



It identifies a user and prepares

OR

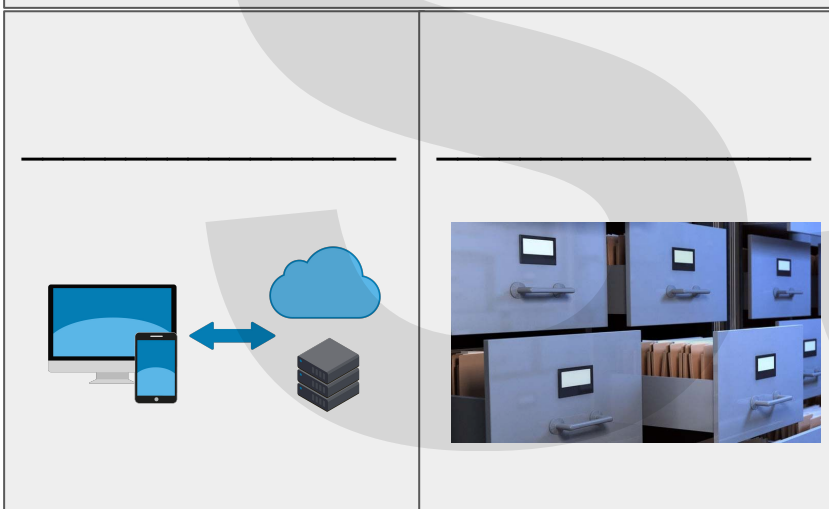
Key security threat types

Hacking

Interception

Data theft

Data



Prevention methods

Passwords



Compression

_____ compression results in reduction of data quality following compression

_____ compression results in no loss of data quality following compression

Compression ratio= _____



_____ =
Detects and blocks attacks by

_____ scanning all files

_____ =
Blocks programs accessing the Internet and



Other protection methods:

1=

2=

3=

Think about...



Ways to identify vulnerabilities

| | |
|-------------|--|
| Malware | Describes software used to _____ |
| IP spoofing | Is an _____ of a user, device or client on the Internet. It's often used during a cyberattack to _____ |



_____ is a method of interrogating resources on the Internet for information about systems, looking to discover what a potential attacker can also discover without an organisation's knowledge

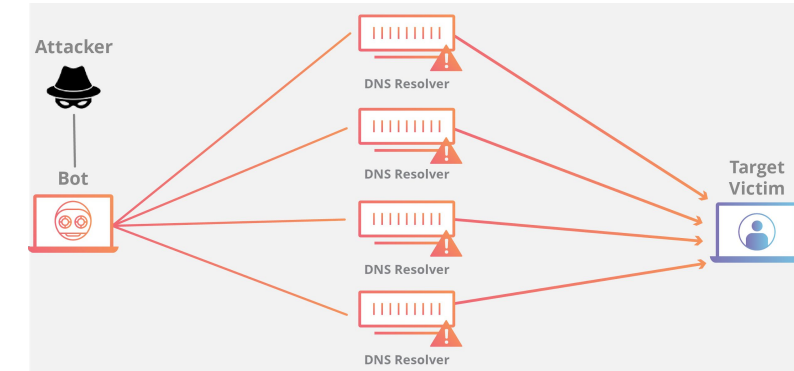
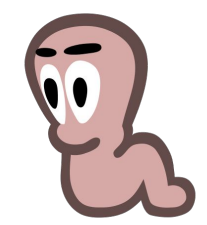
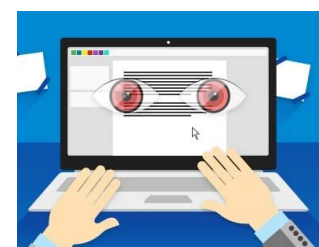
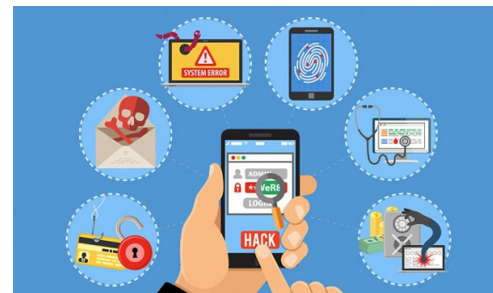
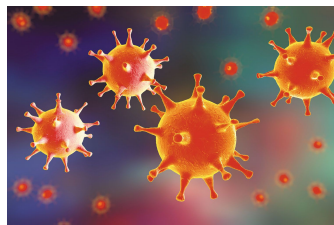
Protecting software during design, creation and testing

- 1. Buffer overflows
- 1. _____
- 2. Scripting restrictions
- 1. Accepting parameter without _____

Penetration testing Attempting to penetrate a system's _____ in order to demonstrate security risks.

Threats

| | | | | | | |
|---|--|--|---|--|--|--|
| A _____ Is similar to a virus but is a <u>standalone program that replicates itself in order to spread to other computers</u> . It does not need a vector. | SQL injection is <u>the placement of malicious code in SQL statements, via web page input</u> . SQL injection usually occurs when you ask a user for input and an SQL statement that you will unknowingly run on your database. | The attacker usually sends excessive messages asking the network or server to authenticate requests that have invalid return addresses. Its aim is to temporarily disrupt services and keep a server busy. | A virus is a computer program that <u>is able to copy itself onto other programs often with the intention of maliciously damaging data</u> . A virus is transmitted by 'piggybacking' on another program known as a 'vector'. | _____ are covert programs that <u>capture keyboard (or other input device) input and transmit this data to a third party or hold the data for collection</u> . | A method of stealing personal information by getting people to click on a link in an email that downloads malware on to a device. Common examples include bank emails, prize giveaways or access to a resource | Social engineering is the act of tricking someone into divulging information or taking action, usually through technology. The idea behind social engineering is to take advantage of a potential victim's natural tendencies and emotional reactions. |
|---|--|--|---|--|--|--|



