

LUT University

School of Engineering Science

“Software Engineering” OR “Software and Systems Engineering” Degree Program

PUBLIC LTKY BUDGETING

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METADATA

| Member | Step | Description | Hours |
|-----------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Ajay Sah | UNDERSTAND | <ul style="list-style-type: none">- Work on user research and usability survey- Provide background details to the development phase | 3 |
| Avaneep Kamal | DESIGN | <ul style="list-style-type: none">- Design the application prototype- Modify the prototypes according to feedbacks | 5 |
| Joy Adelegan | EVALUATE | <ul style="list-style-type: none">- Evaluate other teams' prototypes- Analyse feedbacks and inform necessary changes | 3 |
| MJ Moshiri | PRODUCE | <ul style="list-style-type: none">- Develop the Flutter application- Modify and maintain the app | 5 |
| Trieu Huynh Ba Nguyen | PLAN | <ul style="list-style-type: none">- Research the current state of LTKY voting- Present the possible plan of the project- General management duties | 3 |

1 PLAN

- Define the problem:

- Project motivation/context:

Electronic voting refers to the type of voting that employs electronic means such as the Internet to operate the process of casting and counting votes. Electronic voting has many advantages over traditional voting, thanks to its emphasis on faster speed, lower costs, and accessibility.

LTKY is the student union of LUT University with more than 8000 students as members. The need for an Internet-based application dedicated to opinion polling, public voting, and especially how LTKY funding should be allocated, has increased. The ability to gather different perspectives from its members will enable LTKY to improve its activities and transparency - meeting the demands and desire of different students. Moreover, should LTKY board unable to come up with a solution, the application will create a balanced compromise that satisfies the wishes of the majority of the members.

- Project goal:

The goal of the project is to create an application that handles online polling, in which registered members of LTKY could vote on different topics – the biggest emphasis remains the distribution of LKTY funding. The application should have some basic security features to prevent non-members from interfering with the process, a platform to list all existing agendas to be voted on, a list for results of recent polling, and a message section to propose new topics.

- Product research

- Benchmark of existing solutions

As of now, polling and voting of almost all major LTKY agendas are through the traditional paper ballot method. This technique could take days to go through all the process of announcing, voting, and counting. Several members have raised their concern regarding the impracticality of this type of voting when too many votes are to be casted, given the fact that the number of students at LUT might grow significantly during the next few years. On top of that, the pandemic situation might prolong and make traditional voting a safety risk for certain students. Compared to this method, electronic voting is superior: faster, safer and more accessible.

- User research

- Define user groups

User groups are structured interviews/surveys that disclose the aspirations, experiences, and attitudes of a target audience rapidly and affordably. It is a good method to get a lot of information about the potential users in a short amount of time (Veal, 2021). For the project, a survey was

designed and sent to the LUT students to get their responses on the application. Since our application was meant only for the LUT students, the research process was done efficiently and reliably.

- Design a user survey/interview to understand
 - Interview/Survey goal
 - Target group
 - Length

The survey contains a total of nine (9) questions: seven (7) multiple-choice questions, one (1) rating scale question, one (1) text-answer question. The survey collects users' opinions on how they think of an application that allows members of LTKY to vote on different agendas, especially the distribution of LTKY funding.

The design of the survey could be found at Appendix 1.

