Self-Review – Chapter 6

6.1 Fill in the blanks in each of the following statements.

a) (//) begins a single-line comment.
b) Every statement should end with a (;).
c) The if structure is used to make decisions.
d) **Space characters, newline characters and tab characters** are known as white spaces.
e) The window object displays alert dialogs and prompt dialogs.
f) **Keywords** are reserved for use by JavaScript.
g) Methods **write** and **write in** of the **document** object write XHTML text into an XHTML document.

6.2 True / False

a) Comments cause the computer to print the text after the // on the screen when the program is executed. **True**
b) Javascript considers the variables number and NuMBER to be identical. **False**
c) The modulus operator - % can be used only with any numeric operands **True**.
d) The arithmetic operators *, %, + and - all have the same level of precedence. **False**
e) Method parseint converts an integer to a string. **False**

6.3 Write JavaScript statements to accomplish each of the following tasks

a) Declare variables c, thisIsAVariable, q76354 and number.
   ```javascript
   var c, thisIsAVariable, q76354, number;
   ```
b) Display a dialog asking the user to enter an integer. Show a default value of 0 in the text field. ```javascript
   value = window.prompt("Enter an integer", "0") ;
   ```
c) Convert a string to an integer, and store the converted value in variable age. Assume that the string is stored in string value/varage = parseInt(stringValue);
   ```javascript
   ```
d) If the variable number is not equal to 7, display "The variable number is not equal to 7" in a message dialog.
   ```javascript
   if (number != 7) window.alert("The variable number is not equal to 7") ;
   ```
e) Output a line of XHTML text that will display the message - This is a JavaScript program, on one line in the XHTML doc.
   ```javascript
   document.writeln("This is a JavaScript program") ;
   ```
f) Output a line of XHTML text that will display the message - This is a JavaScript program, on two lines in the XHTML document. Use only one statement.
   ```javascript
   document.writeln("This is a<br /> JavaScript program") ;
   ```
6.4 Identify and correct the errors in each of the following statements.

a) if (c < 7);
   window.alert (c is less than 7) ;

b) if (c = 7)
   window.alert (c is equal to 7) ;

6.5 Write a statement (or comment) to accomplish each of the following tasks

a) State that a program will calculate the product of three integers.
   // Calculate the product of three integers

b) Declare the variables x, y, z and result. var x, y, z, result;

c) Declare the variables xVal, yVal and zVal. var xVal, yVal, zVal;

d) Prompt the user to enter the first value, read the value from the user and store it in the variable xVal.
   window.prompt ("Enter first integer:", "0") ;

e) Prompt the user to enter the second value, read the value from the user and store it in the variable yVal.
   yVal = window.prompt ("Enter second integer:", "0") ;

f) Prompt the user to enter the third value, read the value from the user and store it in the variable zVal.
   window.prompt ("Enter third integer:", "0") ;

g) Convert xVal to an integer, and store the result in the variable x.
   x = parseInt (xVal) ;

h) Convert yVal to an integer, and store the result in the variable y.
   y = parseInt (yVal) ;

i) Convert zVal to an integer, and store the result in the variable z.
   z = parseInt (zVal);

j) Compute the product of the three integers contained in variables x, y and z, and assign the result to the variable result. (result = x * y * z;

k) Write a line of XHTML text containing the string The product is followed by the value of the variable result.
   document.writeln ( "<h1>The product is " + result + "</h1>" );
6.6 Using the statements you wrote in Exercise 6.5 - write a complete program that calculates and prints the product of three integers.

```html
<html>
<script type = "text/javascript">
var x, y, z, result;
var xVal, yVal, zVal;
xVal = window.prompt ("Enter first number");
yVal = window.prompt ("Enter second number");
zVal = window.prompt ("Enter third number");
x = parseInt(xVal);
y = parseInt(yVal);
z = parseInt(zVal);
result = x * y * z;
document.writeln ("<h1>The product is " + result + "<h1>");
</script>
</html>
```

Exercises – Chapter 6

6.7 Fill in the blanks in each of the following statements.

a) **Comments** are used to document a program and improve its readability.

b) The dialog capable of receiving input from the user is displayed with method `prompt` of object `window`.

c) A Javascript statement that makes a decision is the **if** statement.

d) Calculations are normally performed by **arithmetic** operators.

e) A dialog capable of showing a message to the user is displayed with method `alert` of object `window`.

6.8 Write a Javascript script that accomplish each of the following tasks:

a) Display the message "enter two numbers" using the window object. `window.prompt ("enter two numbers") ;`
b) Assign the product of variables b and c to variable a.  \[ a = b \times c \; \]

c) State that a program performs a sample payroll calculation.  “This program performs a sample payroll calculation”

6.9   True or False

a) JavaScript operators are evaluated from left to right.  \textit{True}

b) The following are all valid variable names - under\_bar, m928134, t5, j7, her\_sale$, his\_$account\_total, a, b$, c, z, z2.  \textit{True}

c) A valid JavaScript arithmetic expression with no parentheses is evaluated from left to right.  \textit{True}

d) The following are all invalid variable names: 3g, 87, 67h2, h22, 2h.  \textit{False} \textit{They must begin with a letter, $, or _}

6.10   Fill in the blanks.

a) What arithmetic operations have the same precedence as multiplication?  \textit{(/ and \%)}.

b) When parentheses are nested, which set of parentheses is evaluated first in an arithmetic expression?  \textit{Inner parentheses}.

c) A location in the computer’s memory that may contain different values at various times throughout the execution of a program is called a \textit{variable}.

6.11   What displays in the message dialog when each of the given Java Script statements is performed?  Assume that \( x = 2 \) and \( y = 3 \).

a) \texttt{window.alert("x = " + x); \ x = 2}

b) \texttt{window.alert("The value of x + x is " + (x + x)); \textbf{The value of x + x is 4}}

c) \texttt{window.alert("x "); \ x = 2}

d) \texttt{window.alert(x + y) + " = " + (y + x); \ 5}
6.12 Which of the following JavaScript statements contain variables whose values are destroyed? **Option A**

a) \( p = i + j + k + 7; \)
b) `window.alert ("variables whose values are destroyed")`;
c) `window.alert ("a = 5");`;
d) `stringVal = window.prompt ("Enter string.");`

6.13 Given \( y = ax^3 + 7 \), which of the following are correct JavaScript statements for this equation? **Option A and E**

a) \( y = a \times x \times x \times x + 7; \)
b) \( y = a \times x \times x \times (x + 7); \)
c) \( y = (a \times x) \times x \times (x + 7); \)
d) \( y = (a \times x) \times x \times 7; \)
e) \( y = a \times (x \times x \times x) + 7; \)
f) \( y = a \times x \times (x \times x + 7); \)

6.14 State the order of evaluation of the operators in each of the following JavaScript statements, and show the value of \( x \) after each statement is performed.

a) \( x = 7 + 3 \times 6 / 2 - 1 \)
b) \( x = 2 \% 2 + 2 \times 2 - 2 / 2 \)
c) \( x = (3 \times 9 \times (3 + (9 \times 3 / (3)))) \)

6.15 Write a script that displays the numbers 1 to 4 on the same line, with each pair of adjacent numbers separated by one space. Write the program using the following methods:

a) Using one `document.write` statement.
   ```javascript```
document.writeln (1,2,3,4);
```

b) Using four `document.write` statements.
   ```javascript```
document.write (1); document.write (2); document.write (3); document.write (4);
```