

ARIZONA STATE UNIVERSITY

UNDERGRADUATE THESIS

Building a Mobile Device that Uses the Power of a Desktop Computer

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*A thesis submitted in fulfillment of the requirements
for the degree of Software Engineering*

for

Barrett, The Honors College

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Declaration of Authorship

I, Dylan LATHRUM, declare that this thesis titled, “Building a Mobile Device that Uses the Power of a Desktop Computer” and the work presented in it are my own. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at this University.
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work.
- I have acknowledged all main sources of help.
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

Signed:

Date:

“Premature optimization is the root of all evil.”

Sir Tony Hoare

ARIZONA STATE UNIVERSITY

Abstract

Barrett, The Honors College

Software Engineering

Building a Mobile Device that Uses the Power of a Desktop Computer

by Dylan LATHRUM

The Thesis Abstract is written here (and usually kept to just this page). The page is kept centered vertically so can expand into the blank space above the title too...

Acknowledgements

The acknowledgments and the people to thank go here, don't forget to include your project advisor...

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List of Abbreviations

| | |
|------------|----------------------------------|
| CRD | Chrome Remote Desktop |
| PCB | Printed Circuit Board |
| RDP | Remote Desktop Protocol |
| SSH | Secure Shell (Protocol) |
| VNC | Virtual Network Computing |

For/Dedicated to/To my...

Chapter 1

Introduction

1.1 Power and Portability

TODO

1.2 Purpose of this Thesis

TODO

1.3 Thesis Overview

TODO

Chapter 2

Background

2.1 Specialization of Computers

TODO

2.1.1 Power of the Desktop

TODO

2.1.2 Convenience of the Laptop

TODO

2.1.3 Rise of the Gaming Laptop

TODO

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TODO

2.3 Application to Modern Day

TODO

Chapter 3

State of the Art

3.1 Introduction

TODO

3.2 Hardware Solutions

TODO

3.2.1 Thin Clients

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3.2.2 Web Clients

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3.3.1 Remote Desktop Protocol

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TODO

3.3.3 Chrome Remote Desktop

TODO

3.3.4 Secure Shell Protocol

TODO

Chapter 4

Developing the Hardware

4.1 Requirements

TODO

4.1.1 Performance

TODO

4.1.2 Cost

TODO

4.2 Choosing Parts

TODO

4.3 Prototyping

TODO

4.4 Designing the Printed Circuit Board

TODO

4.5 Manufacturing the Circuit Board

TODO

Chapter 5

Developing the Software

5.1 Requirements

TODO

5.2 Potential Avenues

TODO

5.2.1 NVIDIA GameStream

TODO

5.2.2 Moonlight

TODO

5.3 Developing for ARM

TODO

Chapter 6

Evaluation

6.1 Testing Methodology

TODO

6.2 Responsivity and Latency

TODO

6.3 Performance

TODO

6.4 Quality

TODO

6.5 Summary

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Chapter 7

Conclusion

7.1 Summary

TODO

7.2 Limitations

TODO

7.3 Future Research

TODO

Appendix A

Frequently Asked Questions

A.1 How do I change the colors of links?

The color of links can be changed to your liking using:

```
\hypersetup{urlcolor=red}, or  
\hypersetup{citecolor=green}, or  
\hypersetup{allcolor=blue}.
```

If you want to completely hide the links, you can use:

```
\hypersetup{allcolors=.}, or even better:  
\hypersetup{hidelinks}.
```

If you want to have obvious links in the PDF but not the printed text, use:

```
\hypersetup{colorlinks=false}.
```