2 UNDERSTAND

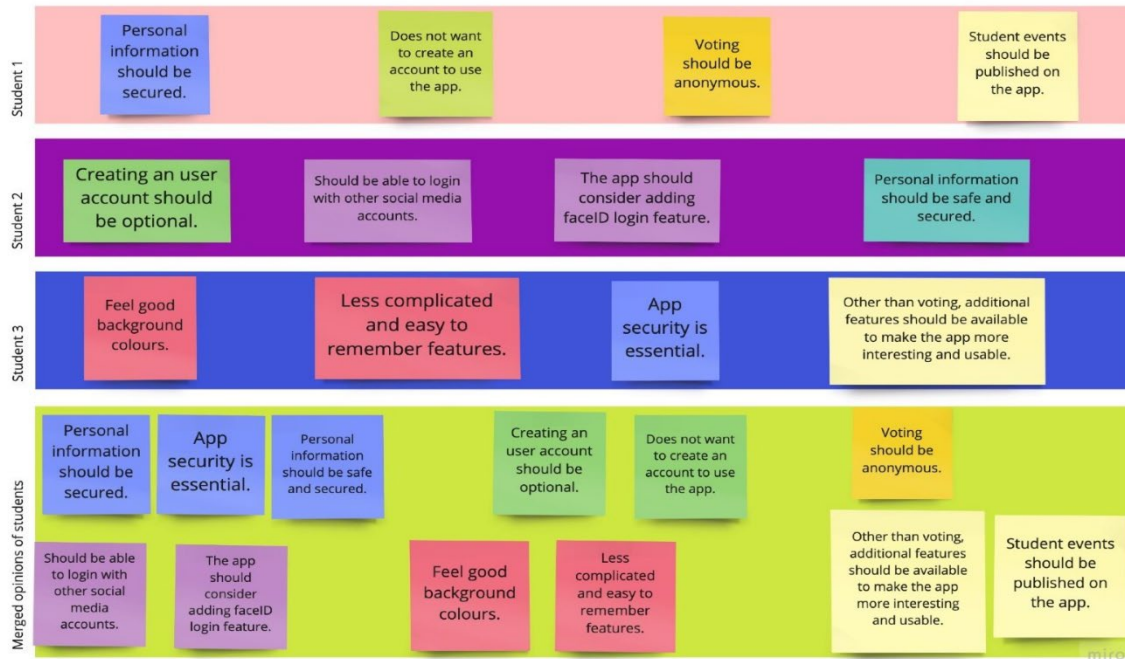
- Conceptualize the real context of use of current solutions:

The application will allow students to accomplish the task of allocating student union budget for better purposes. Students should also be able to vote for the preferable type of events that LTKY would arrange. Students would be able to use the application from anywhere and the physical surrounding does not affect the usability. Users can create profiles and other users can view their profiles which will allow students to interact and socialize with each other. The application should work on mobile devices with iOS or Android and users need internet connection to access the application.

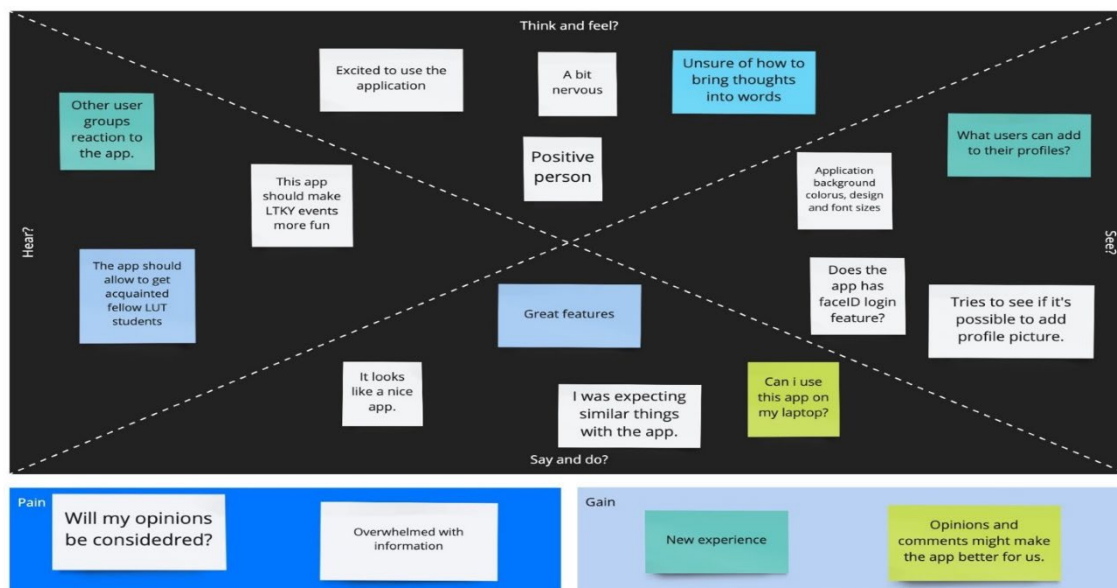
- User research findings:

The survey was conducted successfully, and it was gratifying to see many students answering the survey. There were many positive responses and students felt that the application would help them get involved in the LTKY events. There were 45% of students with responses of not creating a user account to use the application whereas 55% of students would happily create an account to use the application. Most students preferred mobile application compared to websites. There were comments shared by the students like the application should allow users to create a profile and other users should be able to view their profile. This was ideated by the fact that this feature would allow them to find students from their own background, demographics and in addition, it would also force users to create a profile. Moreover, other opinions like publishing events on the app, promoting students offers and discounts through the app were shared by the students.

