

IP2

Wednesday, 12 June 2024

Some Example questions which we will review Today, 12 June 2024

(A) OUR CUSTOMISED LOTTO SYSTEM:

In our restricted Lotto system, we generate test data for lotto draws for a specified period provided by the user (You in this case!). Write a PHP Script to allow the user to input a start date and end date for a specified period. The Script should generate data for the Lotto draws for this period. Here are our customized rules: Lotto numbers are restricted to the range 1 to 20; We generate 6 random numbers without duplicates; We DONOT implement the Bonus Ball as in the National System; Draws are carried out every Wednesday and Saturday; We record the results in a text file in the format: Draw Number [start with 1 for the specified period], Draw Date, Draw Day, Lotto numbers (x6) and without duplicate numbers. Store each draw details on a new line in the file. Here is an example of what the file could contain when we run the script for the period 1 May 2024 to 31 May 2024: [Note that the separator I used here is a Space – in general, it may be better to use a symbol like a comma (CSV file comes to mind!) or other character especially in the data itself could contain spaces – well in this case a space will work! Call this file lottNumsMay24

```
1 01-May-2024 Wednesday 9 8 5 10 6 3
2 04-May-2024 Saturday 10 5 1 3 6 2
3 08-May-2024 Wednesday 5 1 8 4 2 3
4 11-May-2024 Saturday 4 6 8 3 7 2
5 15-May-2024 Wednesday 6 7 4 5 9 1
6 18-May-2024 Saturday 10 5 9 6 2 4
7 22-May-2024 Wednesday 7 1 2 5 9 4
8 25-May-2024 Saturday 4 5 2 3 1 10
9 29-May-2024 Wednesday 8 3 9 7 5 4
```

Once the script is working as expected, you could generate test data for any period. In this regard, generate the following text files using this script:

- (1) 1 January 2024 – 31 May 2024: file name: LottoNums2024.txt
- (2) 1 January 2022 – 31 December 2023: lottoNums22to23.txt
- (3) 1 January 2013 – 31 December 2023: lottoNums10yrs.txt

(B) HRD EMPLOYEE RECORDS: [towards a User Registration System...]

The HR Dept at our institution makes use of an excel spreadsheet to maintain employee records. Here is a snapshot of the details the HRD clerk captures when a new employee is appointed. After the contract and other aspects pertaining to recruitment are finalised, the HR clerk proceeds to create the new employee record in the excel spreadsheet. Here are the details she/he captures:

Staff Number	ID Number	Surname	First Name(s)	Department	Position	Start Date	Supervisor	eMailID	Cell Number
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The name of the file will be Employee.txt. Figure 1 (next slide) contains the details of 5 employees.

Questions:

TowardsAutomation:

- (A) ADD Employee.php: (1) Design a UI that the clerk can use to capture the data for a new record when a new employee is appointed. (2) Write the PHP script to process the data submitted by the form, adding it to the file employee.txt. Undertake the necessary data validation on the users input. Present the UI in an appropriate and professional style/design.
- (B) UPDATE Employee.php: (1) provide search by staff number input element and display the results (if any) on the web page. (2) provide facilities on the display from (1) in which the user can input an updated value – Changing the staff number, ID Number, Surname and First Name(s) are not allowed. In general this type of change will require authorization from a higher decision maker such as a supervisor!

	A	B	C	D	E	F	G	H	I	J	K
1	Staff Number	ID Number	Surname	First Name(s)	Department	Position	Start Date	Supervisor	eMailID	Cell Number	
2	1001	7503274204082	Ramdeyal	Pradesh	ICT	Lecturer	01-Mar-24	Dr Jugoo	ramdeyal	0712281109	
3	1002	6702235204083	Dlamini	Nelly	ICT	Junior Lecturer	01-Mar-24	Dr Jugoo	nelly.dhlamini	0811234321	
4	1003	7901105409081	Pillay	Jushen	ICT	Senior Lecturer	01-Mar-24	Dr Jugoo	Npillay	0611234567	
5	1004	8003306209089	Zulu	Nqobile	ICT	Lecturer	01-Mar-24	Dr Jugoo	Nqobile	0821234321	
6	1005	7503274204082	Njapha	Nompilo	ICT	Lecturer	01-Mar-24	Dr Jugoo	NjaphaN	0831231234	
7											
8											

File Edit View

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Staff Number;ID Number;Surname;First Name(s);Department;Position;Start Date;Supervisor;eMailID;Cell Number
1001;7503274204082;Ramdeyal;Pradesh;ICT;Lecturer;01-Mar-24;Dr Jugoo;ramdeyal;0712281109
1002;6702235204083;Dlamini;Nelly;ICT;Junior Lecturer;01-Mar-24;Dr Jugoo;nelly.dhlamini;0811234321
1003;7901105409081;Pillay;Jushen;ICT;Senior Lecturer;01-Mar-24;Dr Jugoo;Npillay;0611234567
1004;8003306209089;Zulu;Nqobile;ICT;Lecturer;01-Mar-24;Dr Jugoo;Nqobile;0821234321
1005;7503274204082;Njapha;Nompilo;ICT;Lecturer;01-Mar-24;Dr Jugoo;NjaphaN;0831231234
```

Note the separator used here!

(C) **CREATE USERS:** Write PHP script to create a new file called Users.txt which contains the users for a particular system. Here potential users must be an employee to register as a user. Capture the following details from the potential user, using a reg form: UserID; password [encrypted], dateCreated, dateLastModified, pastPasswords [comma separated list of last 10 passwords] - ...one rule we use internally is that when a User changes his password, she/he cannot use the past 10 passwords. Also, As you may realize, the two files so created here are associated with each other through the staff number and userID, providing a type of redundancy we generally use for cross checking, while in development. When we eventually make use of a DB for this purpose, we will eliminate all redundancies in the DB through normalization! – remember this!

Now, using the email recorded in the above file as the “primary key”, provide the user reg form for the potential user to create a digital entity [the required fields are: staff number, userID, password, confirm password]. Implement a set of rules that you design as part of this process for the creation of a valid password. Store the rules as a comment in the script itself – these will generally be recorded in a users manual for the system. Record the details in the file as required. Note also that eventually you will need to use a more modern system such as two factor authentication, so for now we merely create the users without this component – here we are focused on the UI (reg form) and getting the details into the users.txt file – correctly!

The first password must be created in the script itself and provided to the user – this password will follow the password rules which you must decide on!!![for example, max length, min length, acceptable characters and other rules – make this password rules as secure as you can]. Also write PHP that will allow a user to change her/his password...use MD5 encryption function provided by PHP in this script. Finally, attempt to implement a script that will cater for password recovery in cases where the user has forgot password.