Assignment #5	**Extra Credit** **Web Programming** **PHP classes, MySQL, CSS, and a little JavaScript!** **Informatics Student Club 2.0**	**20 pts.** **Due Date (Consult Canvas)**

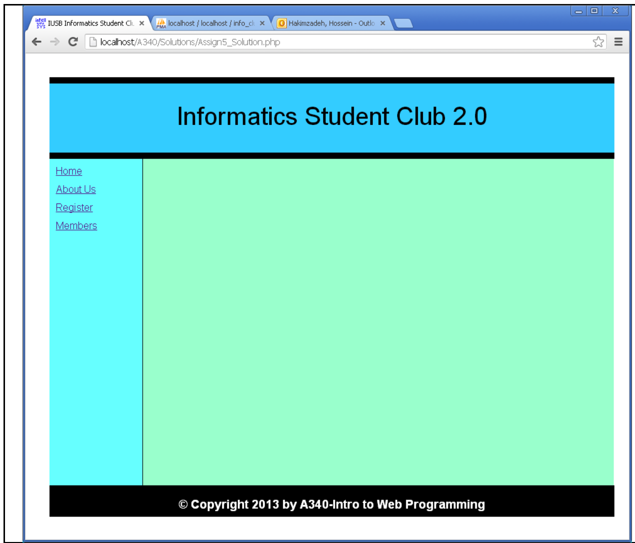
Assignment 5 looks very similar to assignment 4; however, as you already know looks can be deceiving. Even though functionally is similar, assignment 5 is quite different than assignment 4. Here are the basic differences:

1) Use of Object Oriented programming (Assignment 5 uses PHP classes)
2) Use of Relational Databases (Assignment 5 uses MySQL to store its data instead of using XML files)

You will be able to recycle much of the code developed for Assignment 4 but need to learn how that code can be brought into a PHP class. By the time you are done, you may actually have less lines of code!

Just to give you an idea, my implementation of this assignment has the following files:

a) **Assign5_Solution.php**
   - (The main HTML file which displays the header, footer, navigation, and includes the driver for the program
b) **Assign5_Club_Membership_Class.php**
   - My class which performs all the application logic
c) **Assign5_Styles.css**
   - The CSS file is modified to produce a slightly different look from assignment 4.


IUSB Informatics Student Cl
localhost / localhost / info_cl
Hakimzadeh, Hossein - Outlo
localhost/A340/Solutions/Assign5_Solution.php
Home
About Us
Register
Members

Informatics Student Club 2.0

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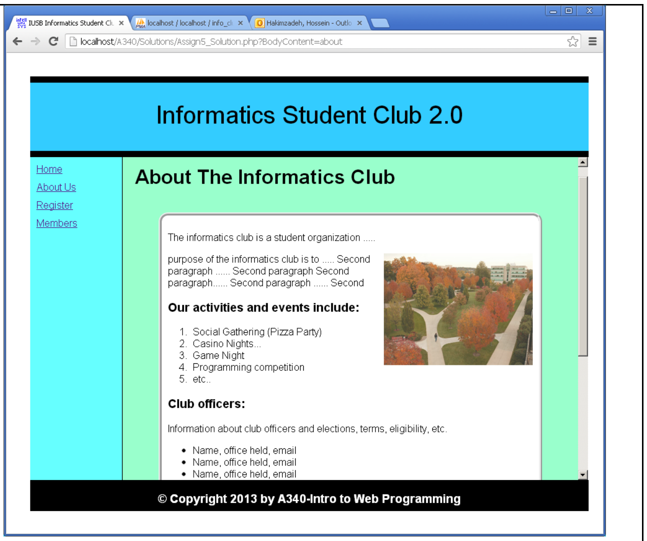
IUSB Informatics Student Cl
localhost / localhost / info_cl
Hakimzadeh, Hossein - Outlo
localhost/A340/Solutions/Assign5_Solution.php?BodyContent=about
Home
About Us
Register
Members

Informatics Student Club 2.0

About The Informatics Club

The informatics club is a student organization .....

purpose of the informatics club is to ..... Second paragraph ...... Second paragraph Second paragraph...... Second paragraph ...... Second

Our activities and events include:

1. Social Gathering (Pizza Party)
2. Casino Nights...
3. Game Night
4. Programming competition
5. etc..

Club officers:

Information about club officers and elections, terms, eligibility, etc.