○ Affinity Map



○ Empathy Map



○ Personas (primary and secondary)

- Primary users: LUT students – Student vote for the allocation of student union funding so that funding is not misused. Students vote for the preferable types of events that LTKY should arrange so that the event is interesting to them.
- Secondary users: LTKY Board Members – Board members publish events on the application so that they do not need to announce in person.

3 DESIGN

3.1 IDEATE

There were 4 conceptual solutions provided in the prototype. The prototype had a news section, a section about the funding plans in the past, a section which displayed how much budget had been already spent, and the main concept, which takes the user's decision to choose whether to accept or reject the current budget plan proposal. The users will first have to login or register their account, and then they can choose between one of these concepts.

When the user accepts or rejects the budget plan, they receive a message to confirm their decision. Then they asked to give their opinion about the budget, after which the decision is saved in the LTKY database, and they are taken back to the main page.

The main page will also have an option button to go to the LUT website, go to the LTKY website, access their own profile, and logout of the service. But it is not the main concept, rather just a part of the solutions. They can click on all of the three options, except for the profile button.

3.2 PROTOTYPE

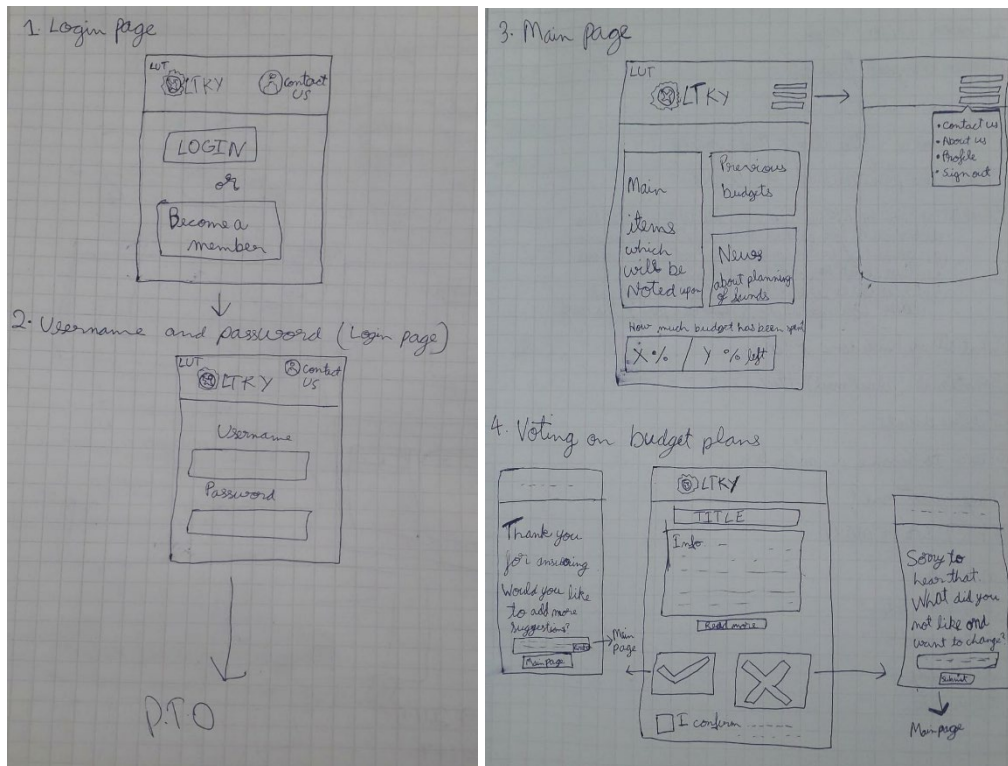
The main colour palette theme used for this prototype is Black, Maroon (dark red) and White. The reason why this colour theme was chosen was because it is also the colour theme of the original LTKY website and logo. Therefore, using this colour palette made the prototype look more authentic and similar to the original LTKY website.

The font type and most of the icons, like the LTKY logo were taken directly from the LTKY website, and the rest were used from the Figma library. Even though this product is not a part of the actual LTKY service, the idea was to make it look like a real LTKY service application as much as possible. The current text in the prototype is filled with Lorem Ipsum, rather than some useful information, because this was only a prototype, and the actual text would be properly written in the flutter program. The design patterns were simple and were only used for some solutions. The main page might look overcrowded to some users at first, but after a couple of seconds it won't seem like a problem anymore when they understand all the information on the main page.

The first design pattern was used for accepting and rejecting the budget plan, where the users would receive a message to confirm their decision if they clicked on any one of these decisions. They would then be able to give their opinion about the budget and then go to the home page. They can also click on the back button on the top left to go back to the home page. The second design pattern was between logging in and logging out of the service. Both patterns were crucial to the service as they help the project to be more user friendly.

