



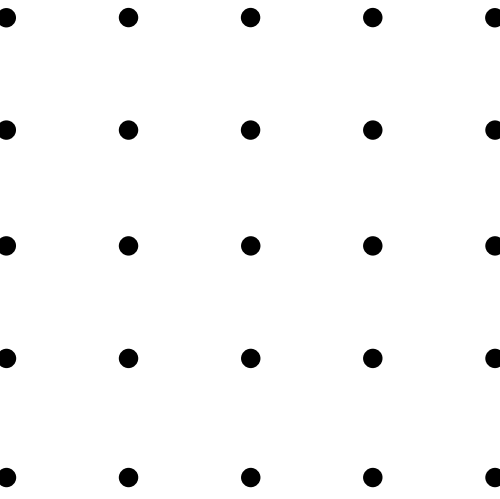
University of Wales
Trinity Saint David
LONDON

A Radio Amateur Quiz Application for a Bulgarian License With an Integrated Logbook in C#

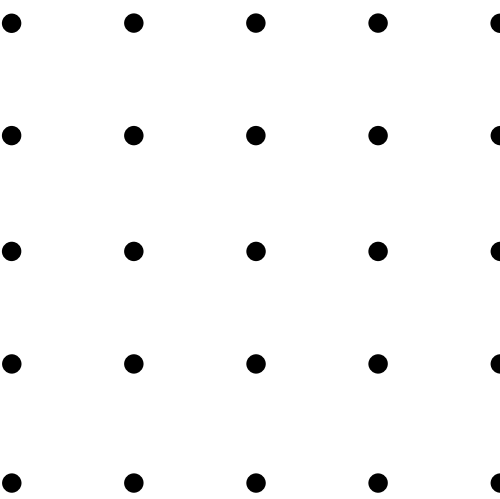
RALITSA NIKOLOVA

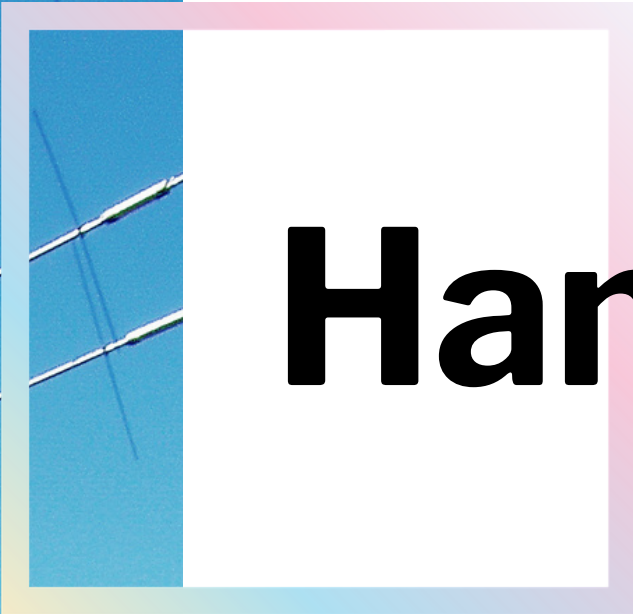
PROJECT SUPERVISOR - TERRY WALCOTT

25/03/2021



Agenda

- Project Domain and Motivation
 - Aim and Objectives
 - Existing Literature
 - Research Methodology
 - Development Methodology
 - Design Overview
 - Conclusion
 - References
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Ham Radio

THE HOBBY

- Ethical Non-commercial Institution
- Freedom in Self-Improvement
- Technological Experimentation [1]
- Communication Medium
- Licensing

THE CONTRIBUTOR

- Scientific Advancements
- Technological Development
- Social Involvement
- Emergency Communications

The Logbook



Operator's details

Confirming 2-way QSO / SWL report with: ☐ PSE ☒ QSL ☐ TNX ☐

via:

73'.....

DATE	UTC	MHz	MODE	RS/T

LZ1YE PRINT WWW.QSLPRINT.COM

Figure 1. QSL card

PURPOSE

- Radio amateur's journal
- Contact confirmation - QSL card
- Statistical data
- Handling bulk amounts of contacts

LOGGING ROUTINES

- Pen and paper
- Digital ways
- Existing applications

WHAT'S MISSING

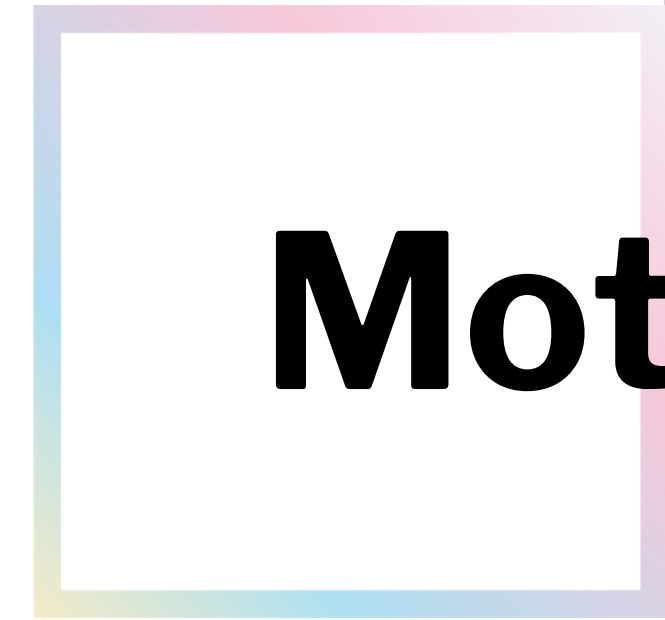
- Simplicity
- Bulgarian Language
- YL - logbook skin

