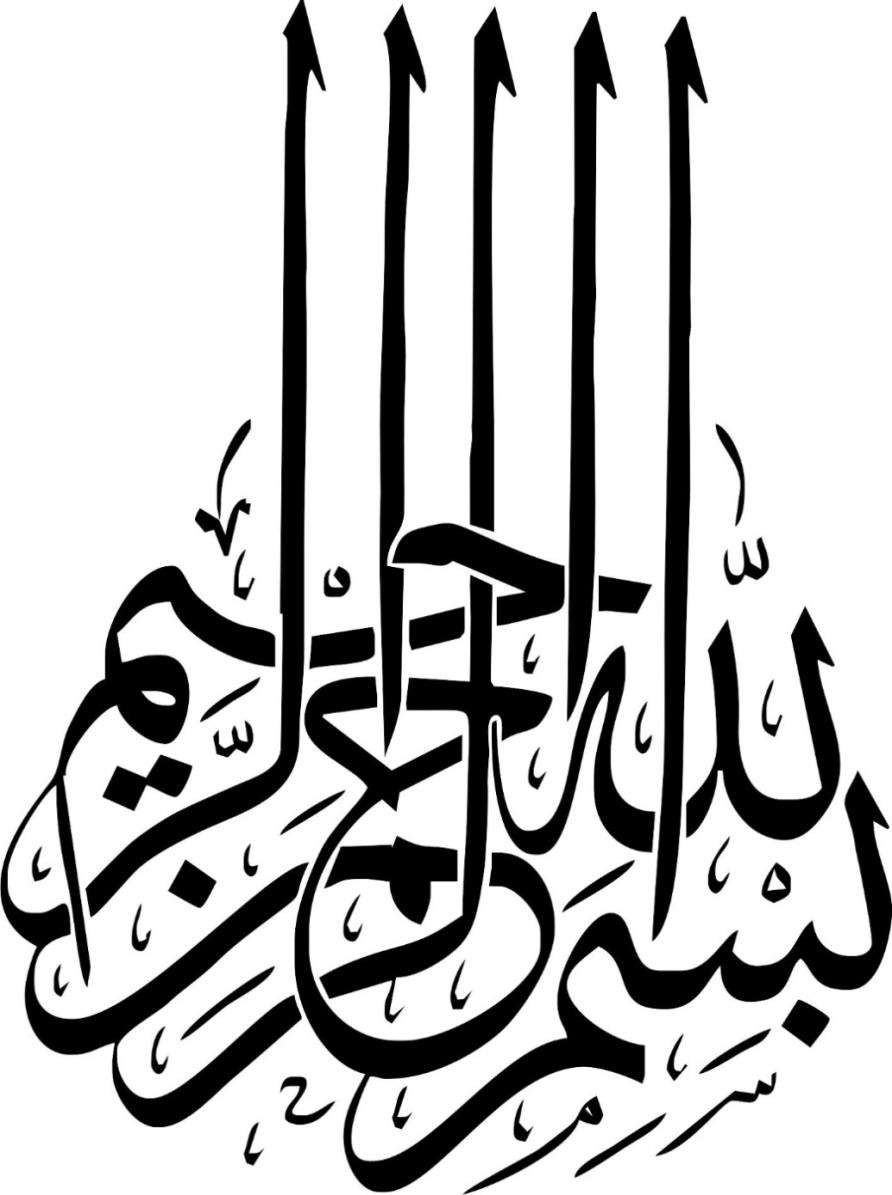
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Monograph Title (security intelligence in an example vehicle management system)



Acknowledgment

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Abstract

Chapter one

Introduction

In today's world, the issue of security among the people is very important. Security is not endangered or is protected from danger, and providing security for the people can be said to be challenging and with the increase in crime and fraud in the field. Has caused harm to the people of the society. It is better for a society whose dangers are on the same side with the people. We should also try to reduce its problems. Of course, in today's world, with the advancement of technology, these problems can be reduced with the advancement of technology. There are ready-made ways to create security that can be used to create better security. QR codes are a technology that has been created in this field. In fact, QR codes store information about a product or a person in a machine-readable format that can be easily used and can be scanned with a scanner or smartphones. Appearance and received relevant information from it. In fact, this technology is used in many places, for example: for many manufacturing jobs; Orders and information and security can be mentioned. I also tried to use this technology for risks due to security issues, and in this research, I examine the QR codes in the vehicle management system.

