

Tutorial letter 102/1/2018

Internet Programming
ICT2613

Semester 1

School of Computing

Additional Information and Assignment 1

BAR CODE

IMPORTANT NOTICE!!

Electronic communication with lecturers **must be done through a *myLife* email account.**
Always state the module and your student number in communication.

1 INTRODUCTION AND WELCOME

Welcome to ICT2613, Internet Programming. Please read this tutorial letter carefully.

Note that ICT2613 is a fully online-presented course. No course material is posted to students, other than tutorial letter 101 and the course DVD (also available on Osprey website, <http://osprey.unisa.ac.za/download/Disk/>). When additional study material is uploaded on myUnisa in Additional Resources, you will be informed via an e-mail to your *myLife* account.

Tutorial 101 contains some important information about the module.

Best wishes with your studies!

ICT2613 Tuition Team

2 PURPOSE OF AND OUTCOMES FOR THE MODULE

2.1 Purpose

This module will provide an intermediate web-developer with the knowledge to analyse contents and problems, design, develop and maintain an appropriate web-based solution and skills to supply solutions and with the values needed to develop an appreciation for a principled working methodology within a changing society.

The student will be able to design and implement a new infrastructure in a web-based environment.

Qualified students will be able to design, develop and maintain web-sites and provide long term principled decisions in a changing society to specific international standards of precision, robustness, reliability, cost-effectiveness, solution-specific within a specified time-frame and client-satisfaction.

Students will be able to analyse, design and develop appropriate web-based solutions in a *changing* environment.

2.2 Outcomes

Specific outcome 1

Demonstrate an understanding of basic program operations in a web-based/internet environment.

Range

Input/Output, basic arithmetic operations, logical operations, saving code

Assessment criteria

Code that requests input and produces output is written for a web-based / internet environment; the use of operators to perform calculations and make logical decision is applied in such a way that correct output is produced; demonstration includes the saving of work and retrieval.

Specific outcome 2

Demonstrate an understanding of and use variables in a web-based / internet environment.

Range

Variable types, scope, constants, conversion

Assessment criteria

Types of variables and how they may be manipulated are explained; when and from which parts of the code variables are accessible are explained; the use of constants is demonstrated and the motivations for using them are explained; the conversion of one type to another is demonstrated and why it is useful is explained.

Specific outcome 3

Demonstrate an understanding of structures and their use in a web-based/internet environment.

Range

Loops decision making, arrays, repetition, functions

Assessment criteria

Code that involves structures is demonstrated to show how these structures are use in decision making repetitions and variable structures.

3 LECTURER, TUTOR AND CONTACT DETAILS

3.1 Lecturer and tutor

Lecturer: Mrs Anitta Thomas, module e-mail: ICT2613-18-S1@unisa.ac.za, personal e-mail: thomaa@unisa.ac.za, telephone: 011 6709181

3.2 School of Computing

Tel: +27 11 670 9200

E-mail: computing@unisa.ac.za

3.3 University

Please go to www.unisa.ac.za, and follow the link Contact Us.

3.4 Forum

We will use *myUnisa* discussion forum this semester. Please participate in the forum.

3.5 Telephone

Should you wish to contact a lecturer telephonically, and before you make a call, please visit <http://osprey.unisa.ac.za> and the "SOC registered students" page (which you must first personalize for yourself). This page shows which module lecturers are in office, thereby preventing frustration on your side when calls go unanswered because lecturers may be in meetings/workshops, at conferences etc.

However, we request that you rather use the forum for course content/presentation queries. Send an email when you have queries outside the course content/presentation, e.g. a personal issue. Either way, a traceable electronic record of your query is available.

3.6 E-mail

To prevent the chance of your email being marked as spam, please provide your module code and student number in the subject line. Also note that valid emails sometimes end up in our spam folder, with the result that a response may be delayed.

4 MODULE RELATED RESOURCES

4.1 Prescribed book

Please see Tut 101 for the prescribed book.

4.2 Software Disk

With tutorial letter 101 you should have received a disk, which contains all the necessary software that is referred to in the prescribed textbook. We have also included some additional software that you might find useful as well. Please see `SoftwareInformation.pdf` in the disk for the list of included software. Further installation instructions are given in the later sections of this tutorial letter. This software disk is also available on Osprey website.

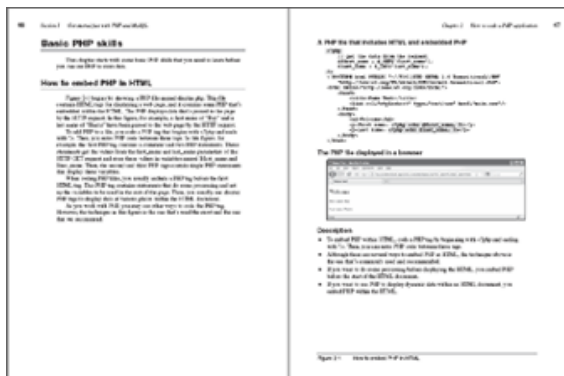
4.3 Study material

- Tutorial letters 101, 102, 103 and 104
- Chapters 1-12 of the prescribed textbook
- A software disk
- Additional resources folder on *myUnisa* may contain additional study material

5 TEXTBOOK APPROACH

The prescribed handbook teaches all the skills you need to develop almost any type of database-driven web site with PHP and MySQL.