- Name, office held, email
- Name, office held, email
- Name, office held, email

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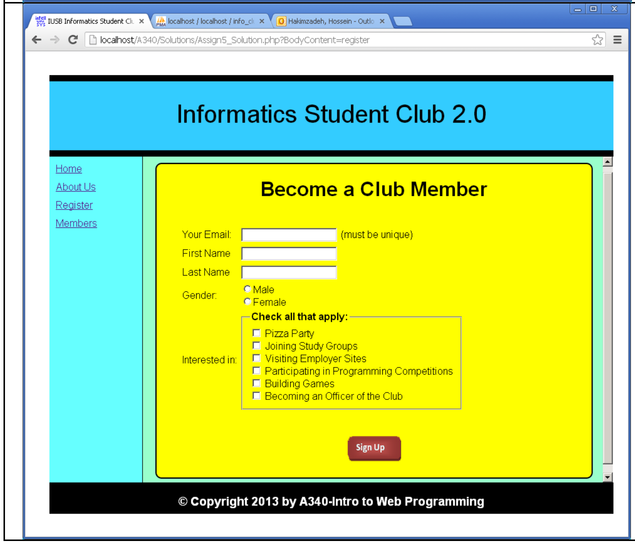
IUSB Informatics Student Cl
localhost / localhost / info_cl
Hakimzadeh, Hossein - Outlo
localhost/A340/Solutions/Assign5_Solution.php?BodyContent=register
Home
About Us
Register
Members
Sign Up

Informatics Student Club 2.0

Become a Club Member

Your Email: ______ (must be unique)
First Name ______
Last Name ______
Gender: ○ Male ○ Female

Interested in: **Check all that apply:**
□ Pizza Party
□ Joining Study Groups
□ Visiting Employer Sites
□ Participating in Programming Competitions
□ Building Games
□ Becoming an Officer of the Club

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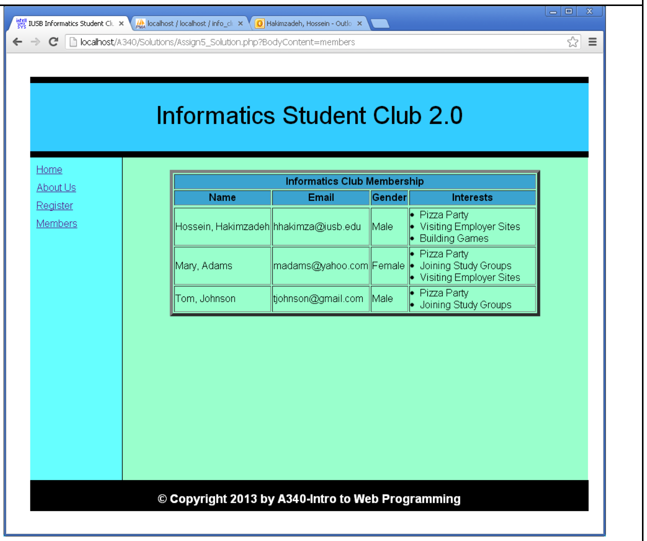
IUSB Informatics Student Cl
localhost / localhost / info_cl
Hakimzadeh, Hossein - Outlo
localhost/A340/Solutions/Assign5_Solution.php?BodyContent=members
Home
About Us
Register
Members

