MATH EXPRESSIONS

Assignment # 5-7

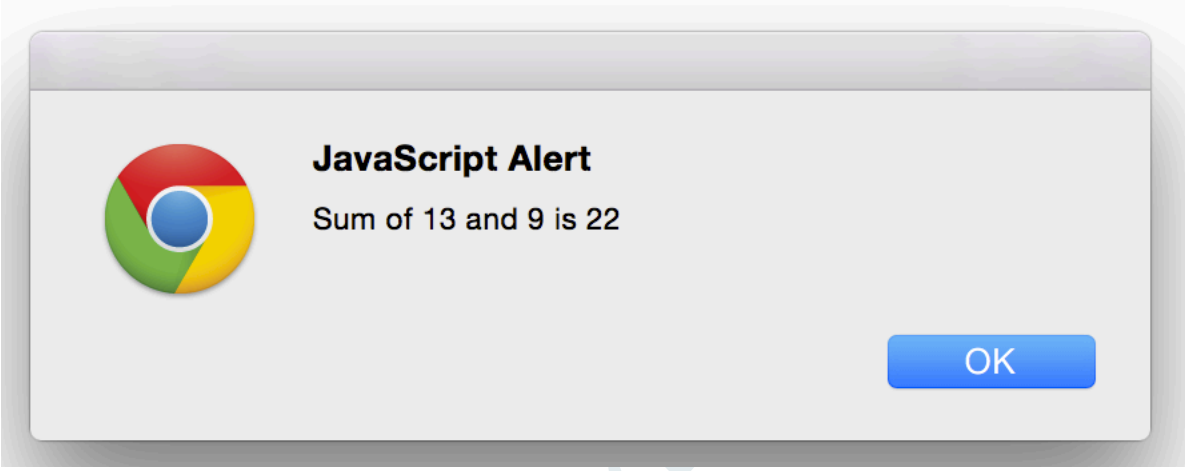
JAVASCRIPT

MODULE A - Mobile & Cloud Computing

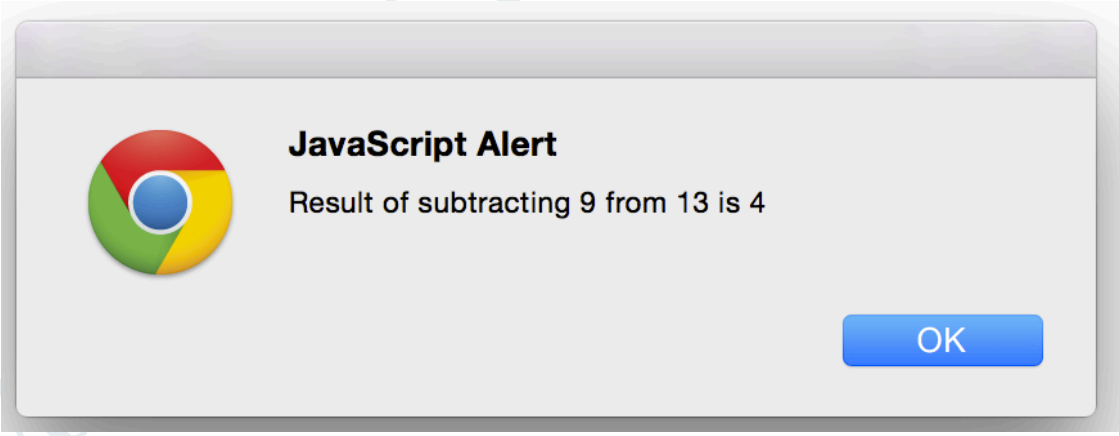
MATH EXPRESSIONS

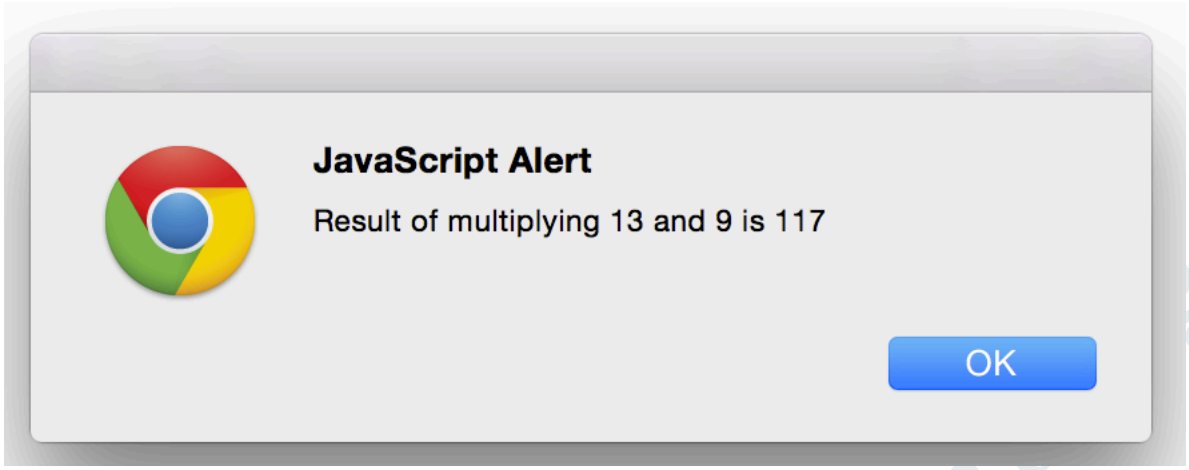
