Applied Science Private University

Faculty of Information Technology

Department of Computer Science

Field Training

FINAL REPORT

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Company:

MobiSoft

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14/7/2024 - 6/9/2024

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Acknowledgment

I would like to express my sincere gratitude to MobiSoft for providing me with the opportunity to participate in leading projects as a Flutter applications developer. My heartfelt thanks go to the Mobile Development Team for their guidance and support throughout my training.

I am particularly grateful to Maher Almasri, my supervisor, whose mentorship and insights were invaluable to my learning experience. I also extend my appreciation to all my colleagues who offered their assistance and shared their expertise, making my time at MobiSoft both educational and enjoyable.

Thank you all for your encouragement and for helping me grow professionally in the field of information technology.

1. Introduction

1.1. Company Background

MobiSoft was established in 2010 as a spin-off company from RealSoft Advanced Applications [1] – IT solutions providers –.

MobiSoft is located in 185 Wasfi Altal str. Khalda -Wahet Ammon Building, Amman, Jordan. Strategically located in Amman, Jordan's economic center, providing access to a broad customer base and potential business partnerships. The city offers a rich talent pool and robust infrastructure, both crucial for IT businesses. [1]

Who They Are

MobiSoft is the Middle East's market leader in developing and implementing enterprise mobile products and solutions. The company utilizes state of the art mobile and wireless devices, frameworks and software to serve various business verticals.

Ever since developing the world's first PDA based Population and Dwelling Census for the Sultanate of Oman in 2003, MobiSoft has successfully endeavored into various verticals including Census and Surveys, Municipal, Sales and Retail, Marketing, Inspections and GIS. Since 2003, they have continuously helped clients accelerate their business cycles, increase productivity, reduce operating costs and extend their infrastructure through enterprise mobile business solutions. MobiSoft has solidified its existence in the Gulf region through opening offices in Oman and KSA and forging alliances with strong partners in multiple countries across the region. [1]

1.2. Company Products

MobiSoft company offers enterprise mobile business solutions for various domains, and has continuously grown its client base of prestigious public and private entities spanning the MENA region by introducing cutting edge mobile technologies into new business areas. For the past 6 years helped clients accelerate their business cycles, increase productivity, reduce operating costs and extend their infrastructure through enterprise mobile business solutions, and successfully endeavored into various verticals including Census and Surveys, Municipal, Sales and Retail, Marketing, Inspections, GIS and much more. MobiSoft takes pride in its 6-year track record in the mobility industry, with an expertise that spans multiple

development platforms including Windows Mobile, Windows CE, Android, iPhone, Palm OS and J2ME and targets various devices including Smart Phones and Tablet PCs. [1]

1.3. Company Organizational Structure

I trained in the Mobile Development Team as a Flutter mobile applications development trainee, where I worked on developing and maintaining cross-platform mobile applications.

2. Projects/Tasks/Assignments

2.1. Bloc design pattern (14/7/2024 – 18/7/2024)

I shared my background and experience in the field, as I was evaluated on my knowledge of the programming language, framework, and tools necessary to and to fulfill my training. Then I was tasked with learning the BLoC design pattern to apply an API on an employee information interface as a data source, in addition to designing the user interface.[2]

Approximate period spent on this task: 6 working days.

Hardware used: my personal laptop (Dell).

Software used: Android Studio, Postman, JSON 2 HTML (bloople.net).

2.2. Form web services (21/7/2024 – 25/7/2024)

Started by designing a user-friendly login form, followed by its navigations, then I implemented the validation for two functionalities; the CAPTCHA identifier alongside the account information using API servers.

Here I got to repurpose the code I learnt in my previous task, as both web services were integrated using the BLoC design to ensure clearer and more concise code.

In addition, I included firebase cloud messaging to integrate app notifications.

Approximate period spent on this task: 4 working days.

Hardware used: my personal laptop (Dell).

Software used: Android Studio, Firebase cloud messaging, Flutter Color from Hex Generator | Jonas Rodehorst (jonas-rodehorst.dev).