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Figure 2. Paper logbook

DATE	TIME ON	CALLSIGN	REPORT		FREQ/MODE	POWER	TIME OFF	NAME, QTH, COMMENTS	QSL	
			HIS	MINE					S	R
3/4/92	6:30P	N6UMW	59	59	28.428	100W	6:45P	AL SCHADE, CAMBRIA CAL.		
3/4/92	6:45P	"	59	59	28.425	100W	6:56P	" " " "		
3/4/92	7:27A	HA3KNA	57	57	28.373	100W	7:29A	ANTI, 100M. KROM BUDAPEST HUNGARY/500W W/SELE, BEAM		
3/4/92	7:49A	IY5YUH	58	59	28.427	100W	7:49A	SERGE, UKRAINE		
4/2/92	6:15P	N3JNF	59	58	28.4310	100W	6:28P	MIKE 40W MOBILE, PENN		
4/2/92	6:15P	N5Y15	59	59	28.421	100W	6:30P	KURT SHELTON RES BOSTON MA KW 8305		

Mot



Mot

AN ACTIVE RADIOAMATEUR SINCE 2006

A member of the community since 2006 - active operator, rather than a technician.

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CONTRIBUTE AND GIVE BACK

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HUSTLE LIGHT EXPERIENCE

When preparing for an expedition, you usually need to bring mummoth pieces of equipment on site and any pound less is of further help.

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-
- A diagram consisting of two rows of five dots each, arranged in a rectangular grid. This represents a 5x2 grid of squares.



Goals

A diagram consisting of two rows of five dots each, arranged in a rectangular grid. The dots are evenly spaced both horizontally and vertically, representing the intersections of a 5x2 grid of cells.

A diagram consisting of two rows of five dots each, arranged in a rectangular grid. The dots are evenly spaced both horizontally and vertically.

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Literature

HISTORICAL HIGHLIGHTS AND EVOLUTION OF THE TECHNOLOGY

- Early discoveries - electromagnetic induction, radio waves - speed, wave length, behaviour. Vertical radiating antenna [2]
- Regress and progress of amateur radio [3]

PUBLIC SERVICE

- The hobby as a non-commercial communication service
- Emergency communications - part of a disaster response plan or personal emergencies [2], [4], [5]
- Providing communication services for different social events like rallies, marathons etc.

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Literature



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TECHNOLOGICAL DEVELOPMENT

- Design and build your own equipment with the help of radio amateur handbooks and manuals [6], [7]
- Test and experiment with equipment [8], [9]

SCIENTIFIC ADVANCEMENTS

- Weather forecasting [10]
- Ionosphere studies [9]
- Radio Science [9], [10]

BEGINNER'S LITERATURE

- Introduction to Ham Radio [6]
- How to become an operator? [11]
- Main aspects of the hobby [12]

Research Methodology

PURPOSE - DESCRIPTIVE RESEARCH

Deeper understanding of the issue. [13]

A Questionnaire, assessing the logging routines of radio amateurs.

Interviews from bulgarian hobbyists for the use of bulgarian logbook interface and a license examination quiz app.

PRIMARY/SECONDARY RESEARCH

Collecting original data regarding the specific issue.

No similar research papers have been found.

Existing literature - usage of radio equipment and the evolution of the hobbyists.

MULTI-METHOD RESEARCH

Quantitative - the questionnaire.

Qualitative - the interviews. [14]



Research Methodology [13]

INTERPRETIVISM AS A PHILOSOPHY

Active hobbyist - strong knowledge and involvement in the community. Interpret collected data through the social prism of amateur radio.

DEDUCTIVE APPROACH

To test and build upon the main theory - the need of using a simpler logbook application and add an appearance more appealing to the female operators.

STRATEGY, TIME HORIZON

Archival research of the routines and habits of a typical ham and the purposes of radio equipment through the years.

Action research - with focus on the participants, are there any weaknesses with current logging ways - qualitative aspect (Figure 4).

Cross-sectional time horizon.

