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Exercise Theoretical questions

No questions are allowed, if you have doubts on the theoretical questions fell free to write them on this paper. You have 15 minutes starting from now.

For each sentence, check either the TRUE or the FALSE box.

**TRUE  FALSE  You have written your name above on this paper**

**1 KB**

TRUE  FALSE  can store some pictures in good quality  
TRUE  FALSE  can store a movie in low quality  
TRUE  FALSE  is approximately 1000 TB

TRUE  FALSE  is approximately 1000 MB

**According to Moore’s law**

TRUE  FALSE  the speed of processors doubles every eighteen months  
TRUE  FALSE  the speed of processors doubles every six months  
TRUE  FALSE  the speed of programs doubles every eighteen months

TRUE  FALSE  the speed of programs doubles every six months

**Freeware software**

TRUE  FALSE  is automatically open source  
TRUE  FALSE  can be freely modified

TRUE  FALSE  is costless  
TRUE  FALSE  is tailored to the customer’s needs

**Key DEL / ENTF / CANC**

TRUE  FALSE  is used to delete the previous character in a text  
TRUE  FALSE  is used to delete the next character in a text  
TRUE  FALSE  while selecting a file, if pressed alone it sends the file to the recycle bin  
TRUE  FALSE  while selecting a file, if pressed alone it deletes the file forever

**To move a file to another directory**

TRUE  FALSE  select, press CTRL+**X** and then CTRL+V in the new location

TRUE  FALSE  select, press CTRL+**C** and then CTRL+V in the new location

TRUE  FALSE  drag it while a symbol + appears

TRUE  FALSE  drag it while a symbol + does not appear

**This is a mailreader program**

TRUE  FALSE  Microsoft Outlook

TRUE  FALSE  Mozilla Thunderbird

TRUE  FALSE  Mozilla Firefox

TRUE  FALSE  Google Chrome

**TURN PAGE 🡪**

**When sending an email from a PEC account to another PEC account**

TRUE  FALSE  you have a legal sent proof  
TRUE  FALSE  you have a legal received proof  
TRUE  FALSE  you have a legal read proof  
TRUE  FALSE  it is like sending a “Raccomandata con ricevuta di ritorno”

**The crawler technique used by Google**

TRUE  FALSE  is used to find webpages   
TRUE  FALSE  finds all the pages on the WWW  
TRUE  FALSE  assigns a higher score to webpages which receive many links from other pages  
TRUE  FALSE  assigns a higher score to webpages which contain many links towards other pages

**Google**

TRUE  FALSE  is able to search images

TRUE  FALSE  is able to search for webpages which consist in Excel sheets

TRUE  FALSE  is able to search for webpages containing an exact sequence of words

TRUE  FALSE  is able to search for webpages containing some words but excluding others

**Spammers get your email address**

TRUE  FALSE  generating it automatically, attaching common names, surnames and domains  
TRUE  FALSE  from the emails you write  
TRUE  FALSE  whenever you type it on a forum  
TRUE  FALSE  whenever you type it publicly on Facebook

Exercise Relational databases

You have only 3 sheets of blank paper, do not ask for extra ones. You have 35 minutes starting from now.

Draw the schema of this database, using at least (more if necessary): 3 tables, a junction table, 15 fields in the entire database. Try to make the database as complete as possible, keeping it simple and not contorted. You must indicate very clearly field names, Access field types, primary keys, relations with their “1” and “many” sides and the fields involved in the relations, required fields, indexed fields, at least two validation rules. For all the fields whose name is not obvious, you must also include a small comment that lets everybody understand what the field should contain. You must also justify non-standard choices.  
Moreover, suggest two new queries (in English, not in Access nor in SQL): one that involves at least two tables and is not a summary query and another one that needs a summary query to be implemented.

**Parking machines**: this temporal database handles the parking machines’ system of a town. The town is divided into areas, each one with its own two parking rates, one for the day and another one for the night. Each area has several parking machines, which sell parking tickets to anonymous car drivers. The entire system is fully connected to a central database which keeps track of everything. A group of technicians is in charge of maintenance of the machines and the database must keep track also of these maintenance activities. The database must be able to answer the question “How much money have we gained from machine number 745 since its last maintenance intervention?”.