2.3. Debugging tools (28/7/2024 – 1/8/2024)

Working with the Flutter Development Team, I was tasked to debug a part of a larger project which handled Optical Character Recognition. I fixed syntax errors, updated obsolete widgets to supported alternatives, and traced the source of data lose with the application running on an Android mobile device, I came as to where the problem was in a method responsible for reading OCR information, it was unable to decode it properly and return it, therefore resulting a value of null being returned, before reporting to the team and handing over my work for further analysis and resolution.

Approximate period spent on this task: 7 working days.

Hardware used: my personal laptop (Dell), Huawei mobile phone.

Software used: Android Studio.

2.4. Interactive survey base (4/8/2024 – 8/8/2024)

Given the company's need for surveys across various projects, whether as part of an application or standalone, we required a developer-interactive general survey structure. Requiring a set of components (checkboxes, text areas, radio buttons and combo boxes) each following a question, with custom characteristics like visibility, editability, mandatoriness, and keyboard style for text fields. These questions are saved on a list – or more – with their types and characteristic attributes, they are able to be distributed across a desired number of pages depending on their relation, significantly increasing efficiency and flexibility.

Approximate period spent on this task: 4 working days.

Hardware used: my personal laptop (Dell).

Software used: Android Studio.

2.5. Flyer Project – part1 (11/8/2024 – 15/8/2024)

Developing a fully functional Flyer application, displaying flayers of different shopping markets.

After laying down the design and analyzing my application’s structure, I began with developing the first two pages – both locally shared (therefore, the user will not have to re-enter the same information every time the app is opened). These included a location setter of the user where I integrated API-serviced data, of residence country, city and preferred language, and a login page supporting both local and external accounts; logging into an existing account, creating an account, logging with Facebook or Google accounts, which process is also skippable to be directed to the main page.

Approximate period spent on this task: 5 working days.

Hardware used: my personal laptop (Dell).

Software used: Android Studio, Firebase authentication, Flutter Color from Hex Generator | Jonas Rodehorst (jonas-rodehorst.dev), Instantly parse JSON in any language | quicktype, JSON Blob | create, edit, view, format, and share JSON.

2.6. Flyer Project – part2 (18/8/2024 – 22/8/2024)

Next, I developed the drawer menu with a set of primarily functional and informative pages, which were the Home page, Login screen, Shopping List, Setting, Feedback, Share The App and finally the About Us page. Each page cohesively integrated in the drawer menu, complementing the app's requirements.

Approximate period spent on this task: 5 working days.

Hardware used: my personal laptop (Dell).

Software used: Android Studio, Flutter Color from Hex Generator | Jonas Rodehorst (jonas-rodehorst.dev).

2.7. Flyer Project – part3 (25/8/2024 – 29/8/2024)

To achieve best management and handling of the data displayed in my application, I structured it in a JSON format, organized and modeled it according to the convenient shape needed in the application, to simulate a live server, I utilized Postman by uploaded my data to a mock server. This setup allowed me to connect and view the data to be properly accessed in the desired pages.

Approximate period spent on this task: 5 working days.

Hardware used: my personal laptop (Dell).

Software used: Android Studio, Postman, Instantly parse JSON in any language | quicktype.

2.8. Flyer Project – part4 (1/9/2024 – 5/9/2024)

After integrating the final piece of data I need for my application, I designed and implemented the user interface where it would be displayed – ensuring that the visual elements aligned with the usability goals, as well as I added detailed functionalities of gestures and navigations to complete the application's structure and ensure user satisfaction of enhanced flow, and tested the user experience to optimize the interface and interactions, ultimately create a seamless environment.

Approximate period spent on this task: 4 working days.

Hardware used: my personal laptop (Dell).

Software used: Android Studio, Flutter Color from Hex Generator | Jonas Rodehorst (jonas-rodehorst.dev).

3. Formal Training Received

Getting accepted to train in a company known for its innovative statistical, logical, and visually neat solutions, I am proud of the comprehensive training I received. Enriching my knowledge and polished my skills in several key areas, including software development, data management, and user interface design.