Table of figures

Table of table

Motivation

In today's world, security is one of the most fundamental issues that is considered in every part of life and special attention is paid to it. Security has different types and is divided into many forms, and one of these types of security issues; Information security is one that the world has paid special attention to today. Due to its importance in today's world and especially in our society, this article deals with security in the vehicle management system, which aims to create security and study it in a park where security can be created.

The importance of research

Today, everyone is familiar with QR codes and bar codes. Both QR codes and bar codes store information about an item or product in a machine-readable format that can be easily scanned or, more recently, by smartphones. They are scans that can be used in different parts. For many manufacturing businesses, tracking inventory and orders on every list is a high priority especially in physical inventory management. As a result, there are many reasons to stick the label on the item for use in inventory or even production. For example, customers can know where their order is on the assembly line and when it should be in their hands. Most importantly, customers can use tracking data to find bottlenecks and other problems. This information can also be useful for the organization. In addition to being used in security, they can also be used to send instant messages, social media, Provide emails and text messages.

In addition, you name it. And QR codes can trigger actions on smartphones, such as launching a payment and payment program, adding a contact, or following a malicious social media account. They can also reveal the location of the victim or add a malicious Wi-Fi network. QR codes are also often seen in social engineering attacks. QR codes can now be used to pay for various goods and services, where the user simply scans the QR program code with their banking program. Of course, there are many issues about these that I will address in this study in the example of the vehicle management system.

Research objective

Research problem

Method logy

# Second Chapter

In today's world, the issue of security is very important and they use it in every part according to their lament, which we will fill in this chapter according to the topics mentioned in the first chapter about security and its application.

## Security Definition

security is: not being at risk or being protected from danger security also includes: freedom from doubt, freedom from anxiety and fear, and having justified and documented trust security, whether individual, national or international, is one of the issues that human beings face security is broadly used in a sense that refers to peace, freedom, trust, health, and other conditions in which an individual or group of people feels free from anxiety, fear, danger, or threats from within or without have.

### Security History

Ever since writing and exchanging information began all human beings, especially heads of government and military commanders, have sought solutions to protect the privacy of schools and to identify manipulations “Julius Caesar created a school cryptography system 50 BC to prevent secret messages from being read the Second world war led to significant advances in information security and the beginning of a professional career in information security the end of the twentieth century and the early years of the twenty-first century witnessed there were rapid advances in hardware and software telecommunications and data encryption” smaller computing equipment was available, more powerful and cheaper electronic data processing.

It gave small businesses and home users more access to them these devices were quickly connected via computer networks. With the rapid growth and widespread use of electronic data processing and electronic business via the internet with the emergence of many international malfunctions the need for better methods of protecting the computer and its information became academic disciplines such as computer security, Information security, it turned out that their goal was to establish security in the intelligence sector.

## Security Types

According to the simple definition of security that was done above, security can have different types. with the advancement of science and technology in the field of security, changes have been made and with the creation of different types of issues in the security sector, so, we can say that in the era today, various types of security, from political issues to computer network security, security in information systems, database security and information security are included, so security is of particular importance. We will first look at the history of security and then introduce each of them in this section

### Define information security

Information security means the protection of information and information systems from unauthorized activities these activities, these include: access, use disclosure reading, copy or record and spoil the change by manipulation. The term information security, computer security and information are certainly sometimes misused. Although these are interrelated issues, they all have a common goal of maintaining information confidentiality, they were integrated and had information, but, there is a subtle difference between them this difference is primarily in the approach to the issue of information security the method used to solve the problem, and the topics they focus on.