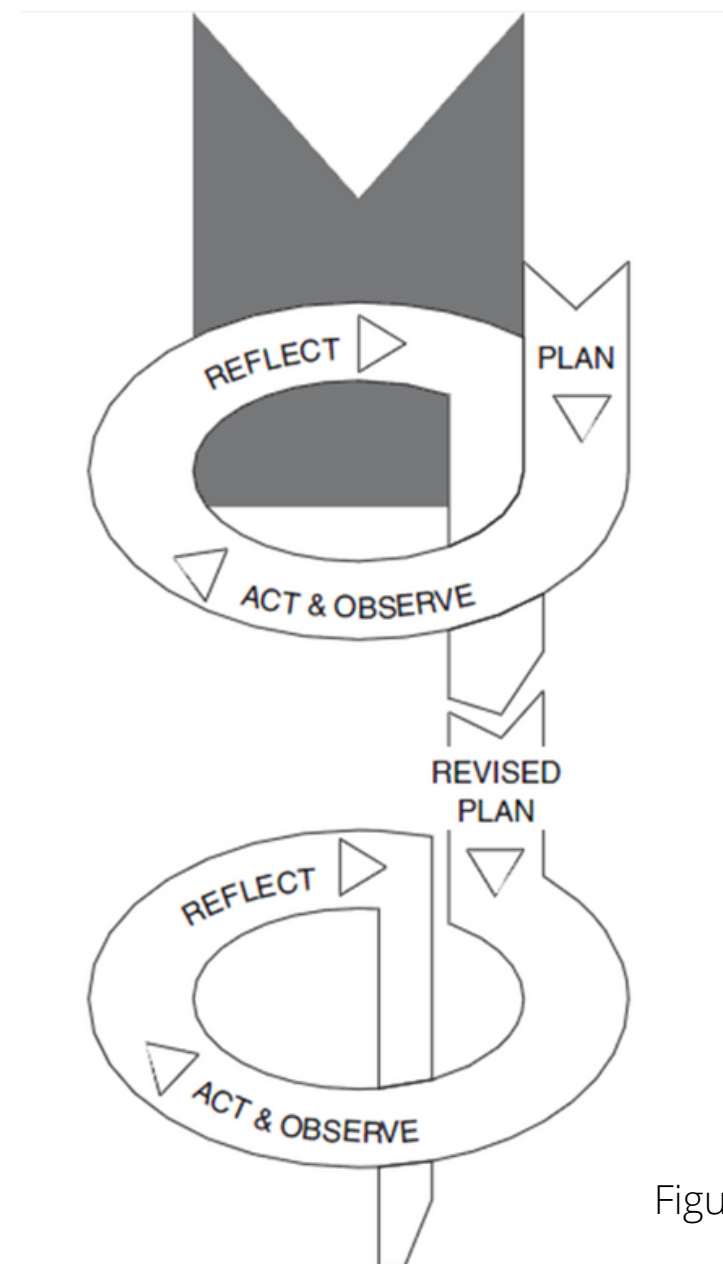


Figure 4 . Action Research Spiral [15]

Development Methodology

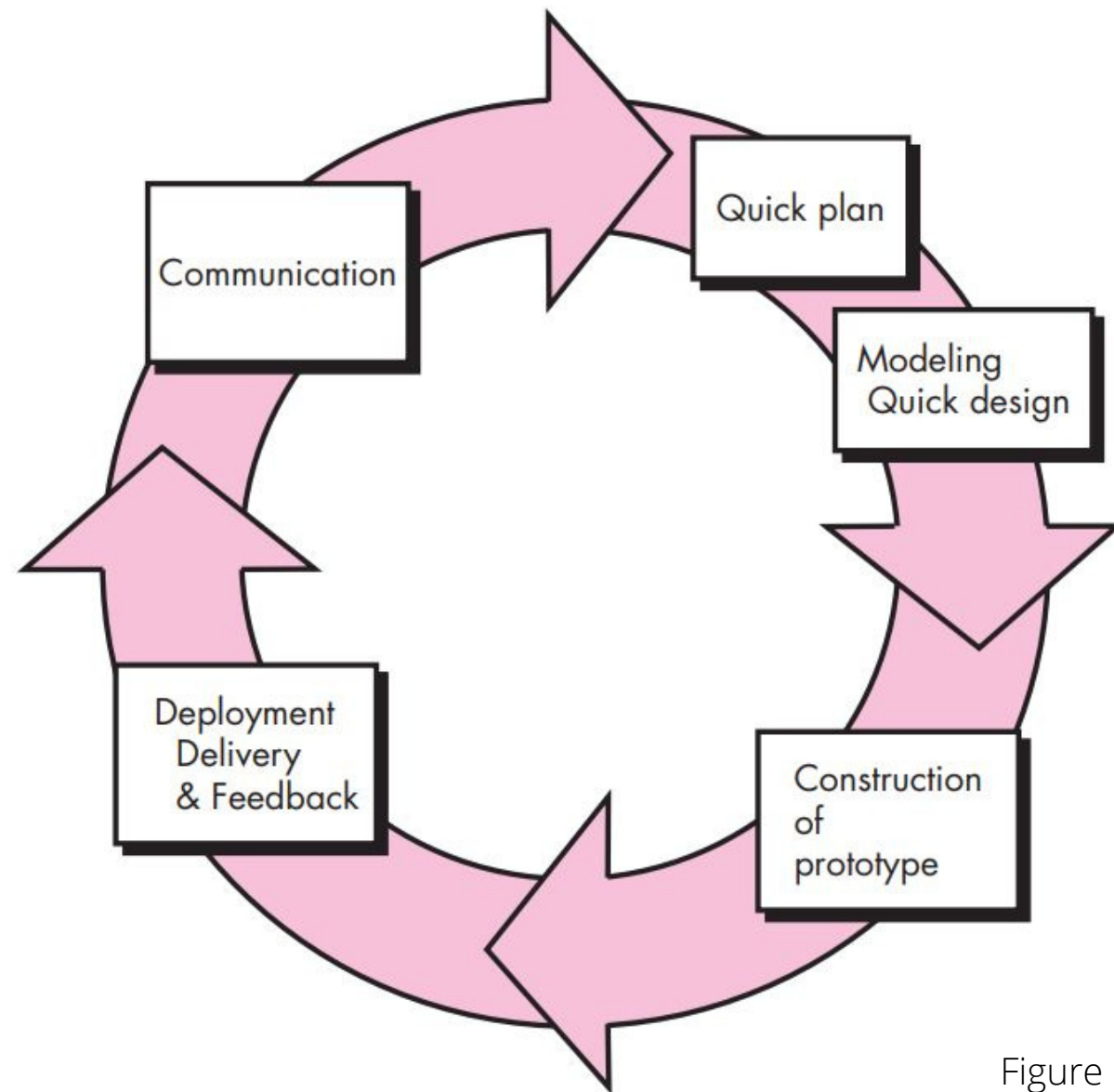


Figure 5. Prototyping [16]

EVOLUTIONARY PROTOYPING

- SDLC
- Create a prototype according to Figure 5
- The prototype is used as foundation to build the full product on.