The content is presented in "paired pages" (see screenshot below) with the essential syntax, guidelines, and examples on the right page and the perspective and extra explanation on the left page. The in-chapter exercises on the right-hand side are used to explain and illuminate the theory which is presented on the left-hand pages. In this manner you add code to an in-chapter exercise application as you progress through the chapter.



The code and solutions to most of the exercises/applications are made available. The intention is for you to *try and complete the exercises/applications on your own*, and when you can't do so, you can refer to the solutions.

This is a programming module and thus, it is vital to practice programming on a computer with the necessary software. The textbook and the assignments give sufficient programming experience.

5 SOFTWARE

Step 1: Install server environment, editor and course files.

- Appendix A (Windows) and Appendix B (Mac) cover installation of the server environment, an editor and course files (book applications and source code). All the software for Windows is available on the course DVD, so you do not have to download it as directed in these appendixes.
Note: on newer versions of Windows, do not install XAMPP to your C:/Program Files folder since you are prevented from writing to this folder.
- Note that the server environment and editors are tools that may, depending on the configuration of your PC, present unique installation and usage problems that we cannot possibly support. We suggest you Google or make use of the forum – perhaps other people/students have experience the same problem/s.
- If you make use of a Unisa Computer Laboratory, note that another independent MySQL installation may be installed on the PC's. This may cause problems when you try to start MySQL through the XAMPP interface/panel. The solution is to check for another MySQL icon in the taskbar to the bottom right (in the past it was a small traffic robot icon, but we cannot be sure as laboratory installations change from year to year). Ensure this particular MySQL service is not running (stop it by right-clicking the icon -> WinNT -> Stop service) or through the Running Services application. Then restart the MySQL service from the XAMPP panel.
- Also note that if you run Skype, it will clash with XAMPP since the latter installation also makes use of port 80. Please Google for support on resolving this issue, or post your problem on the forum.
- The complete PHP manual (with a search option of PHP functions) is available as a windows help-file in the DVD. If you are using Windows XP SP2 or later, you need to “unblock” the file by right-clicking on it in Windows Explorer and selecting the “Properties” menu item, then clicking on the “Unblock” button (on Windows Vista this is within the “Security” options). Failure to unblock the documentation file may result in error messages including “Navigation to the webpage was canceled” due to Windows security restrictions.

Step 2: Work through each of the prescribed chapters.

1. Refer to the folder `TextbookResources` in the DVD for the course files (book applications and source code)
2. For every chapter, read the text presented on the left page, and where applicable, run/adapt the code presented on the right page (in-chapter exercises), which, if you have followed the steps in the book appendix, is available in the `books_app` folder in your root web folder.
3. Complete the exercises presented at the end of each chapter. Starting code is available in the `ex_starts` folder.
4. The solutions to all these exercises are available in the `ex_solutions` folder. This implies that you can simply copy the solutions and run them, or just read through them - but as stated earlier, **you should use the solutions to learn**. Thus, try and complete an exercise on your own, and only use the solution when you get stuck. **If you do not follow**

this route, you will not learn to program.

6 ASSIGNMENTS

Assignment 1 (chapters 1-6)

Complete your assignment as follows:

- Capture the correct answer for each question
- Visit *myUnisa* and carry your answers over onto the answer sheet

Question 1

Which of the following software is a Web server?

1. Apache
2. MySQL
3. phpMyAdmin
4. htdocs

Question 2

In PHP, all variables begin with a _____.

1. lowercase letter
2. uppercase letter
3. \$
4. &

Question 3

Which of the following is correct to round and format the value of a variable named `$number` to 3 decimal places and store it in a variable named `$number_formatted`?

1. `$number_formatted = number_format($number, 3, round);`
2. `$number_formatted = number_format($number, 3);`
3. `$number_formatted = format_number($number, 3, round);`
4. `$number_formatted = format_number($number, 3);`

Question 4

Which of the following options is logically equivalent to the code below?

```
$i = 4;
while($i <= 7){
    if($i%2 != 0)
        echo "$i - Odd number <br>";
    else
        echo "$i - Even number <br>";
    $i++;
}
```

1. `$i = 4;`

```

do{
    if($i%2 != 0)
        echo "$i - Odd number <br>";
    else
        echo "$i - Even number <br>";
    $i++;
}
2. $i = 4;
do while($i <= 7){
    if($i%2 != 0)
        echo "$i - Odd number <br>";
    else
        echo "$i - Even number <br>";
    $i++;
}
3. for($i = 4 ; $i <= 7 ; $i++){
    if($i%2 != 0)
        echo "$i - Odd number <br>";
    else
        echo "$i - Even number <br>";
    $i++;
}
4. for($i = 4 ; $i <= 7 ; $i++){
    if($i%2 == 0)
        echo "$i - Even number <br>";
    else
        echo "$i - Odd number <br>";
}

```

Question 5

What does a relational database use to uniquely identify each row in a table?