| FAMILIAR OPERATORS | UNFAMILIAR OPERATORS | ELIMINATING AMBIGUITY |

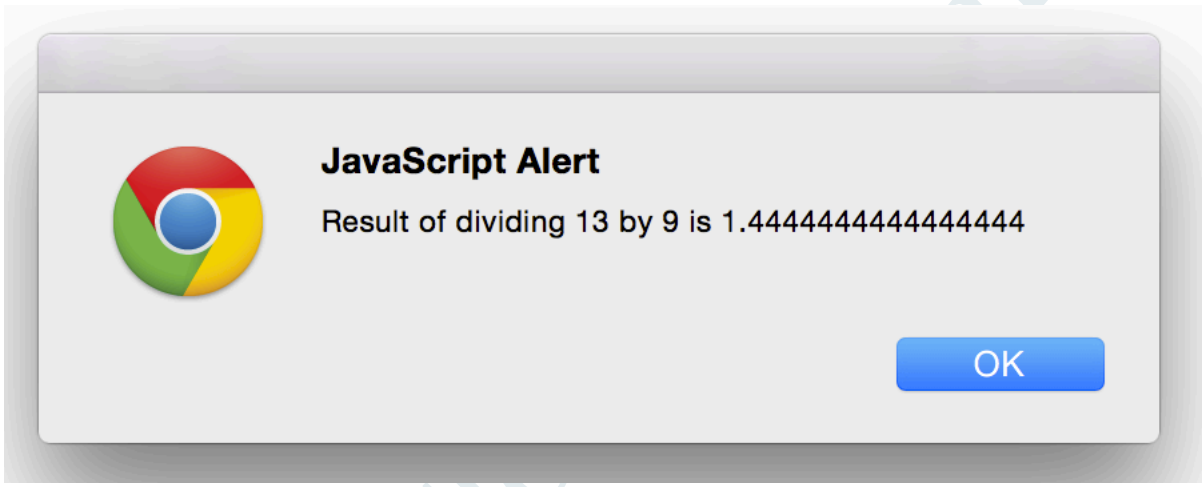
1. Write a program that take two numbers & add them in a new variable. Show the result in your browser.