Informatics Student Club 2.0

Informatics Club Membership			
Name	**Email**	**Gender**	**Interests**
Hossein, Hakimzadeh	hhakimza@iusb.edu	Male	• Pizza Party • Visiting Employer Sites • Building Games
Mary, Adams	madams@yahoo.com	Female	• Pizza Party • Joining Study Groups • Visiting Employer Sites
Tom, Johnson	tjohnson@gmail.com	Male	• Pizza Party • Joining Study Groups

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Step 1: To start the process, we need to create a database for maintaining club membership information. We will call this database **info_club.** Similar to assignment 4, this database will maintain information about club members and their interests. This information will be placed in separate tables (files) in the database. In addition, we will create a table for maintaining various interest_type(s). Doing so, allows us to dynamically load the list of possible “interests”, and therefore allows us to expand this list without having to modify our PHP program. All we have to do is to add more records to our database. **This is an important concept.**

To create the database needed for this assignment, make sure your WAMP or XAMPP, etc. is running, then go to http://localhost/phpmyadmin and copy and paste the following SQL statements into a SQL box.

The SQL statements below will perform the following:

1) Delete the info_club database (if it already exists, from time to time you may have to do this if you mess the database too badly).
2) Delete the user account for this assignment (if it already exists, otherwise it is ignored).
3) Create a new user account for this assignment. (“A340User”)
4) Provide some privileges to the user account (Using the GRANT statement)
5) Create the info_club database (Remember we deleted it in step-1)
6) Make the info_club database active (The concept of active database implies that you can have multiple databases! ….. Yes you can!)
7) Provide the user account some specific privileges to access the info_club database (this is probably an overkill)
8) Create the member table (and populate it with a couple of records)
9) Create the interest_type table (and populate it with a few records)
10) Create the member_interests table (and populate it with a few records)
11) Establish the key to foreign-key relationships (this is known as referential integrity constraint)

```
DROP DATABASE IF EXISTS `info_club`;

DROP USER 'A340User'@'localhost';

CREATE USER 'A340User'@'localhost' IDENTIFIED BY  'Pass123Word';

GRANT
 SELECT ,
 INSERT ,
 UPDATE ,
 DELETE ,
 CREATE ,
 FILE
ON
  *.*
TO
  'A340User'@'localhost' IDENTIFIED BY  'Pass123Word'
WITH
  MAX_QUERIES_PER_HOUR 0
  MAX_CONNECTIONS_PER_HOUR 0
  MAX_UPDATES_PER_HOUR 0
  MAX_USER_CONNECTIONS 0 ;
CREATE DATABASE IF NOT EXISTS info_club;

USE info_club;

GRANT
  SELECT , INSERT , UPDATE , DELETE , CREATE, ALTER
ON
  `info\_club` . *
TO
  'A340User'@'localhost';

CREATE TABLE IF NOT EXISTS `member` (
  `Email` varchar(128) NOT NULL,
  `FirstName` varchar(32) DEFAULT NULL,
  `LastName` varchar(32) DEFAULT NULL,
  `Gender` varchar(16) NOT NULL,
  `MemberSince` timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP,
  PRIMARY KEY (`Email`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

--
```

```
-- Dumping data for table `member`
--

INSERT INTO `member` (`Email`, `FirstName`, `LastName`, `Gender`, `MemberSince`) VALUES
('madams@yahoo.com', 'Mary', 'Adams', 'Female', '2013-04-14 16:18:59'),
('tjohnson@gmail.com', 'Tom', 'Johnson', 'Male', '2013-04-14 00:00:00');
```

```
CREATE TABLE IF NOT EXISTS `interest_type` (
  `InterestID` INT NOT NULL,
  `InterestDescription` varchar(128) NOT NULL,
  PRIMARY KEY (`InterestID`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;


INSERT INTO `interest_type` (`InterestID`, `InterestDescription`) VALUES
(1, 'Pizza Party'),
(2, 'Joining Study Groups'),
(3, 'Visiting Employer Sites'),
(4, 'Participating in Programming Competitions'),
(5, 'Building Games'),
(6, 'Becoming an Officer of the Club');
```

```
CREATE TABLE IF NOT EXISTS `member_interests` (
  `Email` varchar(128) NOT NULL,
  `InterestID` INT NOT NULL,
  PRIMARY KEY (`Email`, `InterestID`)
) ENGINE=InnoDB DEFAULT CHARSET=latin1;


INSERT INTO `member_interests` (`Email`, `InterestID`) VALUES
('tjohnson@gmail.com', 1),
('tjohnson@gmail.com', 2),
('madams@yahoo.com', 1),
('madams@yahoo.com', 2),
('madams@yahoo.com', 3);
```

```
--
-- Connect the tables together via foreign keys
--

ALTER TABLE  `member_interests` ADD FOREIGN KEY (  `Email` ) REFERENCES
`info_club`.`member` (
`Email`
) ON UPDATE CASCADE ;

ALTER TABLE  `member_interests` ADD FOREIGN KEY (  `InterestID` ) REFERENCES
`info_club`.`interest_type` (
`InterestID`
) ON UPDATE CASCADE ;
```