#### Information security

Information security integration, confidentiality and availability of relevant data regardless of the form of information including electronic, print or other forms. Computer security was achieved on the way they were assured and the correct operation of a focused computer without worrying about the information stored or processed by this computer. governments, military centers, companies, financial institutions, hospitals and private businesses have a lot of confidential information about customers, staff, products, gather research and financial status much of this information is now collected on computers, they are processed and stored and transferred to other computers. If this confidential information falls into the hands of a competitor, this disclosure may result in financial loss to the business, Prosecute or even lead to bankruptcy. So, protecting this information is very important and today the issue of security is one of the basic issues.

#### Information security concepts

As stated in the definition of information security, information security has three main concepts, and here we will examine these three concepts of information security.

#### Confidentiality

As defined, confidentiality means preventing the disclosure of information to unauthorized persons. For example: to buy with credit cards online, you need to send the credit card number from the buyer to the seller and then to the transaction processing centers. In this case, the card number and other information related to the buyer and his credit card should not be given to unauthorized persons this information must be kept confidential. In this case about keeping information confidential, the card number is encrypted and during the transfer or where it may be stored, it remains encrypted and access is restricted If an unauthorized person accesses it, a breach of confidentiality has occurred.

#### Being one piece

They were one piece, meaning preventing unauthorized data change and identifying change in the event of unauthorized manipulation of information. Integrity is violated when information must be altered not only during transmission but also during unauthorized use, storage or destruction. Information security, in addition to being confidential, must also be integrated.

#### Availability

Information must be available by authorized persons at the required time. This means ensuring that the stored information is corrected and prevented, and that the information process and communication channel used to access the information are processed.

#### Used security

The security debate has grown significantly in recent years and has evolved. There are many ways to enter this field and security is used in different parts of the world today. In fact, in today's world not every issue has security without meaning so, the use of security is very important. In different areas from political issues to issues such as: information, Databases include security and its wide application can be seen.

##### Security benefits

As mentioned above, security is very important in today's world, so it can have many benefits. Some of which are mentioned below.

##### Access control

Access control must be restricted for security and authorized people should and unauthorized people should not have access to information there are different mechanisms for creating this access control, each of which can be used in its respective sections. For this, security cases can be used.

##### Controlling security information

Using security tools, it is also possible to control the information, which can help in different parts of the information and keep the information related to different parts safe.

##### Maintaining information

Protection means staying safe from accessing information to others. For years, organizations and large companies have tried to keep themselves active in this sector and in this sector have used the technologies and technologies that have been created in the science of technology.

# Chapter three

In this chapter, in view of the topics discussed in the second lecture on security, we will discuss

the burden of codes and QR codes, which can be considered as topics in the field of information

Security.

Definition of Bar code

A group of black bars or lines that are printed on a white background for better readability and store information about a particular product is a barcode, but scientifically a barcode is a tool to convey specific information with a barcode. Use light waves. This is done by a group of bars with different widths and in parallel with each other, and the dimensions of each bar have a special and different meaning for the barcode reader.

History of Bar code

Understanding the origins of barcode history leads to the importance and attention to the growing trend of this system in today's world, but the barcode was first studied about 60 years ago by two graduate students, they are a symbol in a white space; Invented with black and white lines to provide information about a product during settlement and exit, and first patented the first barcode in 1952, and it was in 1973 that the technology entered The industry became a business and then received special attention until it was in 1974 that the first barcode reader was tested in Ohio and the barcode scanner industry was born, but with the advancement of technology, this technology entered other industries and these industries began to follow. They became of this technology this technology grew exponentially. Automotive-related industries as well as airports also used barcodes to track passengers' luggage and organize logistics. Found today, however, the barcode industry is still discovering new ways to improve businesses. Forty years ago, the first linear barcode scanner was printed and scanned for a chewing gum pack. Today's devices are much faster and more efficient than that model. Today's models allow bar code scanners so that cashiers can spend less time serving customers.

What is the purpose of using bar code?

