Exercise 8: Data safety and security

At the end of this exercise you should be able to:

    a. Backup and encrypt a data file on an external medium.

Nothing should be more valuable to you than the safety of your data. Unfortunately, people often learn that they should have backed up their data only once they have made the painful experience of having lost them.

EpiData Entry can be very helpful and forcing you to back up your data when you close a file. Whether you back up your data to your hard drive (not a good idea in case of hard drive failure) or an external medium, an additional concern is data security. Let's assume you back up your data to a USB flash memory stick and subsequently you lose it. Anybody who finds your stick can look at your data. Perhaps your data contain confidential information that should not be readable by anybody who is not authorized.

EpiData Entry offers password-only accessible encryption that cannot be broken without knowing the password you used for encrypting them. We will make a simple EpiData Entry triplet to show how to back up your data with and without encryption to an external medium.

We will use the following simple dataset of the EpiData promoters:

Name	First Name	Country
Rieder	Hans L	Switzerland
Chiang	Chen-Yuan	Taiwan
Hinderaker	Sven Gudmund	Norway
Katamba	Achilles	Uganda
Kumar	Ajay	India
Tun	Zaw Myo	Myanmar
Nguyen	Binh Hoa	Vietnam
Zwahlen	Marcel	Switzerland

Our `A_EX08.QES` will look as follows:

```
Questionnaire for back-up data

name      <AAAAAAAAAAAAAAA>
firstname <AAAAAAAAAAAAAAA>
country   <AAAAAAAAAAAAAAA>
```

Make a `REC` file and a Check file. In the `A_EX08.CHK` file make all fields `MUSTENTER` fields, and then open the Check file which should look as follows:

```
name
   MUSTENTER
END

firstname
   MUSTENTER
END

country
   MUSTENTER
END
```

Backing up and encrypting your file

We will first demonstrate the menu option for doing this and then how it can be written down as a command in the CHK file.

Let us say, we want to back-up our course folder (C:\epidata_course). Go to Tools in the menu bar and click Create Archive
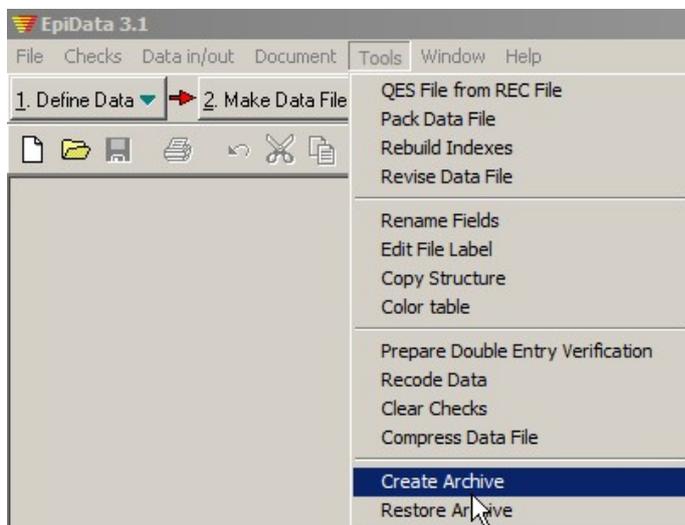
Browse and choose the appropriate directory to be archived.

Tick the options appropriately as preferred. We tick the options "All files in the directory" and "Include subdirectories".

Browse and choose a location where you want to archive

Tick Encrypt and provide a password.

Note the naming which ends with date when this was archived and the extension .ZKY indicating that this is an encrypted file.
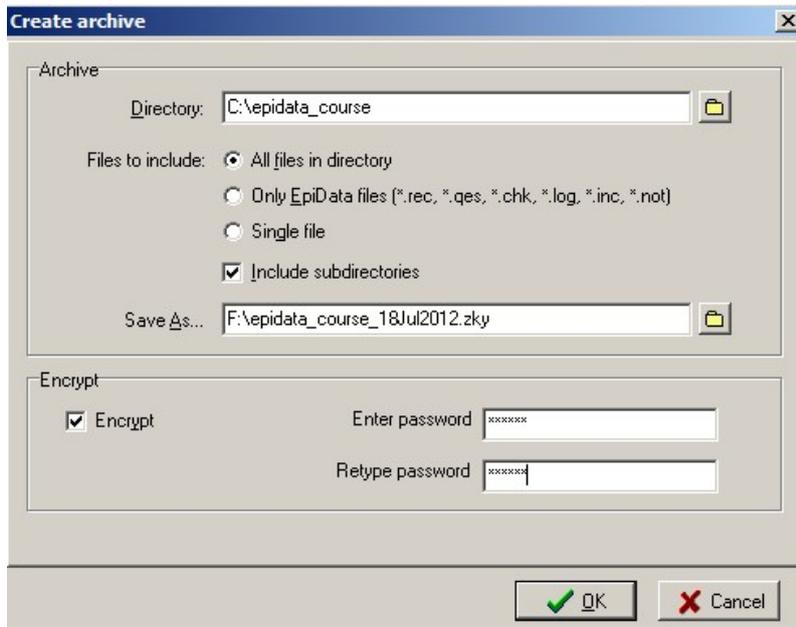
Re-Opening your back-up file