Throughout the training, I was exposed to industry-standard tools and methodologies, such as the BLoC design pattern, API integration tools, and advanced debugging techniques, which have prepared me to tackle complex challenges in a fast-paced and continually growing field. Additionally, the hands-on experience with real-world projects provided me with practical insights professional work environment.

This training not only broadened my technical capabilities but also enhanced my teamwork skills, equipping me with the confidence and expertise to contribute effectively to future projects.

4. Relate Training Experience to your Study

Taking a visual programming course in Flutter framework, alongside software development and analyses courses while studying Bachelor's computer science, provided me with a strong foundation in Dart programming language's syntax, and introduced me to many of the essential as well most used widgets in application development. These courses emphasized the importance of creating applications that not only serve users but also uplift and empower communities, aligning with my passion for technology that drives positive change.

Training at a leading company in these services enriched my experience, allowing me to apply theoretical knowledge to real-world scenarios. For example, the understanding of state management I gained in class was deepened through hands-on work with the BLoC design pattern during my training. This practical application of my studies made me more eager to excel in my coursework, as I could see the direct impact of my academic learning on developing active solutions that meet the needs of users.

This experience has inspired me to push the boundaries of my studies, seeking out opportunities to create tools that not only serve the immediate needs of people but also contribute to their long-term growth and well-being. I am committed to using my skills to develop impactful and meaningful technological solutions.

5. Conclusion

My training experience shaped my hands-on technical skills, practical knowledge, and overall professional development. It allowed me to bridge the gap between academic learning and real-world practice, enabling me to expand upon topics introduced during my studies.

Throughout the training, I developed a solid grasp of the BLoC design pattern, which strengthened my ability to manage complex application states effectively. The projects I worked on allowed me to refine my skills and adapt to industry-standard practices. Additionally, I gained practical experience in using essential tools vital in the development and testing of modern applications. Beyond technical skills, the training enriched my understanding of the importance of creating user-centric applications.

The training was well-suited to my background in computer science, as it provided opportunities to apply theoretical knowledge in a practical setting. However, I identified a need to further improve my skills in areas such as advanced integration of databases and optimizing application performance. These are areas where I plan to focus my efforts moving forward.

To enhance my capabilities, I intend to dive deeper into performance optimization and explore advanced topics in Flutter development, such as animations and relational databases. Additionally, further streamline the development process and improve the quality of the applications I build.

I highly recommend this type of training experience to other students looking to expand their skill set and gain valuable industry insights. Engaging with real-world projects not only solidifies your understanding of theoretical concepts but also equips you with the practical skills needed to thrive in a fast-paced, technology-driven environment.

In conclusion, this training has been a transformative experience, providing me with the tools, knowledge, and confidence to pursue a career in software development with a focus on creating impactful and meaningful technological solutions. I look forward to continuing to grow and contribute to the field, applying what I have learned to make a positive difference in the lives of users.