The shape of the UI elements was made to be simple and a little rounded for the buttons to differentiate between the buttons and the text boxes, because most of the UI elements have the same colour scheme, so to avoid any confusion between them.

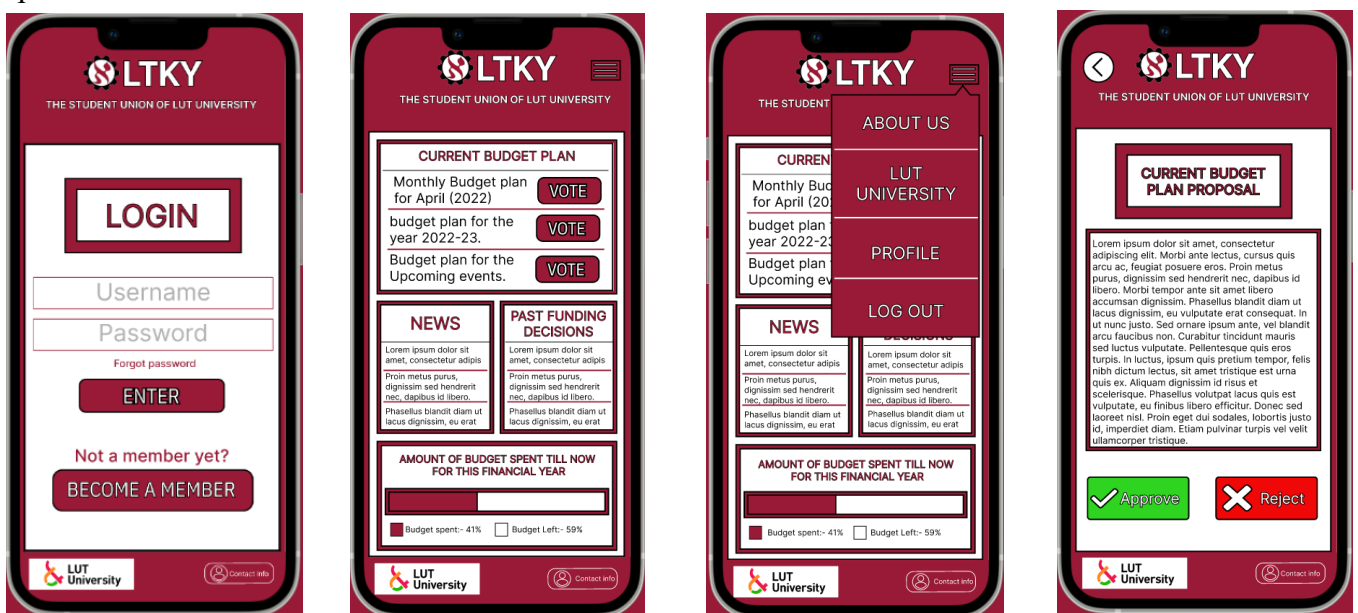
3.2.1 Part A: Paper prototype (hand drawn)