NOTE: Additional fields or tables can be added to the database if you wish to do so. But at a minimum the above has to be implemented. I suggest that you do not add any new fields until after your program is completely working. Then you can try to expand its scope if you wish.

Your database should look like the following figures:

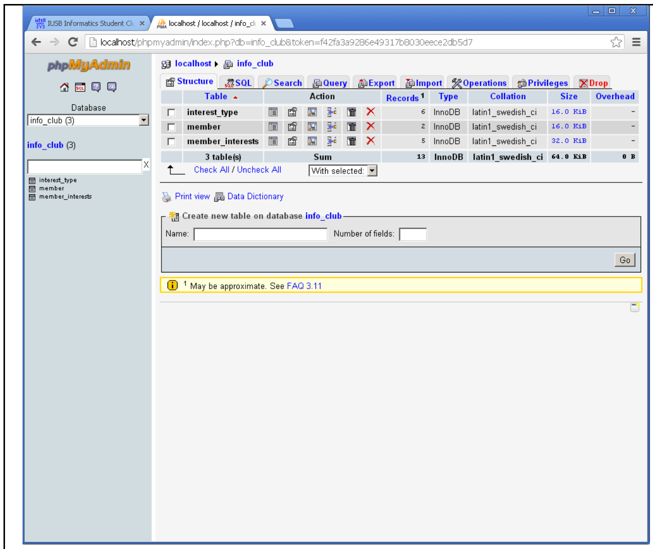


	Table	Action	Records [1]	Type	Collation	Size	Overhead
□	interest_type	✕	6	InnoDB	latin1_swedish_ci	16.0 KiB	-
□	member	✕	2	InnoDB	latin1_swedish_ci	16.0 KiB	-
□	member_interests	✕	5	InnoDB	latin1_swedish_ci	32.0 KiB	-
	3 table(s)	Sum	13	InnoDB	latin1_swedish_ci	64.0 KiB	0 B

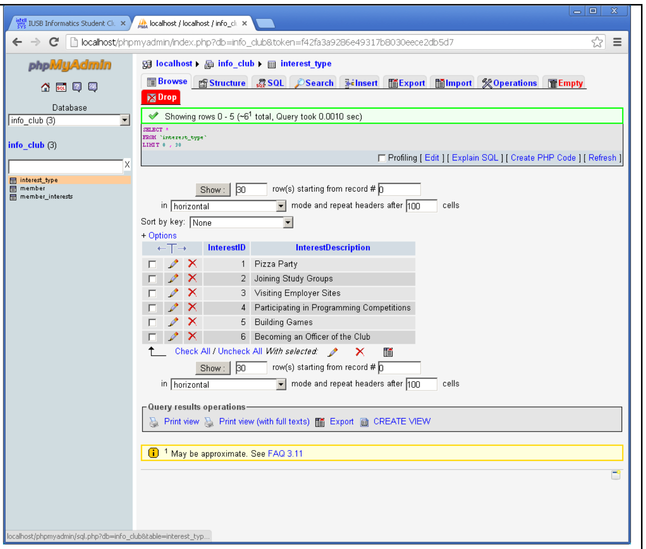
Check All / Uncheck All With selected:

Print view Data Dictionary

Create new table on database info_club

Name: Number of fields: Go

[1] May be approximate. See FAQ 3.11


localhost / localhost / info_cl
localhost/phpmyadmin/index.php?db=info_club&token=f42fa3a9286e49317b8030eece2db5d7
localhost ▸ info_club ▸ interest_type
Browse
Structure
SQL
Search
Insert
Export
Import
Operations
Empty
Drop
localhost/phpmyadmin/sql.php?db=info_club&table=interest_typ...

Showing rows 0 - 5 (~6[1] total, Query took 0.0010 sec)

```
SELECT *
FROM `interest_type`
LIMIT 0 , 30
```

□ Profiling [Edit] [Explain SQL] [Create PHP Code] [Refresh]

Show : 30 row(s) starting from record # 0

in horizontal mode and repeat headers after 100 cells

Sort by key: None

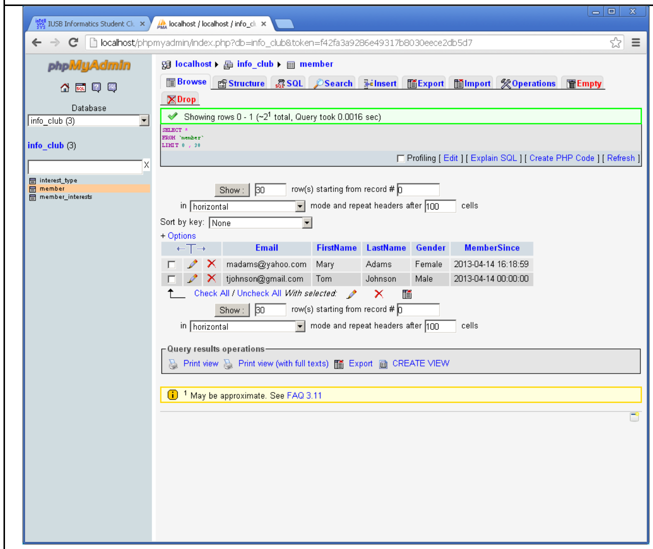
+ Options

	InterestID	InterestDescription
□ ✕	1	Pizza Party
□ ✕	2	Joining Study Groups
□ ✕	3	Visiting Employer Sites
□ ✕	4	Participating in Programming Competitions
□ ✕	5	Building Games
□ ✕	6	Becoming an Officer of the Club

Check All / Uncheck All With selected:

Query results operations: Print view Print view (with full texts) Export CREATE VIEW

[1] May be approximate. See FAQ 3.11


localhost / localhost / info_cl
localhost/phpmyadmin/index.php?db=info_club&token=f42fa3a9286e49317b8030eece2db5d7
localhost ▸ info_club ▸ member
Browse
Structure
SQL
Search
Insert
Export
Import
Operations
Empty
Drop

Showing rows 0 - 1 (~2[1] total, Query took 0.0016 sec)

```
SELECT *
FROM `member`
LIMIT 0 , 30
```

□ Profiling [Edit] [Explain SQL] [Create PHP Code] [Refresh]

