Information Systems and Data Management exam

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Surname \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Number:\_\_\_\_\_\_\_   
**(write them now!!!)**

You have only one paper. No questions are allowed, if you have doubts fell free to write them on this paper.  
You have 45 minutes starting from now.

## Exercise Relational databases

Draw the architecture of this database, using at least (more if necessary): 2 tables, a junction table, 5 fields per table. Try to make the database as complete as possible, keeping it simple and not contorted. You must indicate very clearly field names, field types (numeric, text, memo, date, yes/no), primary keys, relations with their “1” and “many” sides and the fields involved in the relations, required fields. 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 a new query which involves at least two tables and suggest another new query which needs a summary query to be implemented.

**Airline company:** this static database handles information about flights and airplanes of an airline company. The goal is to keep track of the specific airplane used in a specific flight (a flight has a day of the week, times, destination, arrival and it is repeated in the same way with the same airplane every week). Each airplane is identified by a code and has a purchase date, a model and manufacturer. The company owns several airplanes of different models and for each model the technical details (number of seat, maximum flight length, maximum speed) has to be stored. The database should be able to answer the question "What is the average number of seats of airplanes which depart from Rome?".

## Exercise Theoretical questions

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

**~~This is hardware:~~**

~~TRUE  FALSE  SSD  
TRUE  FALSE  operative system  
TRUE  FALSE  printer  
TRUE  FALSE  processor~~

**~~Using a mailreader with a Gmail account:~~**~~TRUE  FALSE  you need to authenticate to download your emails  
TRUE  FALSE  you need to authenticate to send your emails  
TRUE  FALSE  you may not send your emails using Gmail when connected through your home provider (non Gmail)  
TRUE  FALSE  you may not download your emails when connected through your home provider (non Gmail)~~

**Commercial software**

TRUE  FALSE  is always open source

TRUE  FALSE  is distributed freely on the producer’s website

TRUE  FALSE  must usually be paid only after having evaluated it for a period of time

TRUE  FALSE  is designed specifically for the customer’s needs

**Digital signature**

TRUE  FALSE  uses encryption

TRUE  FALSE  requires a scanning of the handwritten signature

TRUE  FALSE  guarantees author’s identity

**~~Localhost is:~~**~~TRUE  FALSE  the starting page for my webbrowser  
TRUE  FALSE  0.0.0.0~~

~~TRUE  FALSE  the computer which I am using now  
TRUE  FALSE  10.0.0.1~~

~~TRUE  FALSE  127.0.0.1  
TRUE  FALSE  the gateway which I use to connect to the Internet~~

**~~World Wide Web~~**

~~TRUE  FALSE  is the same as WWW  
TRUE  FALSE  is the same as Intranet~~

~~TRUE  FALSE  is the same as Internet~~

~~TRUE  FALSE  is the same as VPN~~

**With only “read” permission on a file, you may:**

TRUE  FALSE  open it

TRUE  FALSE  delete it

TRUE  FALSE  copy it to another directory

TRUE  FALSE  duplicate it to the same directory with a new name

TRUE  FALSE  rename it

**An email from a not PEC account to a PEC account**TRUE  FALSE  always guarantees the sender’s identity to the receiver  
TRUE  FALSE  always guarantees that email’s text has not been counterfeited   
TRUE  FALSE  always gives back a receipt’s proof if the email has been received   
TRUE  FALSE  always gives back a sent’s proof   
  
**Spyware virus**

TRUE  FALSE  checks what passes through your Internet connection

TRUE  FALSE  can be avoided using digital signature

TRUE  FALSE  let other users enter your computer opening a port

TRUE  FALSE  it is only effective against ADSL lines

**A virus may arrive:**

TRUE  FALSE  on a USB pendrive

TRUE  FALSE  on a CD inserted in the CD reader

TRUE  FALSE  on a DVD inserted in the DVD writer

TRUE  FALSE  inside an email’s attachment

**A file absolute path is C:\Programs\Winzip\file.exe**

TRUE  FALSE  the file is an image

TRUE  FALSE  the file may be executed

TRUE  FALSE  the file is written on hard disk C

**This is a video extension:**

TRUE  FALSE  .doc

TRUE  FALSE  .jpeg

TRUE  FALSE  .avi

TRUE  FALSE  .com

TRUE  FALSE  .exe

**It is a good idea to include this in a backup:**

TRUE  FALSE  my vacation pictures  
TRUE  FALSE  my emails  
TRUE  FALSE  my address book

TRUE  FALSE  my antivirus program