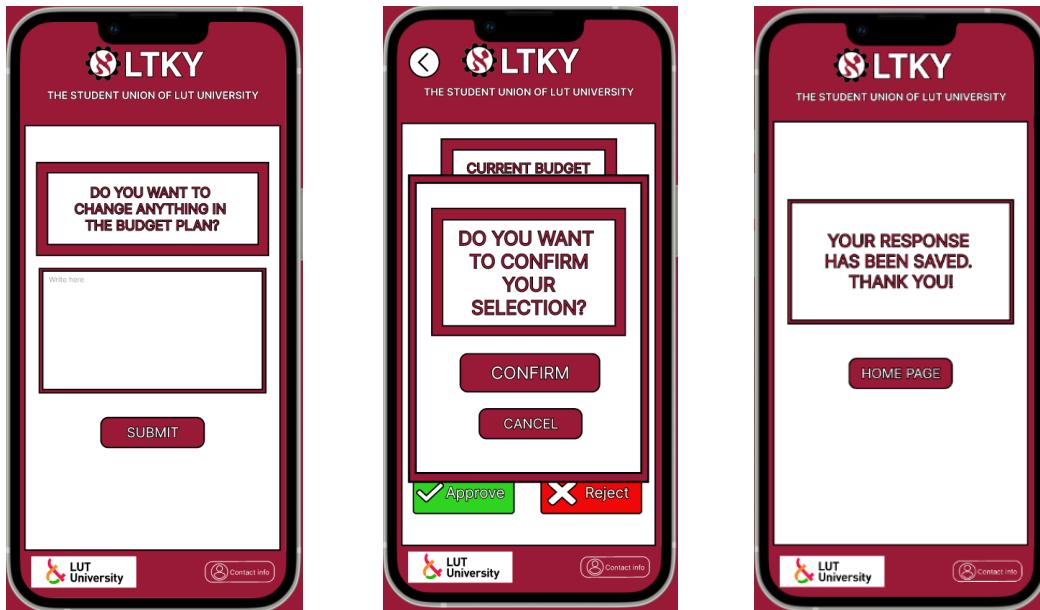


3.2.2 Part B: Digital prototype

Digital prototype: <https://www.figma.com/proto/Fh4gQUcOkkHWciUzeGFom8/LTKY>

BUDGET-PROTOTYPE?node-id=13%3A226&scaling=scale-down&page-id=0%3A1&starting-point-node-id=13%3A226