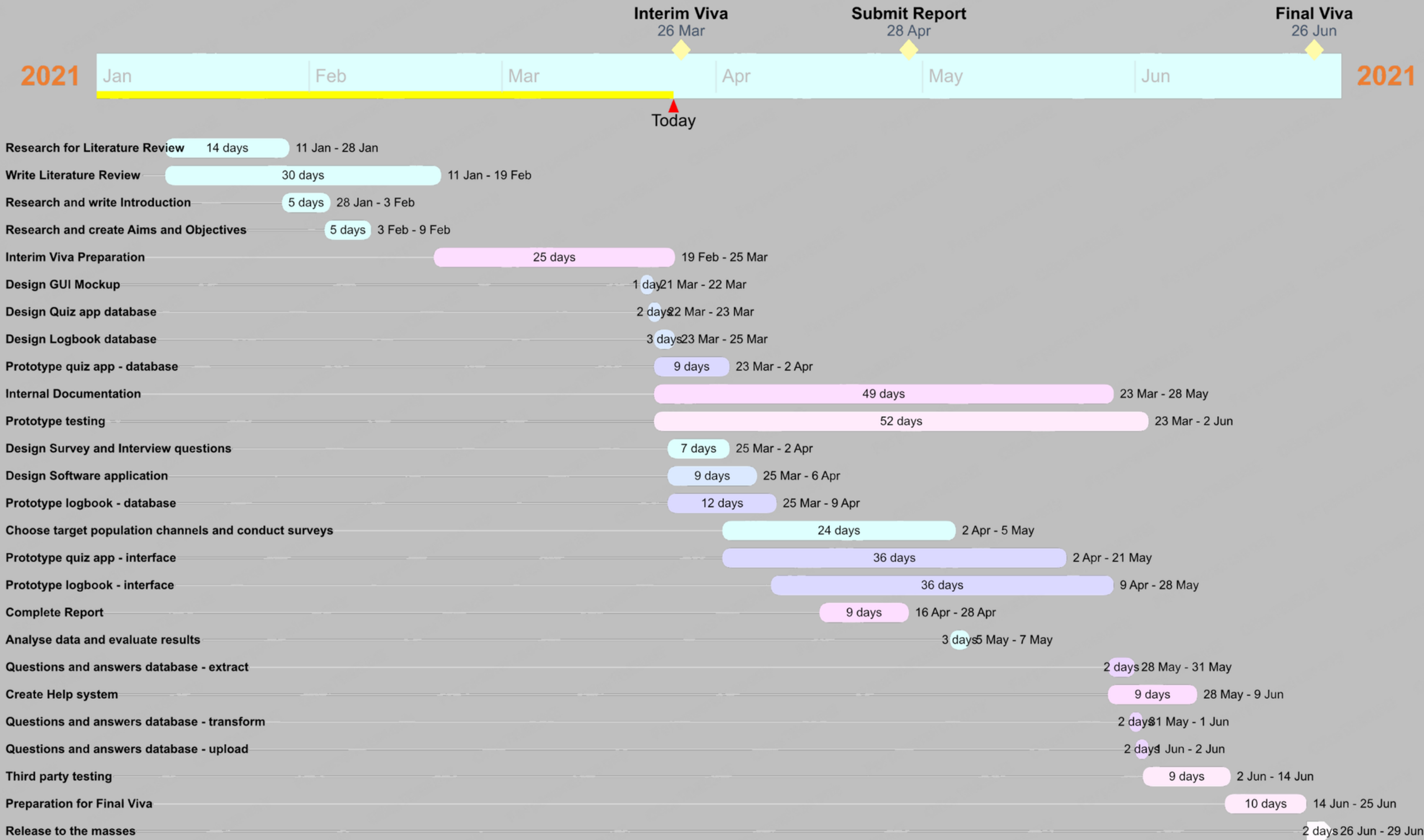
EXISTING LOGGING APPS

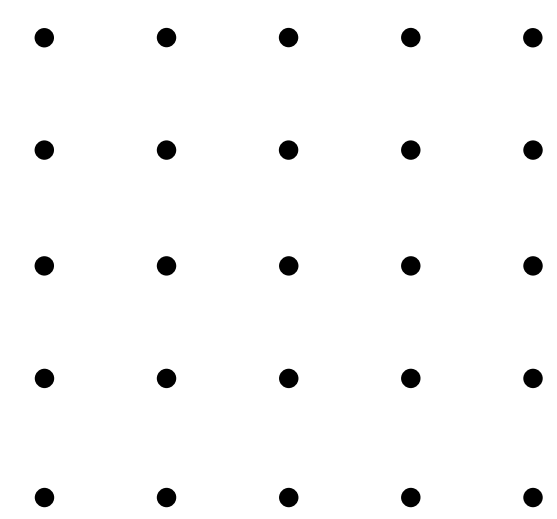
Considering the aim of the project and the initial research theory, some sieving has been done regarding the functionalities of the product.

TIME SPAN

Calculated via three-point estimation method, the project is planned to be completed at the end of June 2021.

Gantt Chart Major Project





Design

TEST QUESTION

Load random questions from a database, with multiple choice answers.

EXAM

Load a template of an exam, Countdown the time needed for completion and show result.