In "Tools" you find "Restore archive" and you are prompted to provide the path and name of your archived and encrypted file, to enter your password, and to provide the path where to restore it, with the option to overwrite any existing files. (Examine the following screen shots)
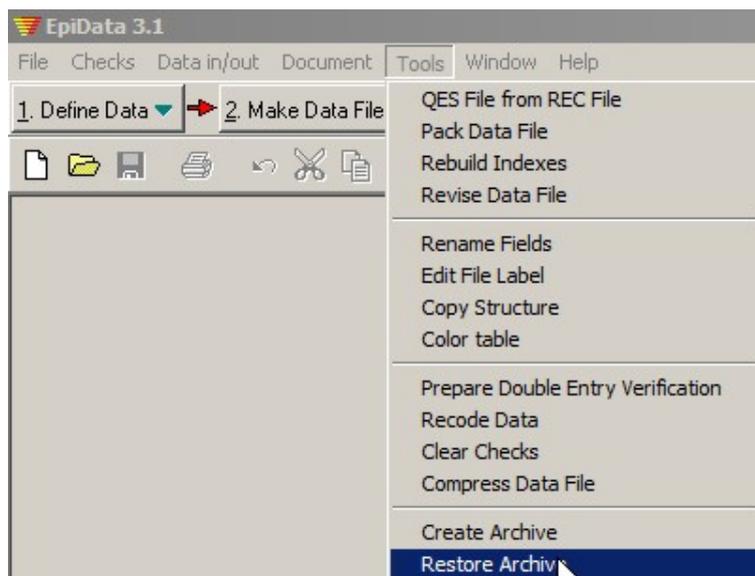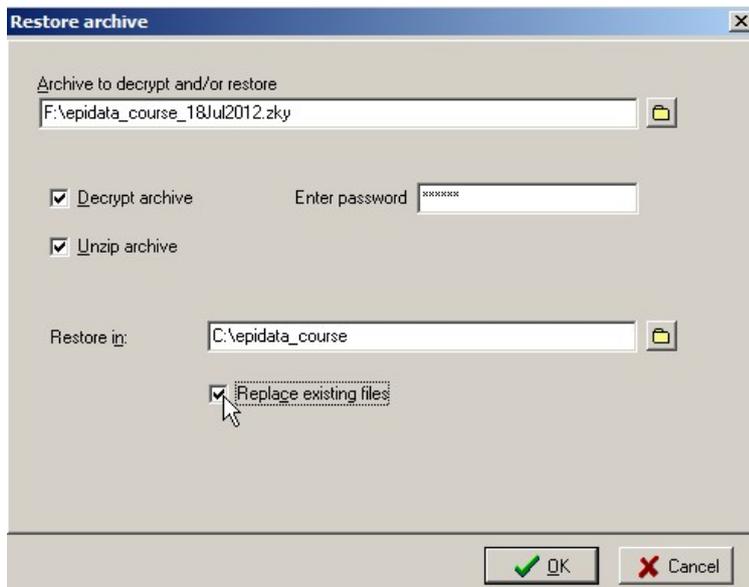
Let us now look at the `CHK` commands which can do the above steps. Assume that your external back-up device takes drive `E:` and has a folder named `PROJECT` on the drive. The command we add in the check file is then:

```
name
   MUSTENTER
END

firstname
   MUSTENTER
END

country
   MUSTENTER
END

AFTER FILE
   BACKUP e:\project ENCRYPT filename mypassword TODAY
END
```

Note that we have used two commands above.

The command `BACKUP` archives your EpiData triplet in the indicated folder. The `E:\PROJECT` is the folder on the drive of your memory stick which you must have created beforehand.

The command `ENCRYPT` helps to encrypt the data and pass-word protect the file. `FILENAME` is the name of the encrypted file and should best be what it is now, i.e. `A_EX08` and "`mypassword`" is a personally chosen password.

The back-up file will have the name `A_EX08.ZKY` and will contain not only the `REC` file but the entire `QES-REC-CHK` triplet.

Note: If you forget your password, there will be no way to ever open your backup file. Of course, you can always see it in your original Check file if you choose to keep that. The `TODAY` function is optional but a good idea to ensure that the current computer date becomes part of the file name. It must be written after the password.

Note: The command `BACKUP` will back up all files in that folder. Thus, if you wish to backup up only the files `A_EX06.*` you must first copy those EpiData files that you wish to back up into another empty folder (such as the `c:\temp` folder after emptying it).

Task:

o   *Create the* `QES-REC-CHK` *triplet, edit the Check file, enter the data above and restore the files.*