Show : 30 row(s) starting from record # 0

in horizontal mode and repeat headers after 100 cells

Sort by key: None

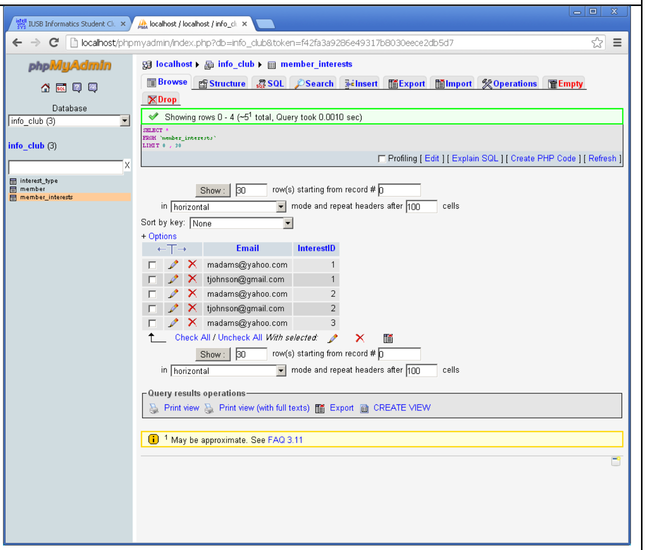
+ Options

	Email	FirstName	LastName	Gender	MemberSince
□ ✕	madams@yahoo.com	Mary	Adams	Female	2013-04-14 16:18:59
□ ✕	tjohnson@gmail.com	Tom	Johnson	Male	2013-04-14 00:00:00

Check All / Uncheck All With selected:

Query results operations: Print view Print view (with full texts) Export CREATE VIEW

[1] May be approximate. See FAQ 3.11


localhost / localhost / info_cl
localhost/phpmyadmin/index.php?db=info_club&token=f42fa3a9286e49317b8030eece2db5d7
localhost ▸ info_club ▸ member_interests
Browse
Structure
SQL
Search
Insert
Export
Import
Operations
Empty
Drop

Showing rows 0 - 4 (~5[1] total, Query took 0.0010 sec)

```
SELECT *
FROM `member_interests`
LIMIT 0 , 30
```

□ Profiling [Edit] [Explain SQL] [Create PHP Code] [Refresh]

Show : 30 row(s) starting from record # 0

in horizontal mode and repeat headers after 100 cells

Sort by key: None

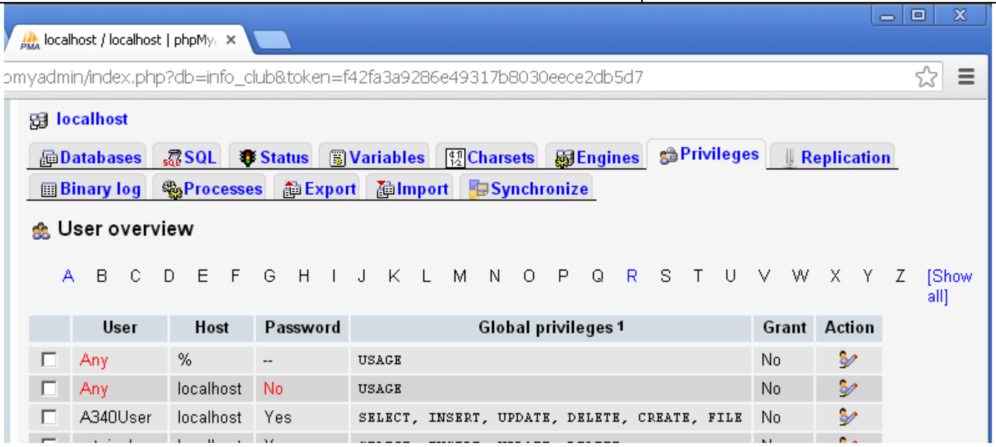
+ Options

	Email	InterestID
□ ✕	madams@yahoo.com	1
□ ✕	tjohnson@gmail.com	1
□ ✕	madams@yahoo.com	2
□ ✕	tjohnson@gmail.com	2
□ ✕	madams@yahoo.com	3

Check All / Uncheck All With selected:

Query results operations: Print view Print view (with full texts) Export CREATE VIEW

[1] May be approximate. See FAQ 3.11


localhost / localhost | phpMy
omyadmin/index.php?db=info_club&token=f42fa3a9286e49317b8030eece2db5d7
localhost
Databases
SQL
Status
Variables
Charsets
Engines
Privileges
Replication
Binary log
Processes
Export
Import
Synchronize
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [Show all]