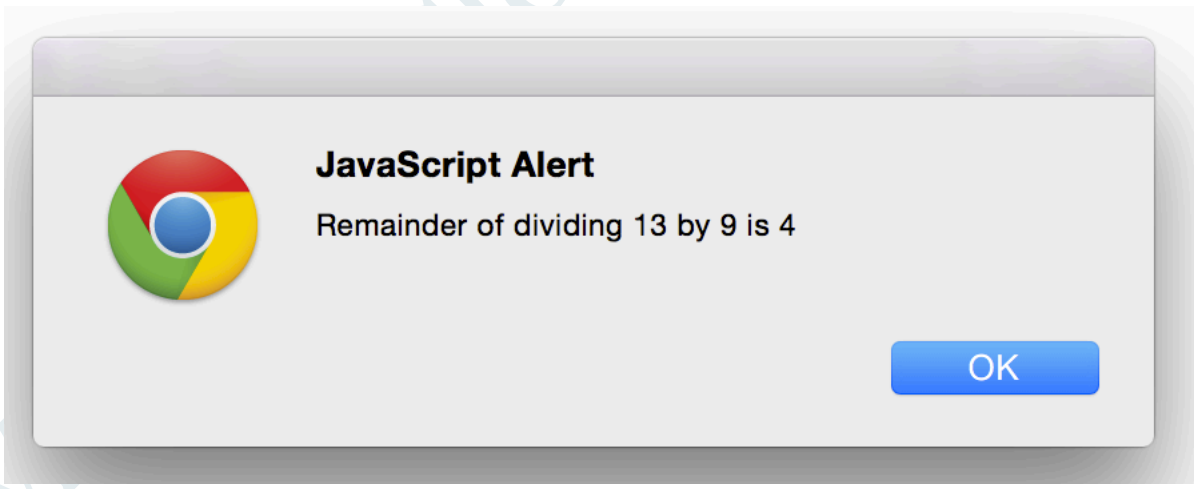


2. Repeat task1 for subtraction, multiplication, division & modulus. E.g.



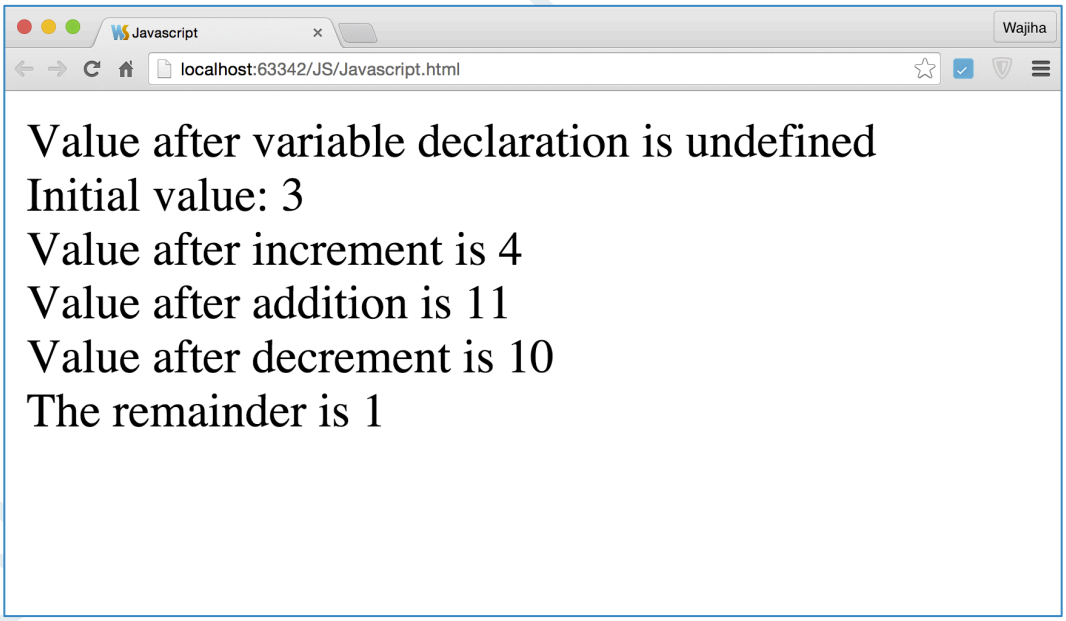




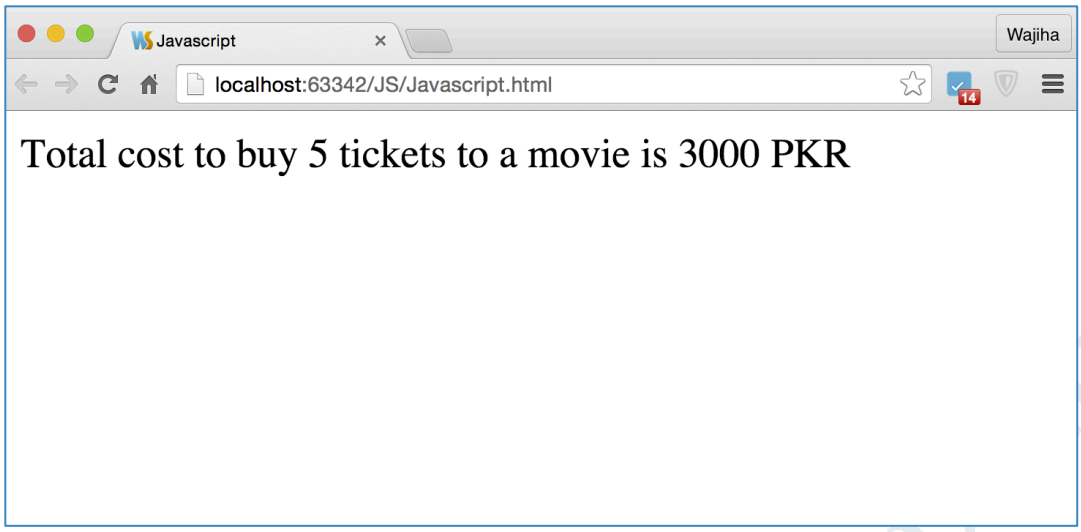


3. Do the following using JS Mathematic Expressions
    a. Declare a variable.
    b. Show the value of variable in your browser like “Value after variable declaration is: ??”.

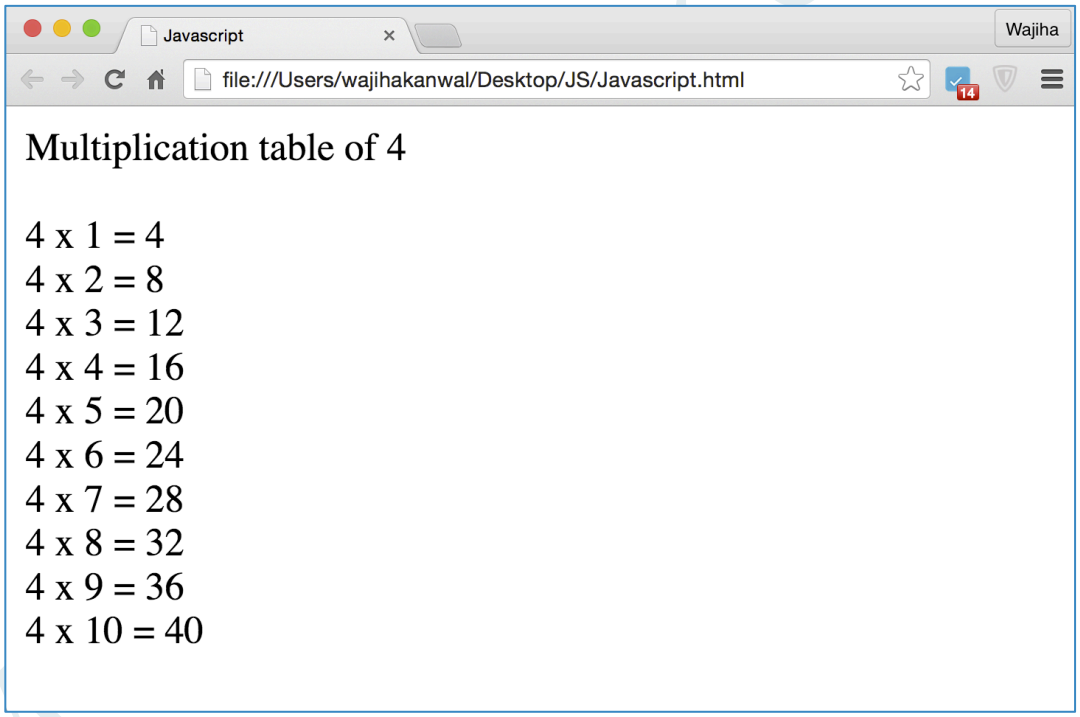
c. Initialize the variable with some number.
d. Show the value of variable in your browser like “Initial value: 3”.
e. Increment the variable.
f. Show the value of variable in your browser like “Value after increment is: 4”.
g. Add 7 to the variable.
h. Show the value of variable in your browser like “Value after addition is: 11”.
i. Decrement the variable.
j. Show the value of variable in your browser like “Value after decrement is: 10”.
k. Show the remainder after dividing the variable’s value by 3. Output : “The remainder is : 1”