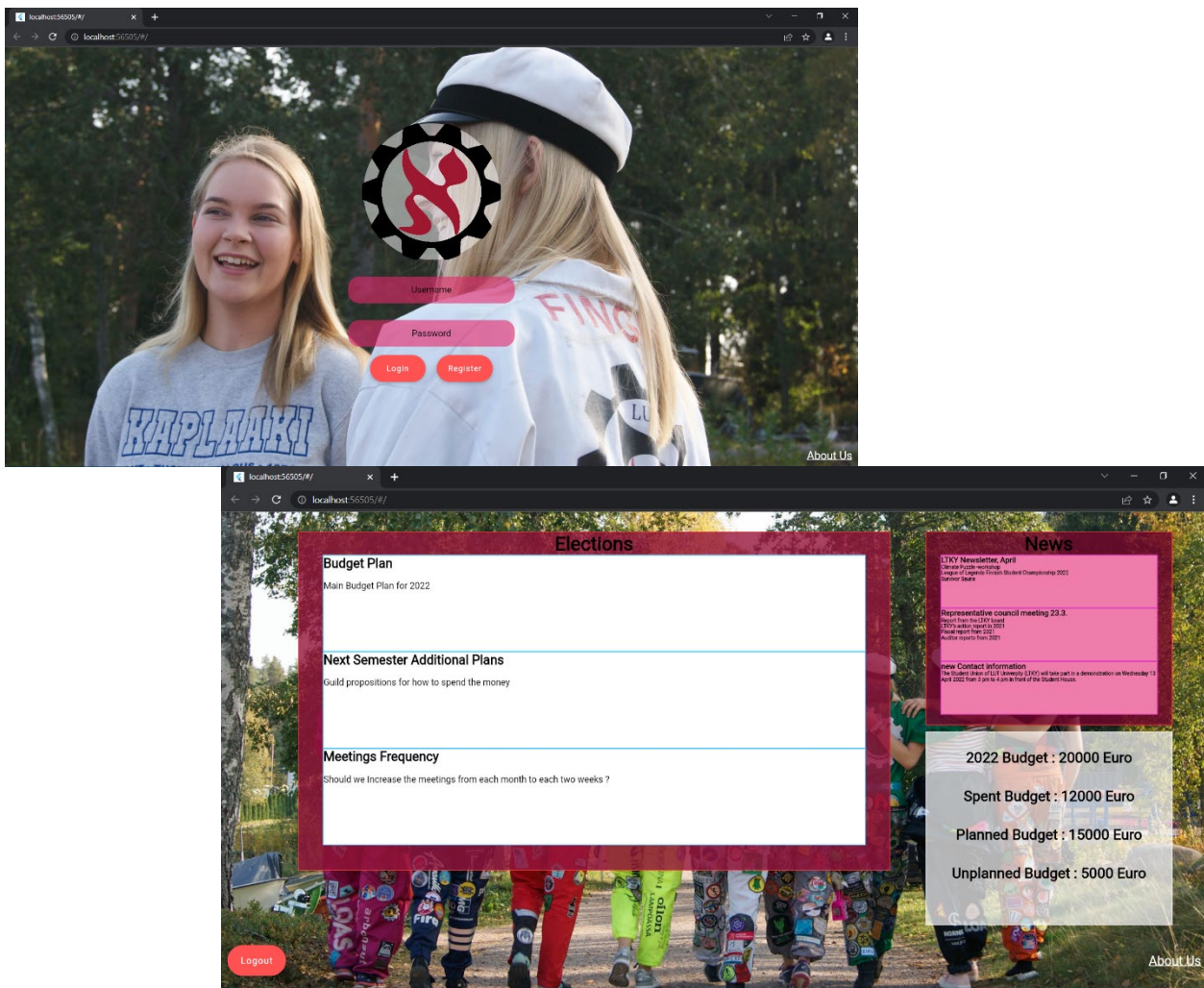


Demo video: <https://flipgrid.com/61ed2966>

4 PRODUCE

The program's purpose is defined and it's a simple election app, so we tried not to overdesign it. Users can log in, vote, see how the budget has been managed already and also could see the news. All of these are components of the app, so the user interface looks a group of elements all coming together. View is responsive in a way that, based on the priority, each section has a share of the screen (it has been applied to the Flutter code somehow). All materials used in the code are standard material.io components. A couple of custom things have also been designed, which tried to be in the same way google materials work. Most of the coloring has been done considering the original LTKY website shade. And for typography google standard font has been used.

You on login page, and then you go to the main page, where you can submit your vote and see the news. The Prototype section has been implemented almost except for the Linear progress line. We decided that it could be over-designing, and the Budget section could be enough. Completed Project would be the main page, followed by limited access pages that the page controller will control. Each page has been split into rows and columns, and each child of them is a container with data (mostly text). Finally, all sizes (including font, width, and height) are managed with respect to the screen size.



5 EVALUATE

The heuristic evaluation is based on all the recommendations given by other groups. Some changes were made, in which the main focus is to simplify the main page, including decreasing the amount of texts used on the page. This was done mostly by shortening the text or making it compact and concise. System Usability Survey is in Appendix 2. Usability survey results.

Heuristic Evaluations from other groups are available in PDF form and are included in the Flutter project zip.

REFERENCES

Veal, R. (2021). *How To Conduct User Experience Research Like A Professional*. CareerFoundry. Available at: <https://careerfoundry.com/en/blog/ux-design/how-to-conduct-user-experience-research-like-a-professional/>

APPENDIX 1. Survey design

Public LTKY Budgeting survey

We are the students of Software and Systems Engineering who are developing an application that would allow LUT students to vote and decide how to use the student union funding.

This survey would only take a couple of minutes and we would be delighted to know what LUT students think about our idea/application.

1. Do you know what LTKY is?

☐ Yes ☐ No

2. Have you ever been to a LTKY event?

☐ Yes ☐ No

3. If yes, how satisfied were you with the event?

1 2 3 4 5 6 7 8 9 10

Not satisfied ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Satisfied

4. Would you be interested in voting for the allocation of LTKY student union budgets?

☐ Yes ☐ No ☐ Maybe

5. Do you think our application would help LTKY arrange more enjoyable and suitable events for students?

☐ Yes ☐ No ☐ Maybe

6. Do you think our application would help LTKY arrange more enjoyable and suitable events for students?

☐ Anonymous ☐ Public ☐ Does not matter

7. Would you use our application if you need to create an account at first?

☐ Yes ☐ No ☐ Maybe

8. Would you also be interested in voting for the LTKY board members?

☐ Yes ☐ No ☐ Maybe

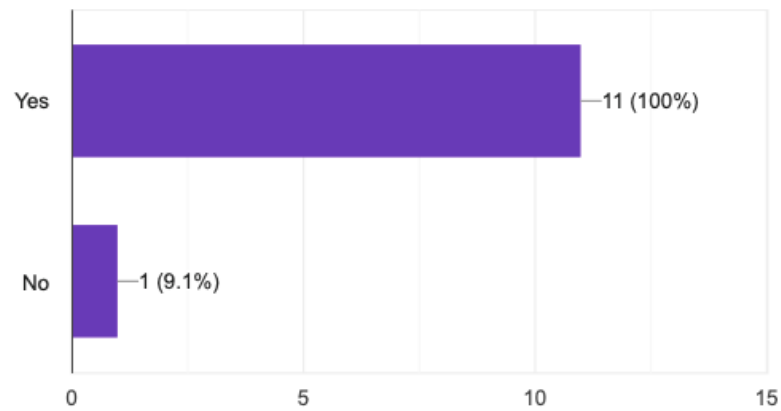
9. What other features would you want the application should contain? Any opinions or comments are highly appreciated.