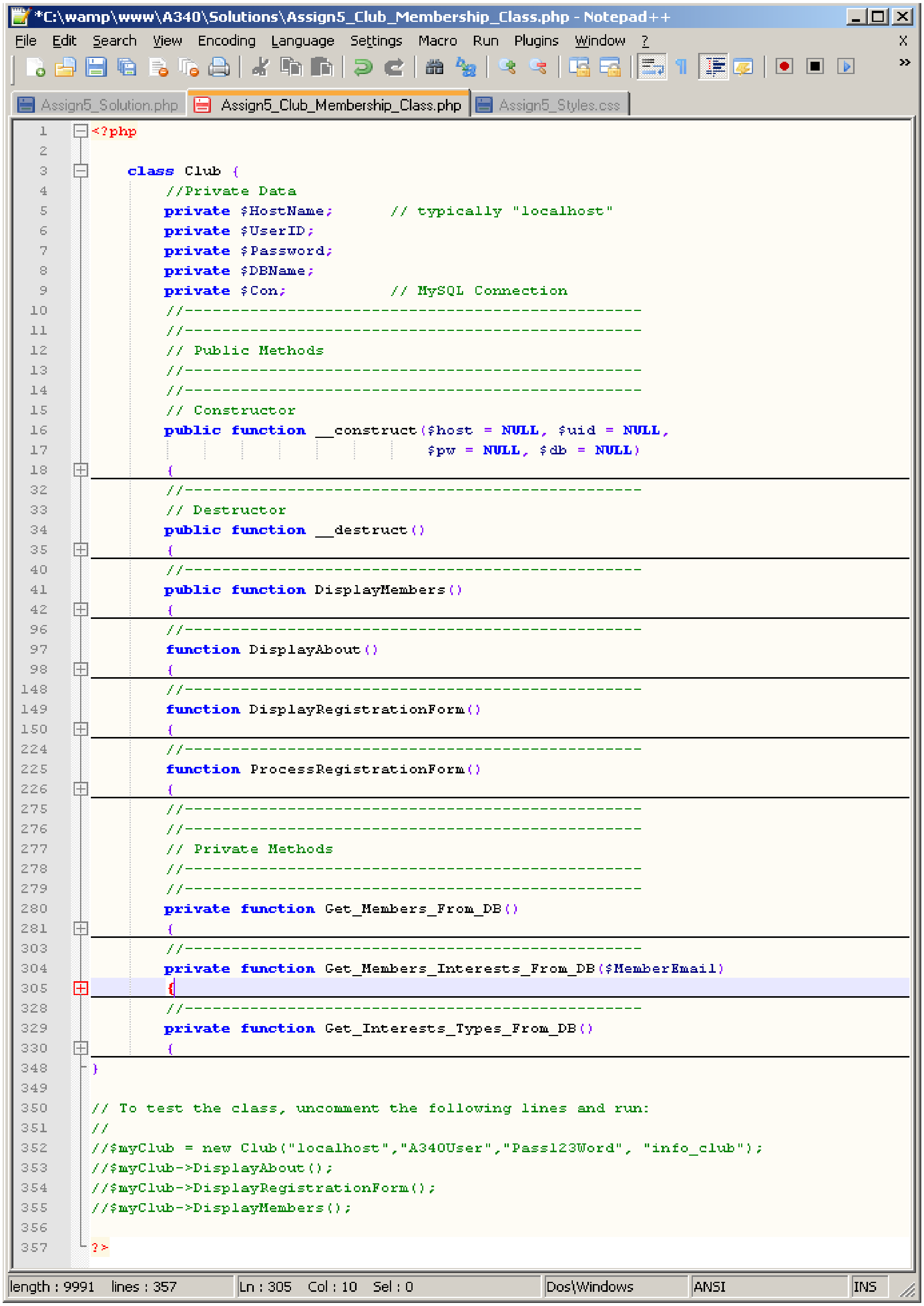
User overview

	User	Host	Password	Global privileges 1	Grant	Action
□	Any	%	--	USAGE	No	
□	Any	localhost	No	USAGE	No	
□	A340User	localhost	Yes	SELECT, INSERT, UPDATE, DELETE, CREATE, FILE	No	

