Lecture 17: Programming Language: Perl (IV) - flow control

Review: Conditional Execution
- if (condition)
  
  statement A;
  
else
  
  statement B;

Review: Comparison Operators:

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Numeric</th>
<th>String</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal</td>
<td>===</td>
<td>eq</td>
</tr>
<tr>
<td>Not Equal</td>
<td>!=</td>
<td>ne</td>
</tr>
<tr>
<td>Less than</td>
<td>&lt;</td>
<td>lt</td>
</tr>
<tr>
<td>Greater than</td>
<td>&gt;</td>
<td>gt</td>
</tr>
<tr>
<td>Less or equal to</td>
<td>&lt;=</td>
<td>le</td>
</tr>
<tr>
<td>Greater or equal to</td>
<td>&gt;=</td>
<td>ge</td>
</tr>
</tbody>
</table>

Review: A while loop

$x = 0;
while ($x < 5)
{
    print (“The value of x is $x\n”);
    $x++;
}

Review: a for loop

for ($x = 0; $x < 5; $x++)
{
    print (“The value of x is $x\n”);
}

Exercise 1: Write a program to output the maximum given three numbers.
Exercise 2: Display the following graph on the screen (learn to use the for loop or while loop, or use nested loops)

```
# # # # #
# # # # #
# # # # #
# # # # #
# # # # #
# # # # #
```

Exercise 3: Write a program that prompts the user for 10 numbers and then prints their average.

```
# Code for Exercise 3.

prompt the user for all 10 numbers and store them in the array numbers
for ($i=0; $i<10; $i++)
{
  print ('Enter a number ($i) :');
  $numbers[$i] = <STDIN>;
}

sum up all values in the array numbers
for ($i=0; $i<10; $i++)
{
  $sum += $numbers[$i];
}

divide the sum by 10 and get the average, then print it
$average = $sum / 10.0;
print ('The average of all the 10 numbers is $average
');
```

Readability

- Long and complex programs consisting thousands of lines.
- Share your codes with others
  - A group of peoples work on the same project
  - Modify codes written by other programmers.

Good Habits for Producing Easily Readable Codes

- Structured Programming
  - Appropriate use of newlines
  - Consistently indenting of code blocks, each nested block can be indented further than the previous block
- Comments
  - Notes in your code
  - Initiating with the # character
- Descriptive variable names
Announcements:

- Lab 4 this week

- Next lecture: Monday April 16th
  - Read from/write to files & function