

M1 Midterm Exam – Short

01. Safe use of Information Technology

Information technology is technology that helps people communicate and share information. If we are not careful or we do not understand how to use the technology it might affect us or our friends.

Common Online Threats

- **Malware** – harmful software
 - o **Computer Virus** – malicious software that can harm data or systems
 - o **Worms** – malicious programs that can spread to other computers in the network on their own and cause damage to data and servers
 - o **Trojan Horse** – A program that looks like a common program to trick users into installing and running
- **Phishing** – a scammer pretends to be someone you trust to trick you into giving away important information
- **Password theft** – someone tries to steal your password
- **Online scam** – Tricks to steal money/accounts
- **Harmful content** – Unsafe or inappropriate content

Threat Prevention & Passwords

We use **passwords** to protect our account and our information. Weak passwords mean someone can easily guess it and take our information, that is why we need to always make strong passwords.

Steps for making a strong password:

- Length minimum 8 characters
- Use special symbols - @!.,*()#\$%
- Include numbers – 0,1,...8,9
- Mixed uppercase and lowercase letters (a-z, A-Z)

Two-Factor Authentication (2FA) – is an extra step protection for our account. It is a verification using a one-time password (OTP) sent to a phone or email

Use of Information Technology

To understand how every application and program works we need to read the **Terms and Conditions**

Copyright – creators own their work and only they can use it

Creative commons – Some creators allow people to use their work for free, but they still own it.

02. Data and Processing

Data and Information

Information is data that has meaning and is useful.

Data is raw facts, numbers, words, images and sounds that have no meaning. It is divided into two groups

- **Quantitative data** – data in form of numbers
- **Qualitative data** – data in form of text

A **source** of data is a place where we get our data. The source can be anything, for example people, animals, things, places, events...

The data can be categorized by the source where we have obtained it:

- **Primary data** – it is original data, you have collected the data yourself
- **Secondary data** – it is a copy of original data, someone has already collected it

Data collection is a way of how we find our data. There are many different ways of collecting data. Some of the methods of collecting data are:

- **Interview** – ask one person or a small group question and listen to their answers
- **Survey** – ask the same questions to many people at same time
- **Observation** – watch carefully and record what you see
- **Experiment** – test something and record the result
- **Document Review** – collect data from existing documents
- **Census** – collect data from every member of a population or group

When we collect information our information and sources need to be correct and they need to meet the following requirements:

- **Accuracy** – the data that we have collected has to be true and correct
- **Timeliness** – the data needs to be up to date (newest data)
- **Relevance** – the data matches our purpose/needs

Data processing means changing data into useful information. There are two types of processing:

- **Hand processing** – we use paper, pens and human force to process the data
- **Tool processing** – we use tools such as typewriters, calculators, computer... to process the data

Data processing has **3 main components**:

- **Input** – data that we have collected
- **Process** – processing of the data
- **Output** – the result of processing, which can also become input for another process

There are many ways of processing data, we can use one or more of them, depends on the result that we want. The following are some ways of processing data:

1. **Calculate** – means using numbers to get a result
2. **Sort** – means putting data into an order
3. **Analyze** – means looking for meaning or patterns
4. **Summarizing** – means keeping only the main points
5. **Reporting** – means presenting the results