1. indexes
2. foreign keys
3. non-primary keys
4. primary keys

Question 6

Which type of SQL statement returns a result set?

1. UPDATE
2. CREATE
3. SELECT
4. INSERT

Question 7

Which of the following is not passed as an argument when a PDO object is created?

1. Data source name
2. Server name
3. User name
4. Password

Question 8

When designing applications using MVC, which of the following represents the data?

1. model
2. view
3. controller
4. requester

Question 9

Which of the following is **not** a benefit of using the MVC pattern for an application?

1. It is easier to make changes to the application
2. Web designers can work independently on the view
3. It is easier to test and debug the application
4. The application runs more faster

Question 10

An error that lets the application run but produces the wrong results is known as a

1. runtime error
2. user error
3. logic error
4. syntax error

Assignment 2 (chapters 1-12)

An e-mail will be send to your myLife account when assignment 2 questions (Tutorial letter 103) are available to download.

9 EXAMINATIONS

An exam letter will be distributed towards the end of the semester.

10 APPENDIX

INSTALLING WAMPSEVER

You don't need to install WampServer, if you have installed XAMPP. If you choose WampServer instead of XAMPP, given below are the installation instructions.

Step 1

Note:

- Do not install WampServer OVER an existing version.
- Install WampServer in a folder at the root of a disk, for example C:\wamp (do not use C:\Program Files)

Before proceeding with the installation of WampServer, you must ensure that the run-time

environments here below are installed on your system, otherwise WampServer will absolutely not run. In addition, the installation will be faulty and you will need to remove WampServer before installing the elements that were missing. Make therefore sure you are "up to date" in the redistributable packages VC9, VC10, VC11, VC13 and VC14 as listed here under.

Install the following 5 run-time environments (VC9 to VC14) from your DVD, or download them from the link provided (if you have a 64-bit Windows, you must install both the 32 and 64bit versions).

a) VC9 Packages (Visual C++ 2008 SP1)

<http://www.microsoft.com/en-us/download/details.aspx?id=5582> 32bit (VC9_32 .exe on the DVD)

<http://www.microsoft.com/en-us/download/details.aspx?id=2092> 64bit (VC9_64 .exe on the DVD)

b) VC10 Packages (Visual C++ 2010 SP1)

<http://www.microsoft.com/en-us/download/details.aspx?id=8328> 32bit (VC10_32.exe on the DVD)

<http://www.microsoft.com/en-us/download/details.aspx?id=13523> 64bit (VC10_64.exe on the DVD)

c) VC11 Packages (Visual C++ 2012 Update 4) The two files VSU4\vcredist_x86.exe and VSU4\vcredist_x64.exe to be download are on the same page:

<http://www.microsoft.com/en-us/download/details.aspx?id=30679> (VC11_32.exe or VC11_64.exe on the DVD)

d) VC13 Packages] (Visual C++ 2013]) The two files VSU4\vcredist_x86.exe and VSU4\vcredist_x64.exe to be download are on the same page:

<https://www.microsoft.com/en-us/download/details.aspx?id=40784> (VC11_32.exe or VC11_64.exe on the DVD)

e) VC14 Packages (Visual C++ 2015) The two files vcredist_x86.exe and vcredist_x64.exe to be download are on the same page:

<http://www.microsoft.com/fr-fr/download/details.aspx?id=48145> (VC14_32.exe or VC14_64.exe on the DVD)

Step 2

Download from <https://sourceforge.net/projects/wampserver/>

or

double click on the wampserver file of your choice from the DVD:

wampserver3.0.6_x64_XXXXXX.exe

or

wampserver3.0.6_x32_XXXXXX.exe

and just follow the instructions.

USING WAMPSEVER

- The "www" directory will be automatically created (usually c:\wamp\www)
- Create a subdirectory in "www" (e.g. ICT2613) and create your PHP files inside this folder.

Click on the “localhost” link in the WampServer menu or open your internet browser and go to the URL: <http://localhost>. If you want to access a file in the folder created here above (or any other sub-folders thereunder), you need to add them to the URL e.g. http://localhost/ICT2613/my_file.php

FUNCTIONALITIES

With a left click on WampServer’s icon, you will be able to:

- manage (start and stop) your Apache and MySQL services (mostly used)
- switch online/offline (give access to everyone or only localhost)
- install and switch Apache, MySQL and PHP releases (not required)
- manage your servers settings (in case of port clashes with Skype)
- access your error logs
- access your settings files