4. Cost of one movie ticket is 600 PKR. Write a script to store ticket price in a variable & calculate the cost of buying 5 tickets to a movie. Example output:



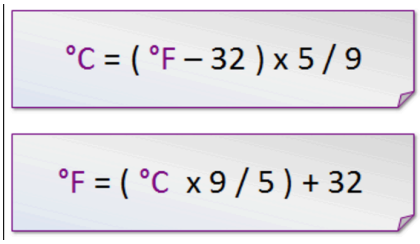
5. Write a script to display multiplication table of any number in your browser. E.g.



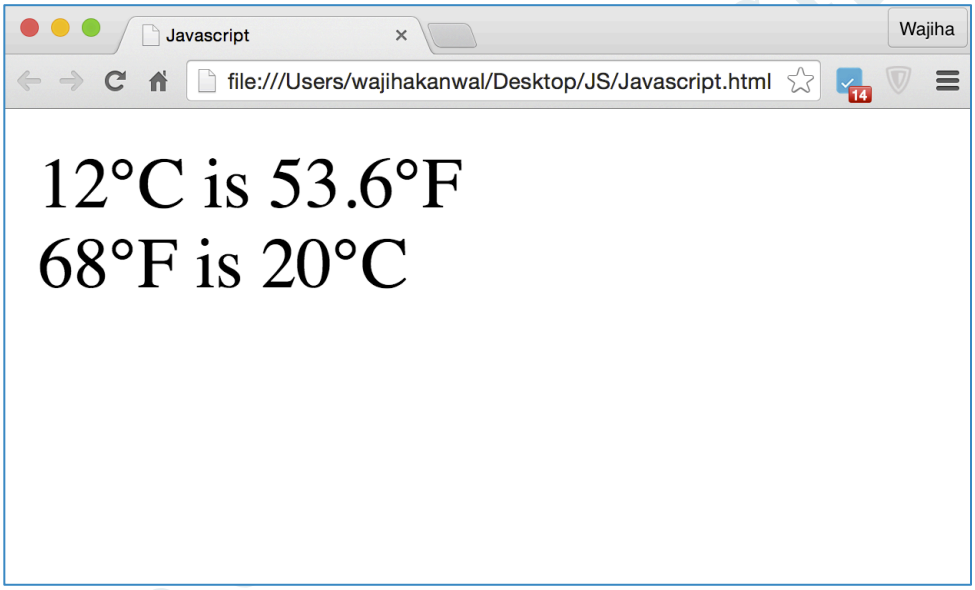
6. **The Temperature Converter:** It's hot out! Let's make a converter based on the steps here.
    a. Store a Celsius temperature into a variable.
    b. Convert it to Fahrenheit & output "NN°C is NN°F".

c. Now store a Fahrenheit temperature into a variable.
d. Convert it to Celsius & output "NN°F is NN°C".