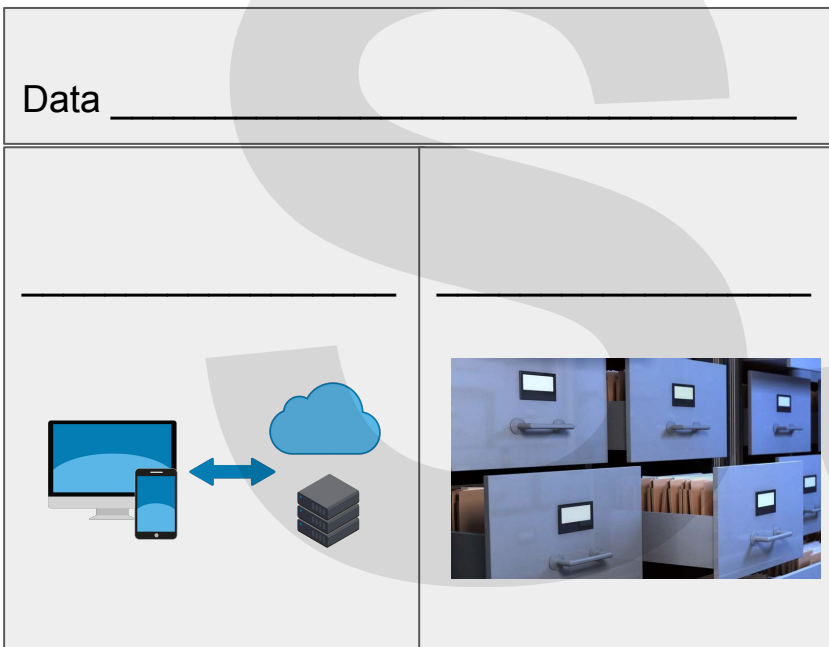


Key security threat types

Hacking

Interception

Data theft



Anti virus will _____



Firewall =

Blocks _____ and _____



Prevention methods

Passwords



Other protection methods:

1=

2=

3=

Internet cookies

Is a small piece of _____ that is given by a _____ to a _____



- _____ to save login information
- They hold personal information and this can be _____ or _____ and tracking cookies can hold information on the websites visited by users

Compression

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Compression ratio=



BM

2FA

U

PS

Ways to identify vulnerabilities

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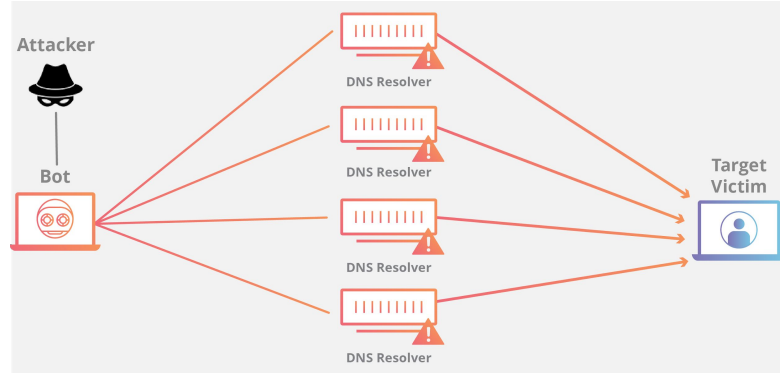
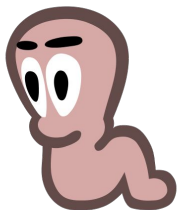
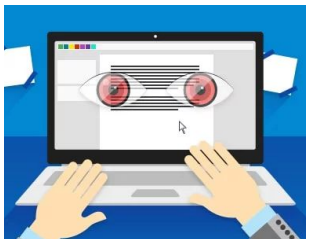
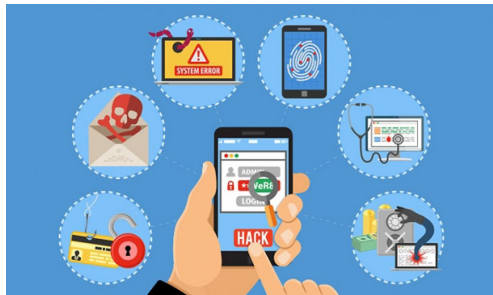
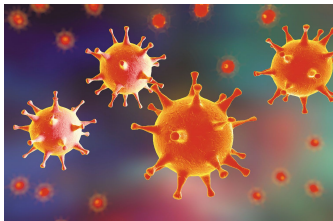
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|--|---|---|---|--|--|--|



Cyber security is essential in the protection against different types of malware.

(a) Describe **two** methods of protection against the use of key loggers. [4]

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(b) Describe **two** characteristics of a computer virus. [2]

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A lossy algorithm is used to compress a sound file whose original file size was 540 KB.

(i) Describe how a lossy algorithm would compress the sound file. [2]

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(ii) Following compression, the sound file size is reduced to 54 KB. Calculate the compression ratio. [2]

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(b) A virus checker aims to prevent malicious damage. Identify **three** typical functions carried out by this software. [3]

Function 1

Function 2

Function 3

(c) State the role of a firewall. [1]

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(d) Identify **three** typical functions of a firewall. [3]

Function 1

Function 2

Function 3

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