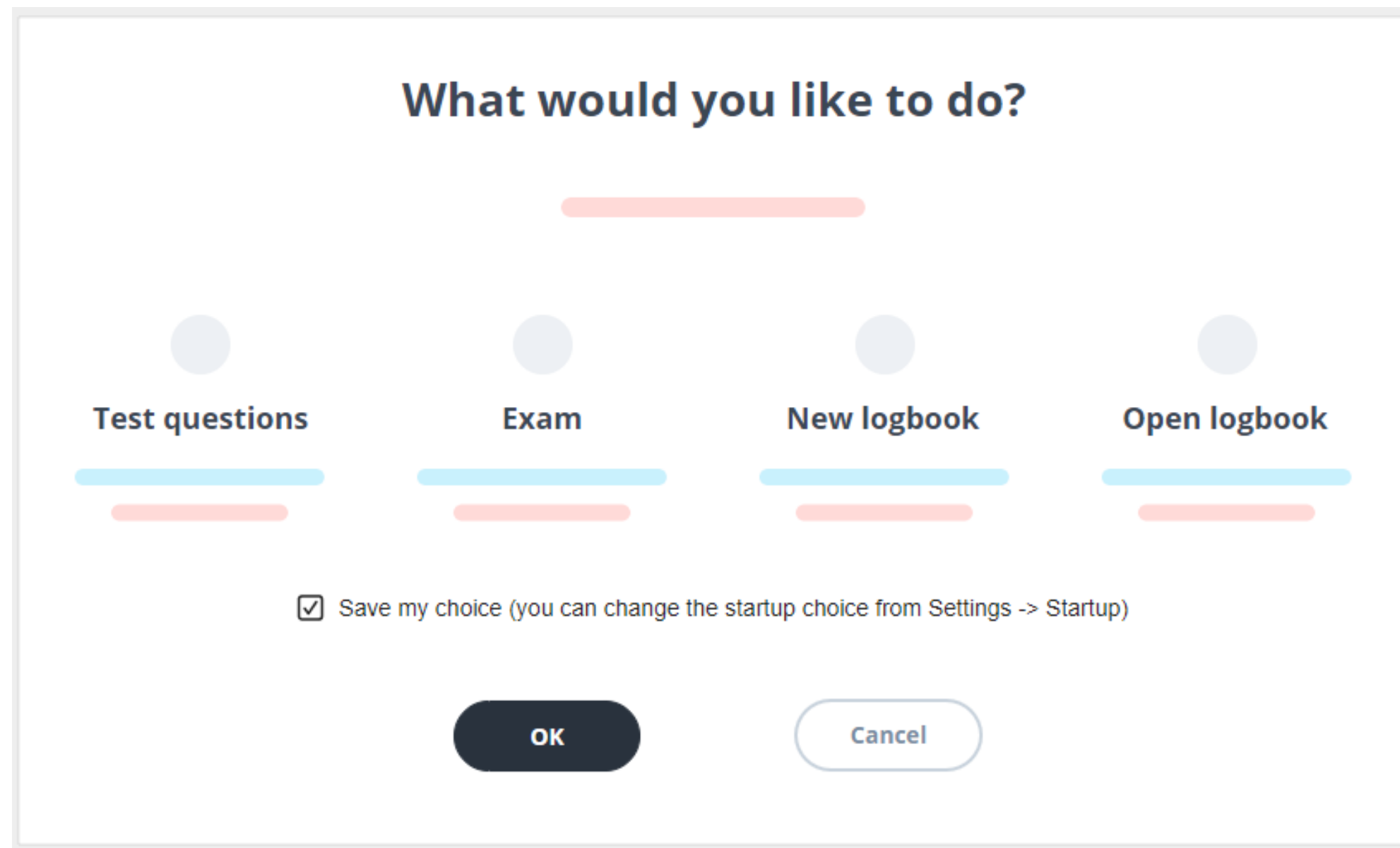
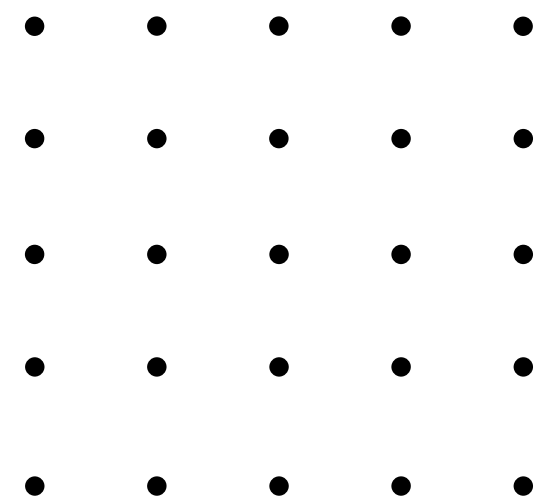