Conversion Formulae:

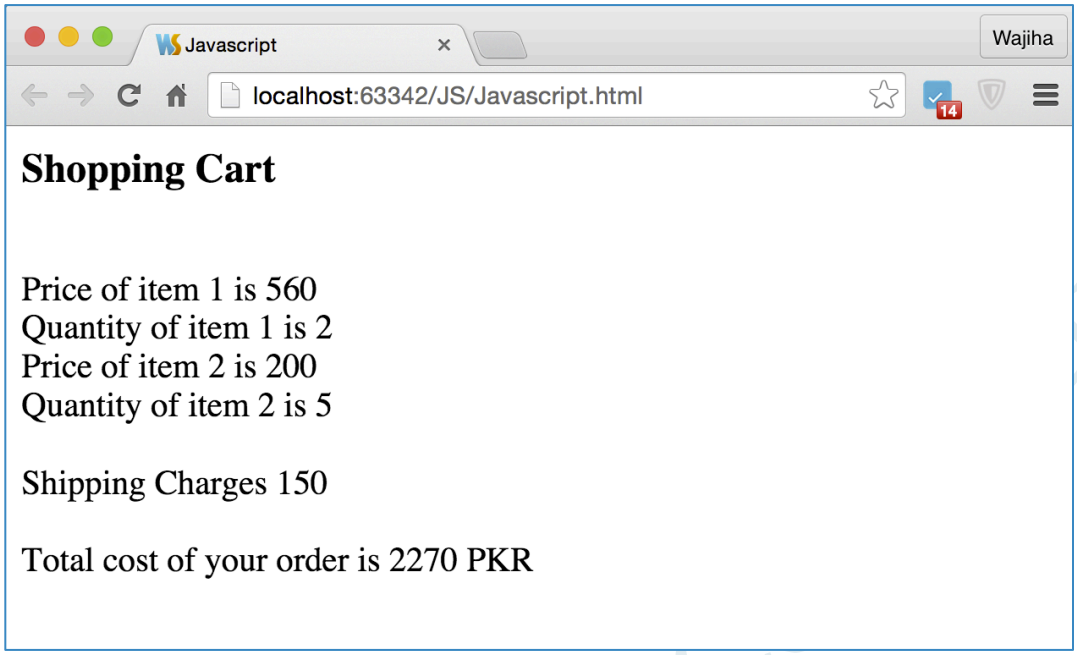


Example Output:

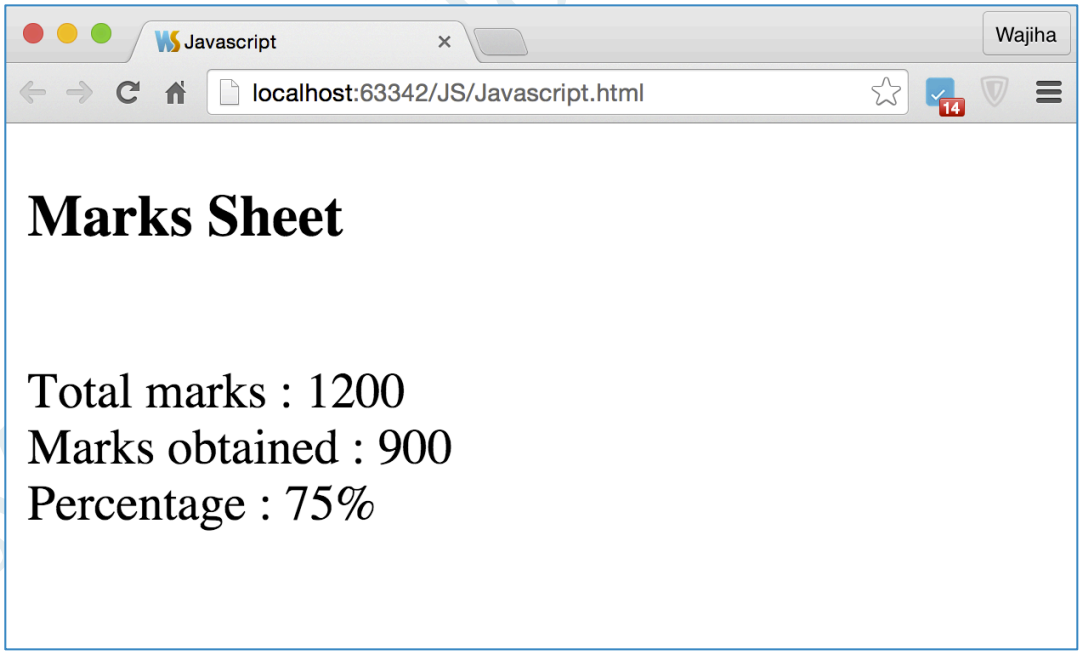


7. Write a program to implement checkout process of a shopping cart system for an e-commerce website. Store the following in variables
   a. Price of item 1
   b. Price of item 2
   c. Ordered quantity of item 1
   d. Ordered Quantity of item 2
   e. Shipping charges

