment-1-report</a> ]	[05/08]	[12/08]	Bowen	Achieve

[https://trello.com/c/127jjum4/7-week-4-check-formating]	[05/08]	[12/08]		Achieve
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User Centre Design discussion and prepare	Planned Start	Planned Due	Lead by	Achieve
Week 5				
https://trello.com/c/57aE7bCb/8-week-5	[12/08]	[19/08]		
	[12/08]	[19/08]		
	[12/08]	[19/08]		

Design Prototype	Planned Start	Planned Due	Lead by	Achieve
Week 6				
https://trello.com/c/P3jenmuy/9-week-6	[19/08]	[26/08]		
	[19/08]	[26/08]		
	[19/08]	[26/08]		

Programming discussion and research	Planned Start	Planned Due	Lead by	Achieve
Week 7				
https://trello.com/c/cUlpqeUe/10-week-7	[26/08]	[02/09]		
	[26/08]	[02/09]		

	[26/08]	[02/09]		
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Programming tasks	Planned Start	Planned Due	Lead by	Achieve
Week 8				
<a href="https://trello.com/c/2Nlrvk4x/11-week-8">https://trello.com/c/2Nlrvk4x/11-week-8</a>	[02/09]	[09/09]		
	[02/09]	[09/09]		
	[02/09]	[09/09]		

Programming tasks	Planned Start	Planned Due	Lead by	Achieve
Week 9				
<a href="https://trello.com/c/lksPOM8m/12-week-9">https://trello.com/c/lksPOM8m/12-week-9</a>	[09/09]	[16/09]		
	[09/09]	[16/09]		
	[09/09]	[16/09]		

Programming Tasks	Planned Start	Planned Due	Lead by	Achieve
Week 10				
<a href="https://trello.com/c/RARhkYhc/13-week-10">https://trello.com/c/RARhkYhc/13-week-10</a>	[16/09]	[23/09]		
	[16/09]	[23/09]		
	[16/09]	[23/09]		



Debug and Test	Planned Start	Planned Due	Lead by	Achieve
Week 11				
<a href="https://trello.com/c/wOWkeG4C/14-week-11">https://trello.com/c/wOWkeG4C/14-week-11</a>	[23/09]	[30/09]		
	[02/09]	[30/09]		
	[02/09]	[30/09]		

Final Testing	Planned Start	Planned Due	Lead by	Achieve
Week 12				
<a href="https://trello.com/c/tiGyrH3P/15-week-12">https://trello.com/c/tiGyrH3P/15-week-12</a>	[30/09]	[07/10]		
	[30/09]	[07/10]		
	[30/09]	[07/10]		