Figure 6. Startup Page - mockup



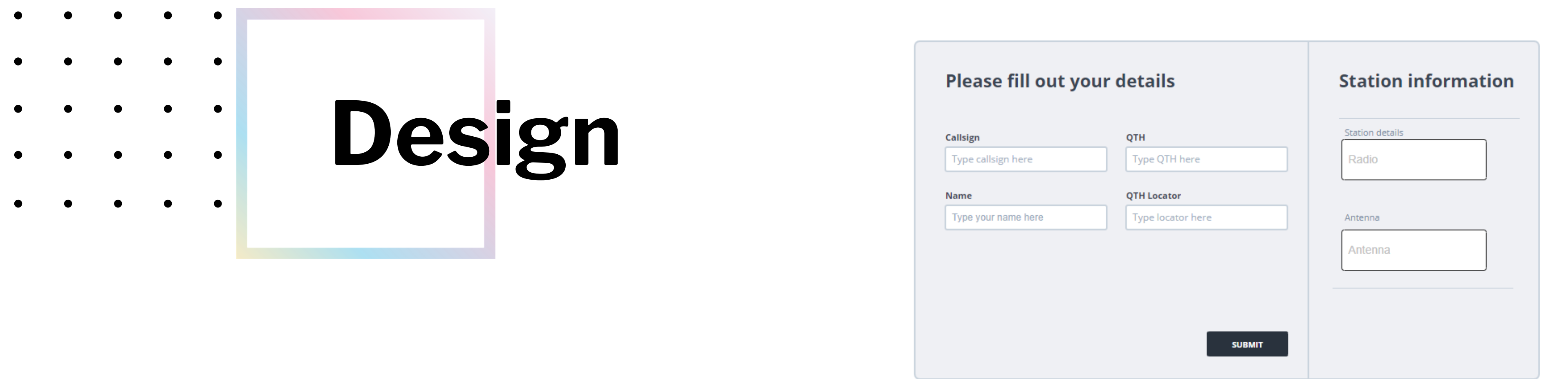


Figure 7. New logbook - fill details

Callsign: LZ1AAT X

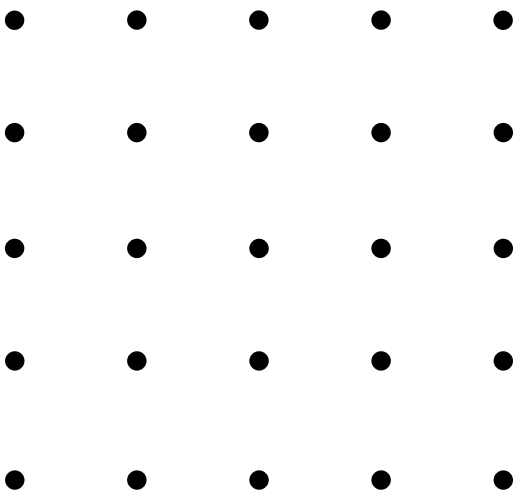
HomeFilterSettingsHelp

Search

Export selected

Date	Time	Band	Mode	Callsign	Country	RST	Locator	Freq
02/09/2020	20:22	40m	CW	LZ1MKN	Bulgaria	599	KN22ID	7.005.50
02/09/2020	20:50	20m	SSB	UA9TK	Russia	59	LO91GF	14.265.100
05/09/2020	09:07	20m	PSK31	EA8CTK	Canary Is	599	IL18NI	14.073.35
06/09/2020	01:16	20m	SSB	M0PZT	England	59	JO01FS	14.110.00

Figure 8. Logbook Viewer



Design

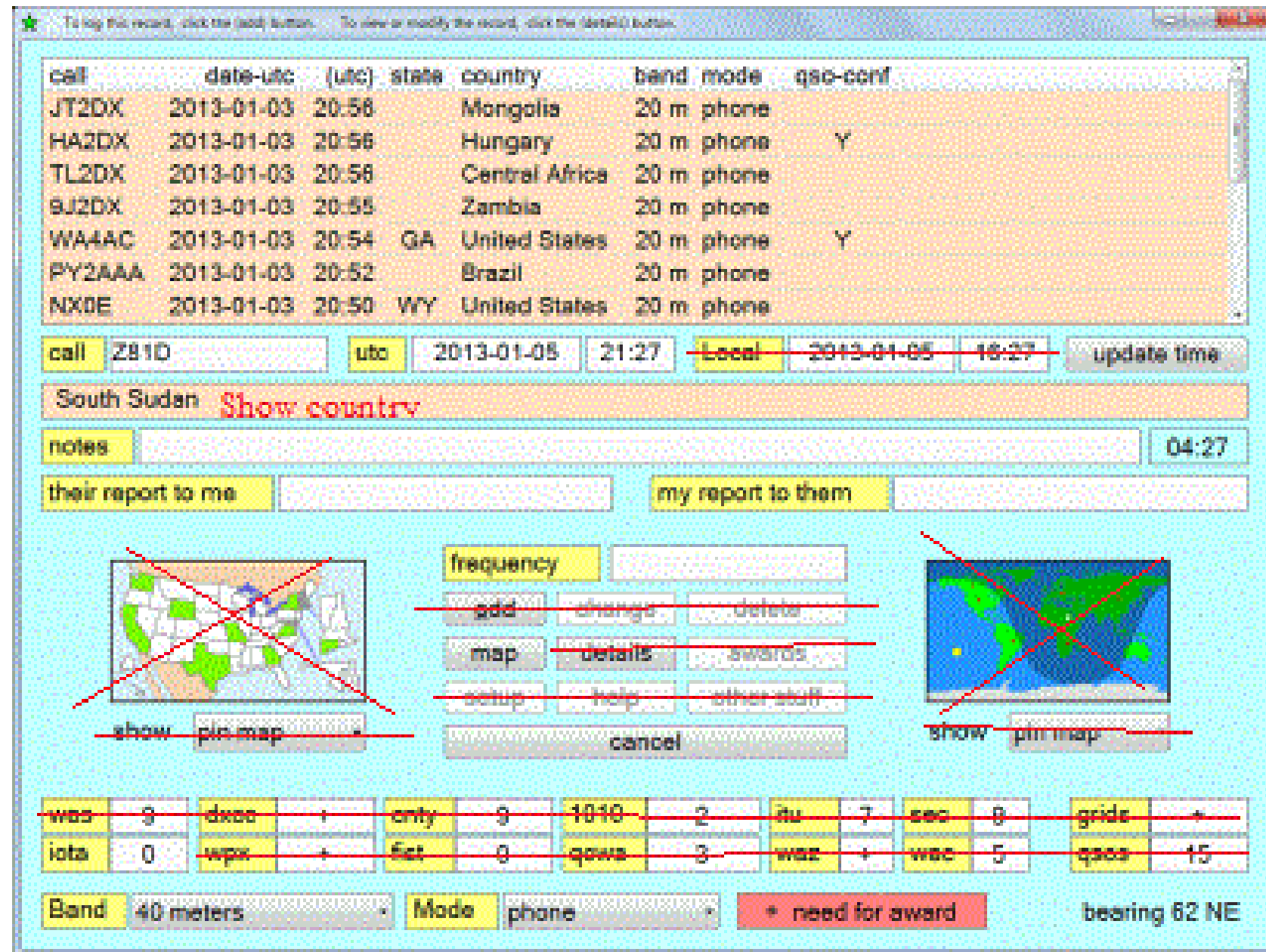


Figure 9. Logging software BLogger [17]