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APPENDIX 2. Usability survey results

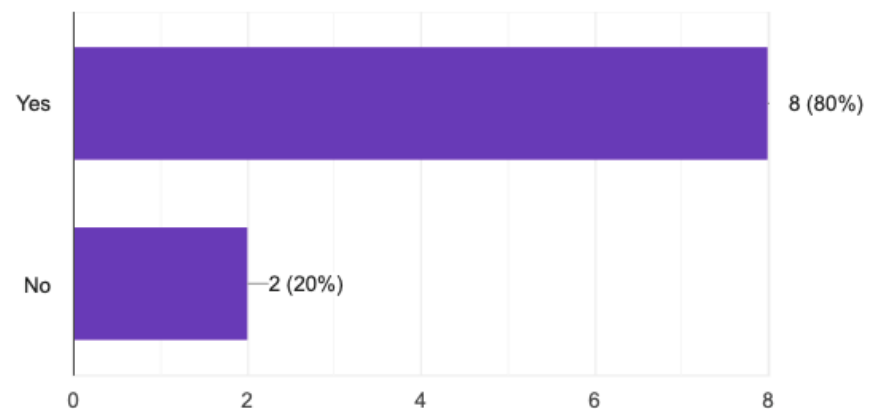
Do you know what LTKY is?

11 responses



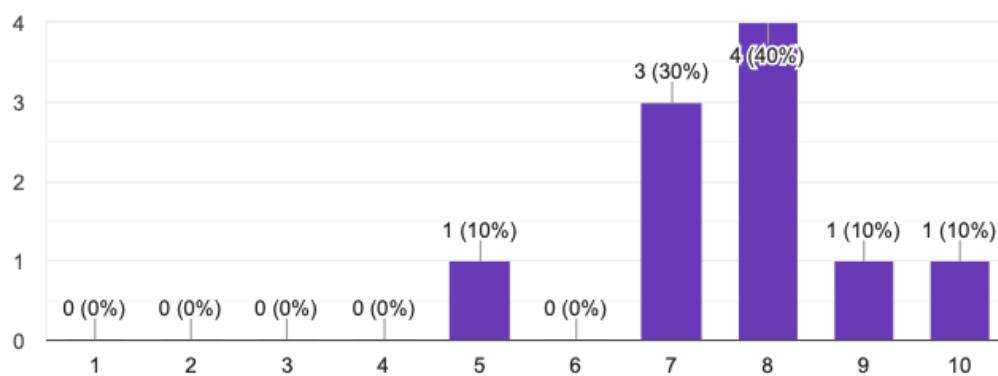
Have you ever been to a LTKY event?

10 responses



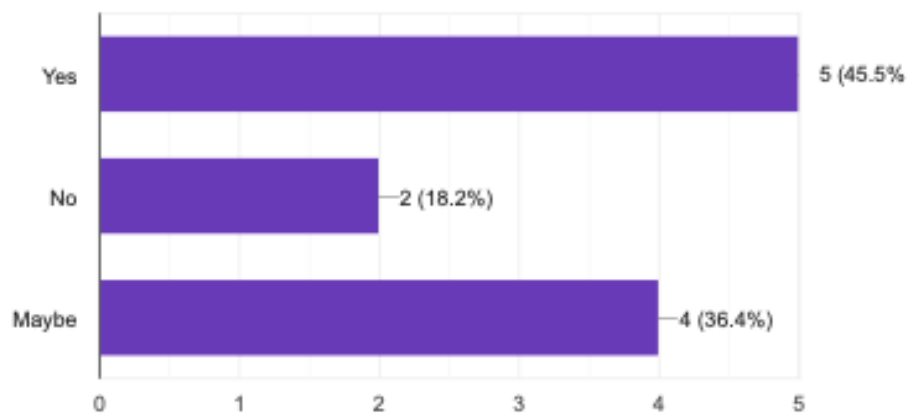
If yes, how satisfied were you with the event?

10 responses



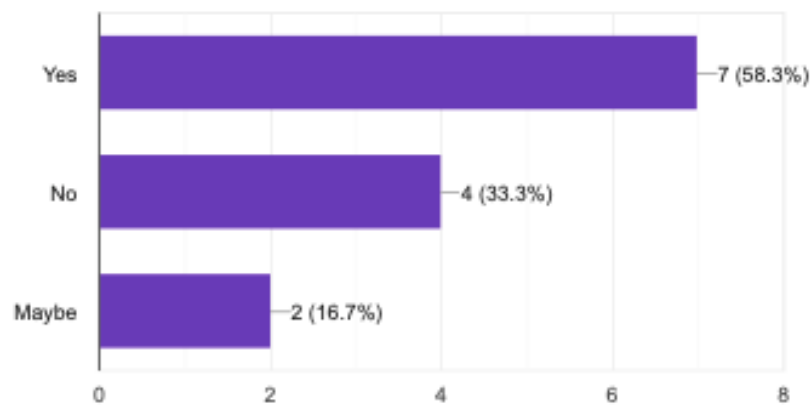
Would you be interested in voting for the allocation of LTKY student union budgets?

