

# A permissioned blockchain prototype facilitating banking record interoperability

University of Essex



Anrich Potgieter

August 27, 2022

# Declaration

Test text

# **Abstract**

# **Acknowledgements**

# Contents

<b>1</b>	<b>Introduction</b>	<b>5</b>
<b>2</b>	<b>Background Literature</b>	<b>6</b>
2.1	Defining Blockchain Technology . . . . .	7
2.1.1	Types of Blockchains . . . . .	7
2.1.2	Cryptographic Hashes and Digital Signatures . . . . .	7
2.1.3	Transactions . . . . .	7
2.1.4	Ledgers . . . . .	7
2.1.5	Consensus . . . . .	7
2.1.6	Smart Contracts . . . . .	7
2.2	Organisational Interoperability . . . . .	7
2.3	Facilitating Interoperability using Blockchain Technology . . . . .	7
2.4	Blockchain Technology in Banking Organisations . . . . .	7
2.4.1	Permissioned Blockchain Networks . . . . .	7
2.5	Blockchain Data Storage and Retrieval . . . . .	7
<b>3</b>	<b>Ethical and Professional Considerations</b>	<b>8</b>
<b>4</b>	<b>Evaluation</b>	<b>9</b>
<b>5</b>	<b>Learning</b>	<b>10</b>
<b>6</b>	<b>Conclusion</b>	<b>11</b>
<b>A</b>	<b>Appendices</b>	<b>12</b>

# **Chapter 1**

## **Introduction**



# **Chapter 2**

## **Background Literature**

### **2.1 Defining Blockchain Technology**

#### **2.1.1 Types of Blockchains**

**Permissionless**

**Permissioned**

#### **2.1.2 Cryptographic Hashes and Digital Signatures**

#### **2.1.3 Transactions**

#### **2.1.4 Ledgers**

#### **2.1.5 Consensus**

#### **2.1.6 Smart Contracts**

### **2.2 Organisational Interoperability**

### **2.3 Facilitating Interoperability using Blockchain Technology**

### **2.4 Blockchain Technology in Banking Organisations**

#### **2.4.1 Permissioned Blockchain Networks<sup>7</sup>**

#### **2.5 Blockchain Data Structures and Data Interoperability**



## **Chapter 3**

# **Ethical and Professional Considerations**

## **Chapter 4**

### **Evaluation**

# **Chapter 5**

## **Learning**

## **Chapter 6**

## **Conclusion**

# **Appendix A**

## **Appendices**