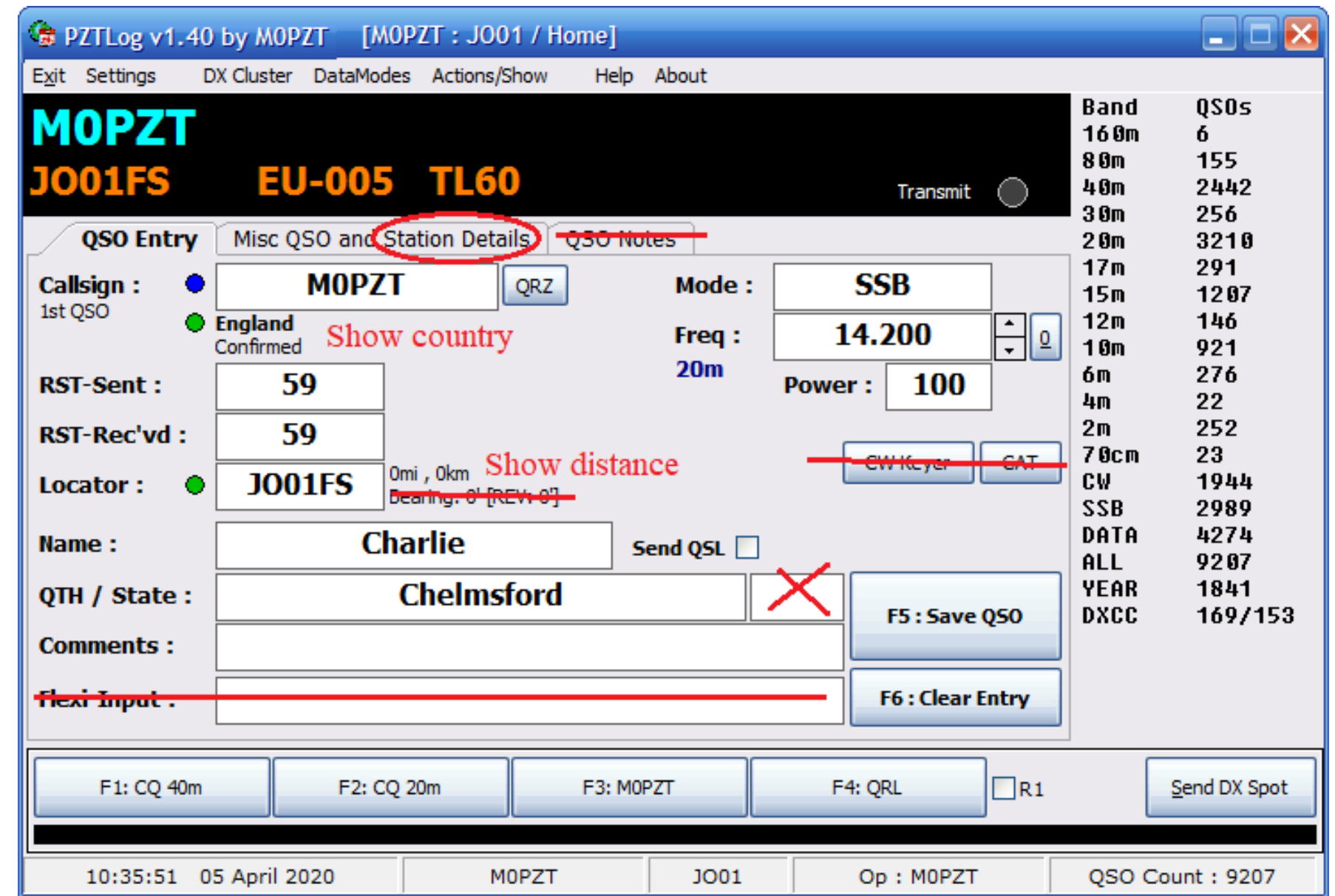
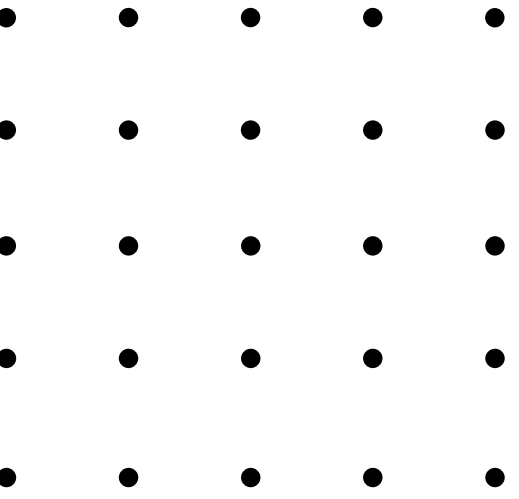
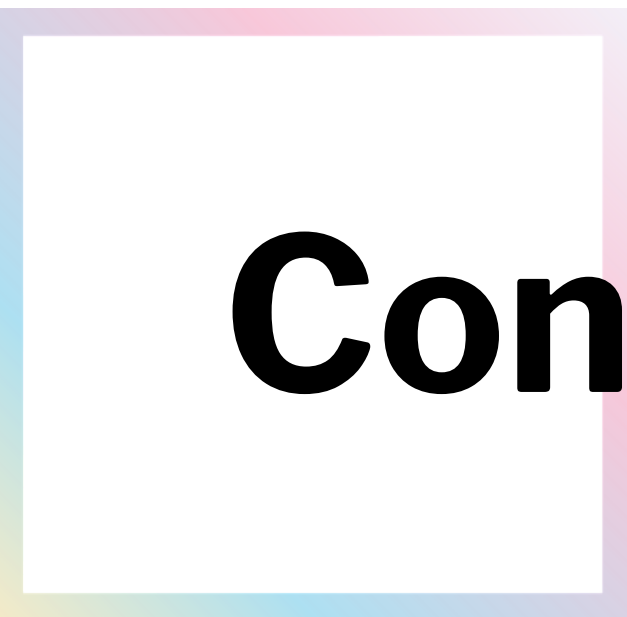
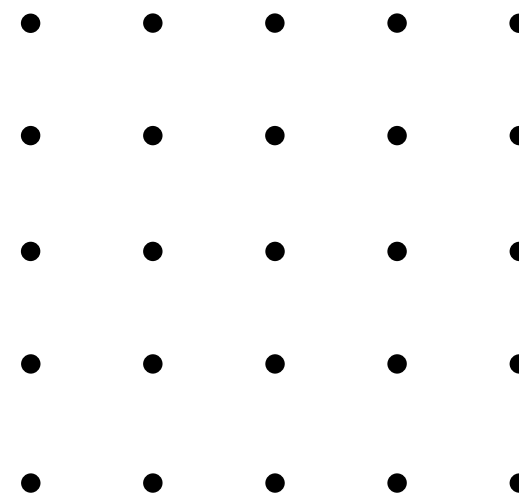