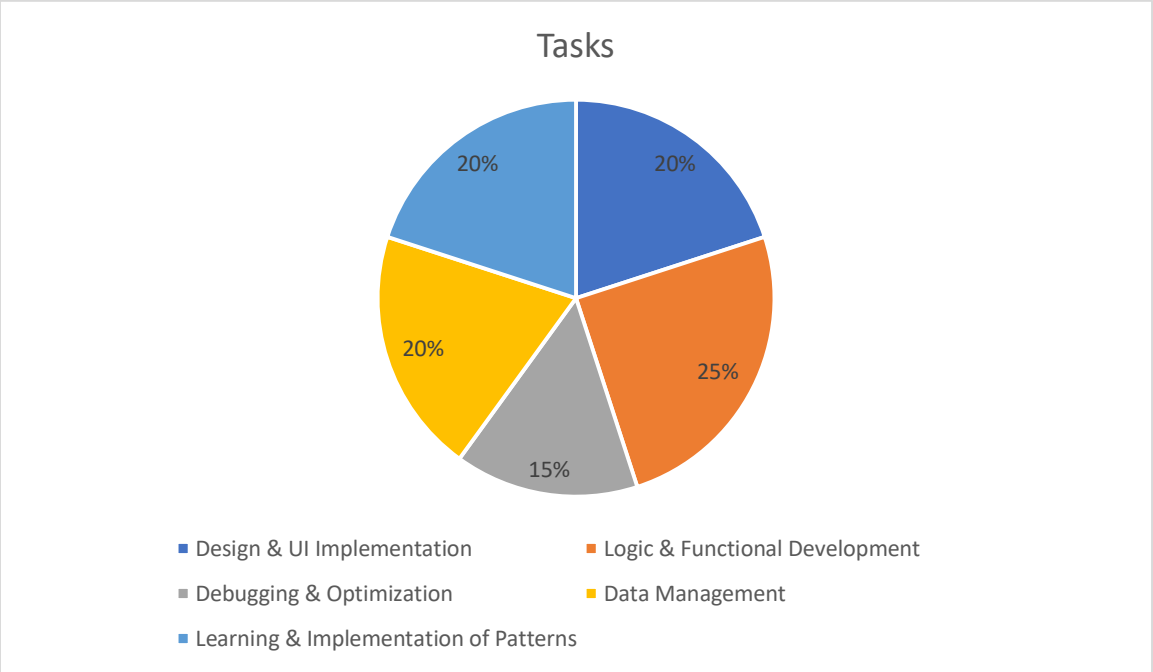
References

[1] Home (mobisoft-me.com)

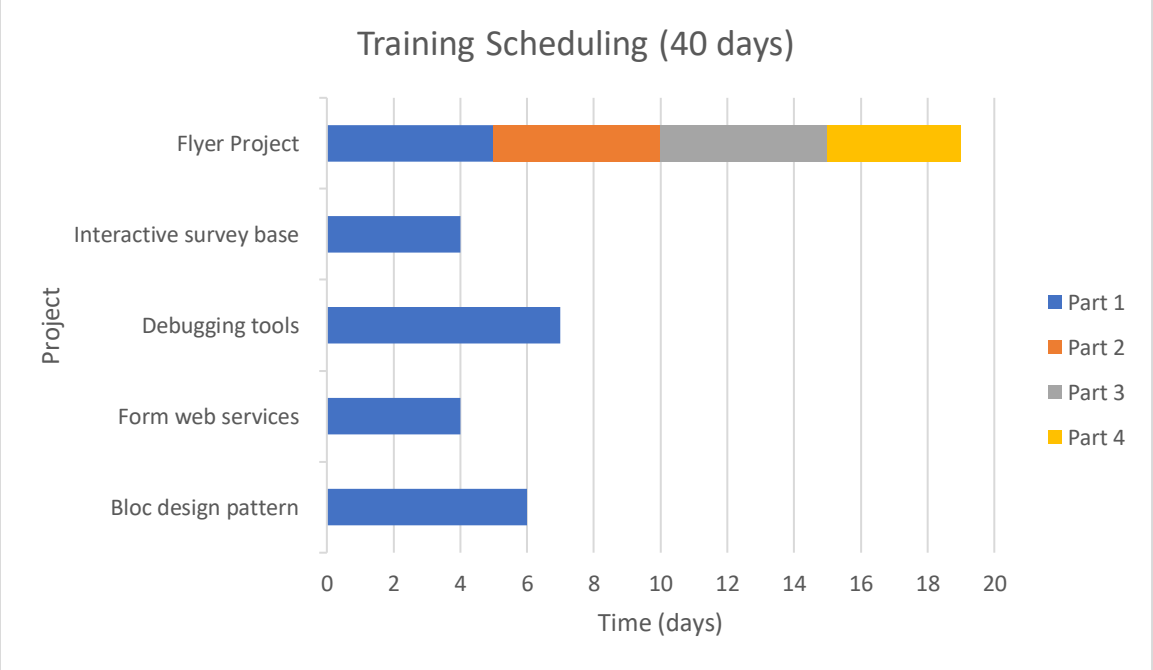
[2] (13) Flutter BLoC - بالعربي - YouTube By Omar Ahmed

Appendix

Categories showing tasks balance in training:



Time scheduling for each project:



All training projects are on the GitHub repository:

https://github.com/SamarAlkhayyat/MobiSoft-training.git