Barcodes and other legible labels are used where information needs to be read or processed by a computer, and users place only the barcode in front of the barcode reader instead of typing long

Strings of data they give and processing is done completely automatically without the need for manpower. Barcode is therefore a method of automatic identification and identification of data

The digit produced by the barcode generally indicates a specific product. System parking also works in reverse, i.e. it is able to receive the desired barcode by receiving a figure related to a

Product Create and in fact a kind of self-identification is done. Other purposes of using a barcode

Include the following Infallibility due to the reduction of manpower interference in the manual

Entry of information; accurate classification of information on The basis of various characteristics; high speed in data collection with 100% accuracy; Easy access to information Real and real which is one of the goals of code load.

Type of bar codes

Barcodes have types and types, however, all barcodes can be divided into three categories

- Numeric barcodes

-Numerical - alphabetical barcodes

- Two-dimensional barcodes

As the name implies, numeric barcodes; Bar are codes that consist of numbers and digits

Barcodes Numerical - alphabetical; composed of number and alphabet, these two types of barcodes are also called one-dimensional barcodes they know that the third type is two-dimensional code, which is square or rectangular with small dots there are many that are arranged and created according to a specific pattern. The main advantage of two-dimensional barcodes is that they hold a large amount of information in a very small space, and even though they are engraved with very small dimensions, they are still legible cades , which we will discuss later in the they keep to themselves that one of these barcode is QR chapter.

## Definition of QR code

Nowadays, you are familiar with QR codes you can see signs of them everywhere, so we

will get acquainted with them first. the quick response code series is a code that can be read quickly

by mobile, from this the word "fast" is used in its name. These codes include black squares

Arranged in a square grid on a white background. Next) that convey a lot of information to the

Audience during the scan. During the scan, the patterns in it are extracted. Which are located in

Both horizontal and vertical components of the image. QR codes cover a wide range of

Applications in a variety of industries.

## 

## History of QR code

Life before QR Code and Bar Code took a different form, as with the development of many

Technologies, two-dimensional barcodes were created out of necessity. QR codes are a

Type of code load. Code load for product management, warehousing, accelerate

Sales and reduce errors for supermarkets. With the advancement of technology and technology,

Barcodes gave way to QR code a few decades after the invention of bar code, QR code system in 1994 by, Masahiro invented by the Japanese company Denso Wave.

Its purpose was to track vehicles at the time of construction. But now QR codes may be used to

Display add text to the user's vCard, open URL, and connect to wireless networks

or use writing emails or even text messages. That now this two-dimensional code has

Become one of the most widely used tools in the world today.

### The difference between QR CODE and bar code

In general, QR and Bar code codes are similar, but QR codes contain more information because

They have the ability they store information vertically and horizontally and can store about 7089 pieces of information representatives. But, One-dimensional codes or bar codes of about 30

Can store information in themselves and can only store information horizontally but this does not mean that QR codes should be used instead of one-dimensional barcodes. Load codes for

Situations such as supermarkets transfer information at high-speed QR while they

Can transmit a lot of information with a higher volume. And that's probably what makes

Them so, popular the reason is more adaptability

## Who Invented the QR Code?

Due to the increasing demand for technology improvement and reducing the workload of

Cashiers, the Supermarkets, the system created was originally a newborn version of barcodes

That items allowed computers to scan individual to register. despite all this, the needs were not met and the efforts were still not enough because the supermarkets faced a new obstacle. terry has

Encountered the missing barcode that could store about 20 numeric alphabets and work with one dimension or (one coding direction).

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Meeting the needs led to the contact with the inventor and developer of this system Masahiro

Hara and DENSO WAVE to look for a way to create more variety and store more information

by preparing a 2D code. The inventor of QR codes, having only two team members, initially

Conceived his idea, which was encoded using information.

The form was horizontal and vertical, in addition to inserting more information, speed ​​up reading this information as well Increased (up to 10 times faster than a barcode) to work these benefits

Led to QR code at an incredible speed in Let the world expand.

### How does QR code work

A modern QR Code consists of 7 parts? Each of these parts creates a pixel pattern that looks like

Is a crossword puzzle. Each element has a specific purpose that transmits specific information

Through code such as print, scheduling, fault tolerance, and spaces to distinguish code from what is enclosed in it.