Figure 10. Logging software MOPZT [18]



Conclusion

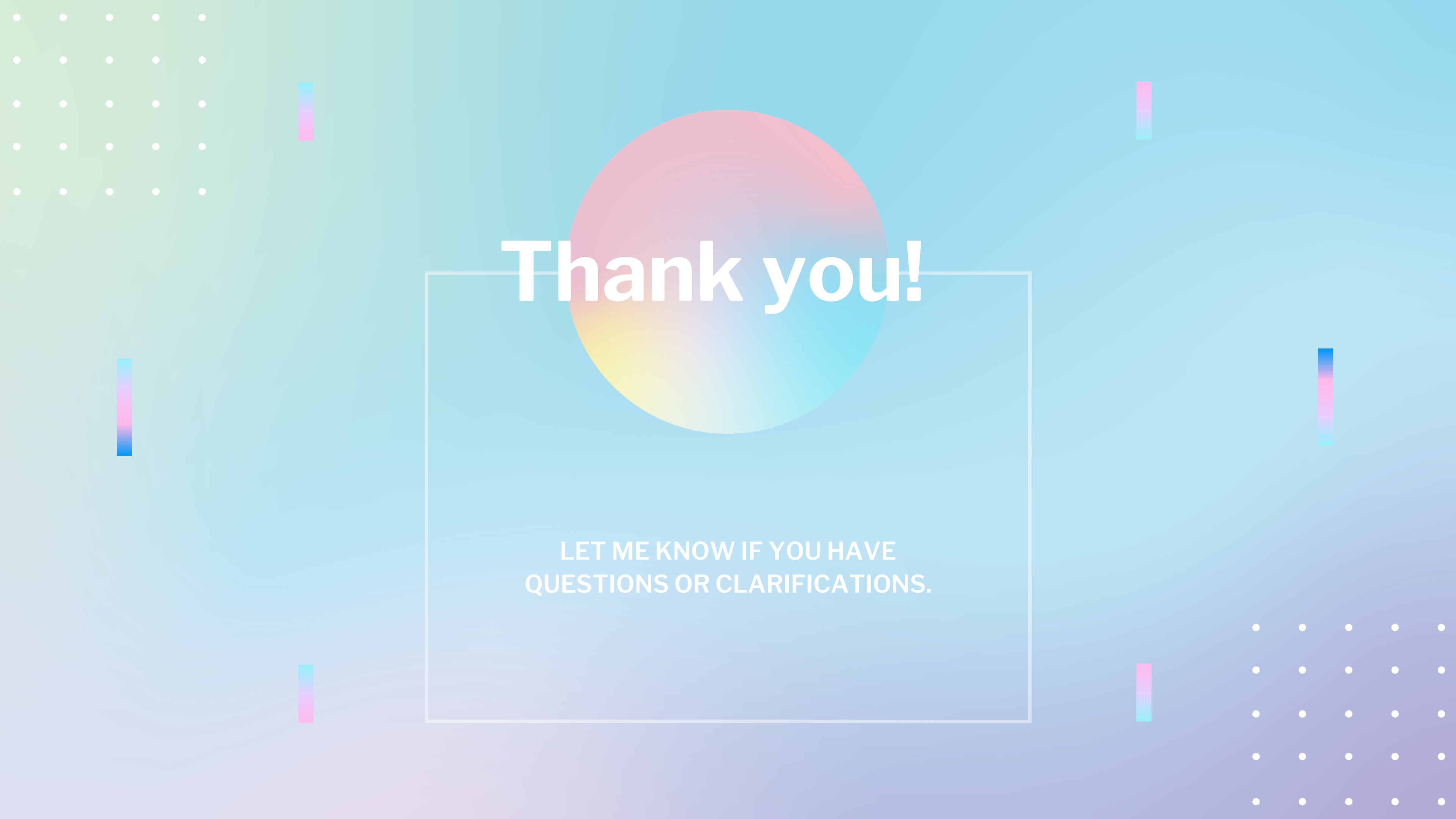


- Aspects of the hobby
 - Importance of the logbook
 - Limited documentation about the specific topic
 - Time limitations, missed deadlines but still feasible
 - Emphasise on improving C# skills
- 



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Thank you!

LET ME KNOW IF YOU HAVE
QUESTIONS OR CLARIFICATIONS.