11 responses



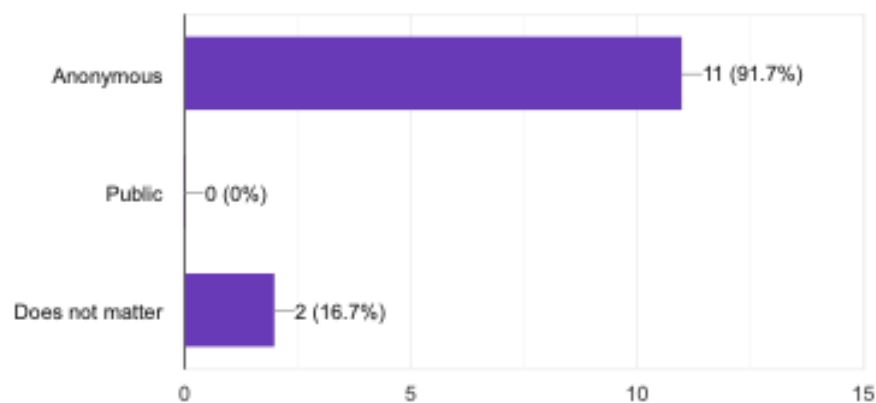
Do you think our application would help LTKY arrange more enjoyable and suitable events for students?

12 responses



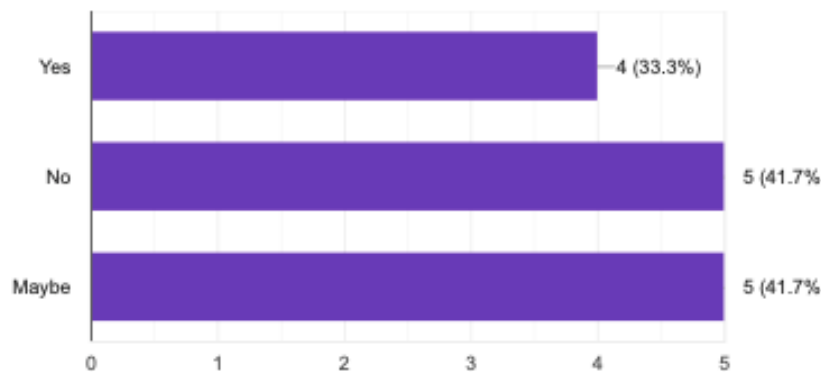
Would you want your vote to be anonymous or public?

12 responses



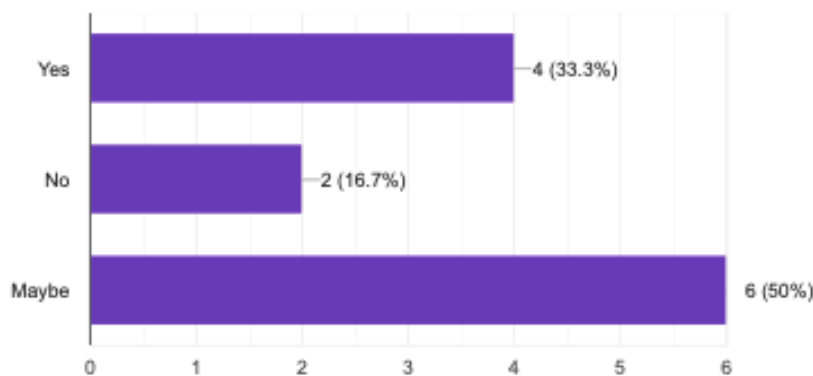
Would you use our application if you need to create an account at first?

12 responses



Would you also be interested in voting for the LTKY board members?

12 responses



What other features would you want the application should contain? Any opinions or comments are highly appreciated.

7 responses

I really liked the idea that you use the same colors as the ltky has. How ever, i think a red is really dominant color and I feel like there could have been a little less of it. Other note that I found a little weird was that on the Current budget plan view the clickable objects were walls of text instead of highlighted elements(the blue of links or underlines ect) or buttons. The login screen could have a button for automatic login. Otherwise I liked the app.

An area where others' proposals are shown if they have given permission to share with all

More detailed voting system

I think you put a lot of words which is not in English. And it makes your page a little messy.

This questionnaire should have been about the usability of the application, not about ltky :D

This questionnaire was supposed to be about the app :D

none