Homework 4 – Implementation

(13 points)

**Instructions**

* Submit as one Word document via email
* Document Name shall be: Homework4-<LastName,FirstName>
  + Example *Homework4-Snerfle,Burf*
* Email Subject Line shall be: CSCI3350-<Your Section Number>:Homework4
  + Example *CSCI3350-001:Homework4*
* Due 1 December, email prior to noon

**McCabe’s Cyclomatic Complexity Index**

1. Draw the connected graph that represents the module that follows.
2. Make sure that you have included an entry point vertex and an exit point vertex for the module.
3. Determine (2 points)
   1. V (the number of vertices):
   2. E (the number of edges):
4. Calculate McCabe’s Cyclomatic Complexity Index **(M)**. (2 points)
5. How many **closed** **regions ( C )**  are there in your graph? (1 point)
6. How many **binary decisions ( B)** are there in your graph? (1 point)
7. What is the relationship between **M**, **C** , and **B** for your graph? (3 points)
8. Do you think that this is a general relationship that would be true for the graph of any module? (2 points)
9. What are some complexities in an application that McCabe’s Cyclomatic Complexity does **not** address? (2 points)

**The Module to Be Analyzed**

//

// \*\*\* Evaluate values

// \*\*\* Agreement check

//

if (!(isset($\_POST['check\_agreement'])))

{

// \*\*\* Some Code

}

//

// \*\*\*Check email

//

if (!(ereg('.\*@.\*\..\*', $email)))

{

// \*\*\* Some Code

}

//

// \*\*\*Check phone number for errors

//

if (!(ereg('^[0-9]{3}-?[0-9]{3}-?[0-9]{4}$', $phone)))

{

// \*\*\* Some Code

}

//

// \*\*\* Check the rest

//

while ($i <= 8)

{

if (strlen($a[$i]) <= 0)

{

// \*\*\* Some Code

switch($i)

{

case 1:

// \*\*\* Some Code

case 2:

// \*\*\* Some Code

case 3:

// \*\*\* Some Code

case 4:

// \*\*\* Some Code

case 5:

// \*\*\* Some Code

case 6:

// \*\*\* Some Code

case 7:

// \*\*\* Some Code

case 8:

// \*\*\* Some Code

}

}

//

// \*\*\* If now error in variable then put data into url in case of redirect

// \*\*\* so form can read them

//

else

{

switch ($i)

{

case 1:

// \*\*\* Some Code

case 2:

// \*\*\* Some Code

case 3:

// \*\*\* Some Code

case 4:

// \*\*\* Some Code

case 5:

// \*\*\* Some Code

case 6:

// \*\*\* Some Code

case 7:

// \*\*\* Some Code

case 8:

// \*\*\* Some Code

}

}

$i++;

}

//

// \*\*\* Redirect back to form

//

if ($bolError == "true")

{

// \*\*\* Some Code

}

//

// \*\*\* Update to database after checks if the business name check is

// \*\*\* correct

//

else

{

// \*\*\* Some Code

//

// \*\*\* If business name is = to a database row then error

// \*\*\* and redirect

//

if ($row[0] == $business\_name)

{

// \*\*\* Some Code

}

//

// \*\*\* Everything is correct, insert into database

//

else

{

// \*\*\* Some Code

}

}