#### Advantage of QR code

Stores large amounts of data

Scalable on paper and monitor

If part of the code is damaged, it can be scanned

Extremely high security because its information is encrypted

#### What are the uses of QR codes?

In today's world, with the advancement of science and technology, the use of QR codes has increased and in many cases, it is used, some of which are discussed below.

#### Virtual stores

In many developed countries, QR codes have been used to create virtual stores, where product information galleries and QR codes are provided to the customer, for example on a train station

Wall. Customers scan QR and products are delivered to their homes. Use has begun in South

Korea and has now increased globally.

#### Business card and social networks:

One of the most important uses of these codes is in business cards. That this application can be

Very useful, for example, when you are in a public place and you have to talk to many people in

A short time. It is very helpful because you can use QR codes even without printing a business

Card upload business card information directly to your smartphone via vCard Plus QR code.

#### Electronic deposits

QR codes can be used to store bank account or credit card information or you can

Designed specifically for work on paid visa application programs. Several training programs

around the world they are available for QR code filling and are currently being developed in

Most countries around the world.

#### Product packaging

Many people are familiar with supermarket product codes for scanning, but now they can be

displayed to provide more information to consumers. For example, if you have a seasonal produc-t such as summer, you can order using the PDF QR code stick a special reaction to that product so, that it does not detract from the packaging design product packaging and adding QR codes on

Social media can attract more customers.

#### Login to websites

QR codes can also be used to access websites. When it scans the QR code with its phone, it

Automatically logs in and the authentication is done by a smartphone,” which is then done by

Authentication is done through a smartphone that contacts the server google in 2012 such

Tested the input methods”

#### For health care

One way to ensure the best possible care is provided by the medical staff, provide suggestions to patients to fill out feedback surveys. Doing so can be frustrating at first. Especially if the patient

Dissatisfied status. In this case, you can allow patients to comment using the QR

Code fill out the test at the right time.

This can be easily combined with the online day system, which can be done automatically after

The patient appointment to be sent.

#### Gym

Probably a lot of billboard photos and ads while crossing the streets at a discount.

Gyms have seen the use of these ads and quick access to these discounts is easily accessible by

Adding the QR code coupon directly to the graphics. That by scanning QR code customers can

Easily register there and access it by referring the QR code to a specific link and you can use it

To register in gyms.

##### Types of QR code

Because of the many different types of 2D barcodes or QR codes that exist today. Here are some

Examples of the most popular ones.

##### Micro QR code

Micro QR codes are codes that are much smaller than other QR codes and can take up space Occupy less and be used in a smaller space. For this reason, Micro codes are more widely used.

But, they are more limited than regular QR codes and store less information.

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##### IQR

IQR codes instead of the usual QR code, use a rectangular shape. Because of this shape,

IQR codes can hold smaller and larger amounts of data than traditional and Micro QR.

Keep.



##### Frame QR

QR frame codes were developed and developed in 2014 to create more creativity in the

The appearance of QR codes this type of QR code has a wide range of features, including color,

Shape, type display logos, and other items.



##### SQR

SQR codes have a limiting function to read that can be used to store private information or

Manage a company's internal information. the appearance of these QR codes is no different from

Normal but can be data carry public and private data. Private data only by a dedicated reader

With an encryption key is readable from data versus protect other people. One of the advantages

Of this type of two-dimensional barcode is that it looks similar to a regular QR code

So, it can prevent tampering.



###### **Future QR codes**

In recent years in Europe and the US, QR codes have been increasingly used in websites, products, and advertising posters but most people around the world now have unique QR codes for

Their e-wallets at most developed payment methods in stores are done with chips or without NFC

Contact advances in technology and the use of cash to pay have declined dramatically in recent

Years by early 2020, coronavirus restrictions were applied worldwide, and “QR code payments

Became very effective.

But, keep in mind that payment using the QR code method is slower than the non-contact NFC

Method is. Because most countries around the world are trying to invest more in NFC

Technology or contactless payment. However, today users are looking for secure ways to pay

Remotely, according to statistics released in 2020, many users have used the QR code to pay”.

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Chapter four