(User Privileges)

Step 2: Create your main driver module (similar to my **Assign5_Solution.php** described above. Similar to assignment 4, you may want to use the GET super-global array (e.g., the URL line) to pass information between requests to know which link is being clicked on. Note that the driver module will create an instance of the Club class (see step 3) and simply calls its methods to perform the necessary logic for “About”, “Register”, displaying the “Members”.

Step 3: Create your **Assign5_Club_Membership_Class.php** file. This class should do all of the heavy lifting. The class should have a number of public methods which could be called from your main driver file (e.g., my Assign5_Solution.php). The functional specification for the class is as follows:



*C:\wamp\www\A340\Solutions\Assign5_Club_Membership_Class.php - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
Assign5_Solution.php
Assign5_Club_Membership_Class.php
Assign5_Styles.css
length : 9991 lines : 357
Ln : 305 Col : 10 Sel : 0
Dos\Windows
ANSI
INS

```
<?php

    class Club {
        //Private Data
        private $HostName;      // typically "localhost"
        private $UserID;
        private $Password;
        private $DBName;
        private $Con;           // MySQL Connection
        //------------------------------------------------
        //------------------------------------------------
        // Public Methods
        //------------------------------------------------
        //------------------------------------------------
        // Constructor
        public function __construct($host = NULL, $uid = NULL,
                                    $pw = NULL, $db = NULL)
        {
        //------------------------------------------------
        // Destructor
        public function __destruct()
        {
        //------------------------------------------------
        public function DisplayMembers()
        {
        //------------------------------------------------
        function DisplayAbout()
        {
        //------------------------------------------------
        function DisplayRegistrationForm()
        {
        //------------------------------------------------
        function ProcessRegistrationForm()
        {
        //------------------------------------------------
        //------------------------------------------------
        // Private Methods
        //------------------------------------------------
        //------------------------------------------------
        private function Get_Members_From_DB()
        {
        //------------------------------------------------
        private function Get_Members_Interests_From_DB($MemberEmail)
        {
        //------------------------------------------------
        private function Get_Interests_Types_From_DB()
        {
}

// To test the class, uncomment the following lines and run:
//
//$myClub = new Club("localhost","A340User","Pass123Word", "info_club");
//$myClub->DisplayAbout();
//$myClub->DisplayRegistrationForm();
//$myClub->DisplayMembers();

?>
```

In order to complete Step 3, you will need a few SQL queries. These are provided below. You can try to run these queries to make sure you understand what output they produce, before trying to use them in your PHP class/program. Note the highlighted texts are variables, and they only work within your PHP program, assuming your variable names are similar to mine! (Note: If you want to test these queries in MySQL, you need to replace the variable name with a proper “value”, before executing the query.)

```
$sql = "SELECT
                InterestID,
                InterestDescription
        FROM
                interest_type";
```

```
$sql = "SELECT
                interest_type.InterestDescription
        FROM
                member, member_interests, interest_type
        WHERE
                member.Email = '$MemberEmail'
                AND
                member.Email = member_interests.Email
                AND
                member_interests.InterestID = interest_type.InterestID";
```

```
$sql = "INSERT INTO member
                (`Email`, `FirstName`, `LastName`, `Gender`, `MemberSince`)
        VALUES
                ('$email', '$fname', '$lname', '$sex', date('Y-m-d')); ";
```

```
$sql = "INSERT INTO member_interests
                (`Email`, `InterestID`)
        VALUES
                ('$email', $interest); ";
```

Step 3: The last step is to make sure your CSS works. My guess is that your CSS from assignment 4, will do just fine. **You just need to change the colors a bit.**

Good luck, Start Early, and Have Fun