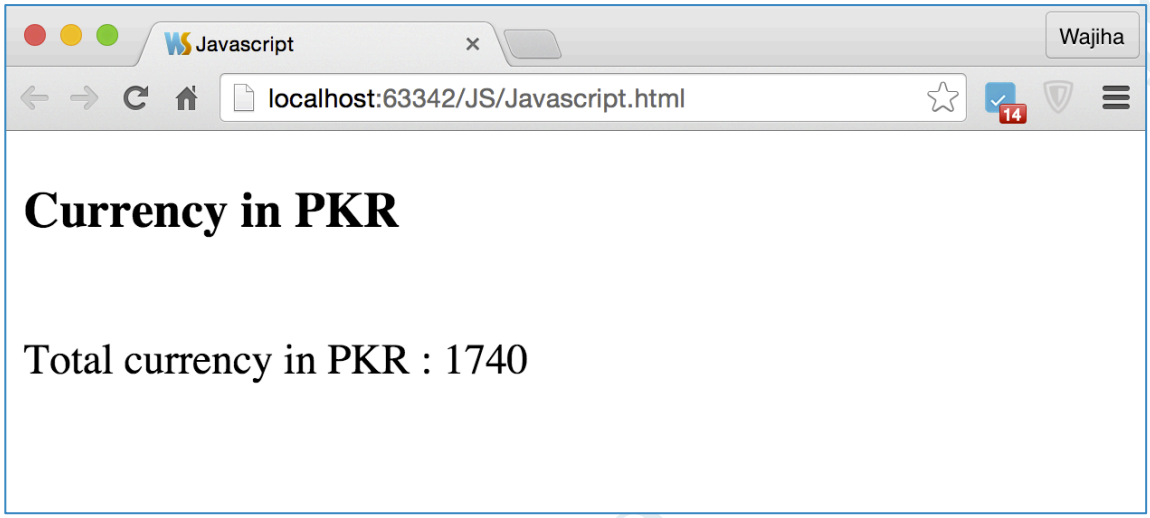
Compute the total cost & show the receipt in your browser.



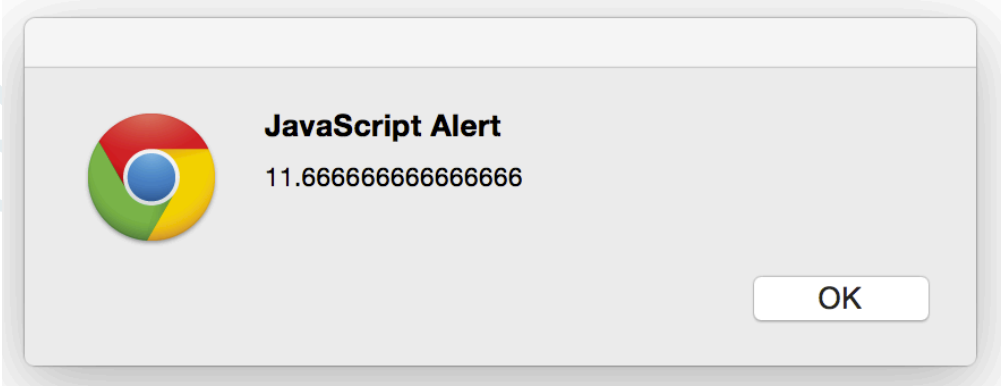
8. Write a script to take total marks & marks obtained by a student. Compute the percentage & show the result in your browser.



9. Assume we have 10 US dollars & 25 Saudi Riyals. Write a script to convert the total currency to Pakistani Rupees. Perform all calculations in a single expression.
   (Exchange rates : **1 US Dollar = 104 Pakistani Rupee** and **1 Saudi Riyal = 28 Pakistani Rupee**)

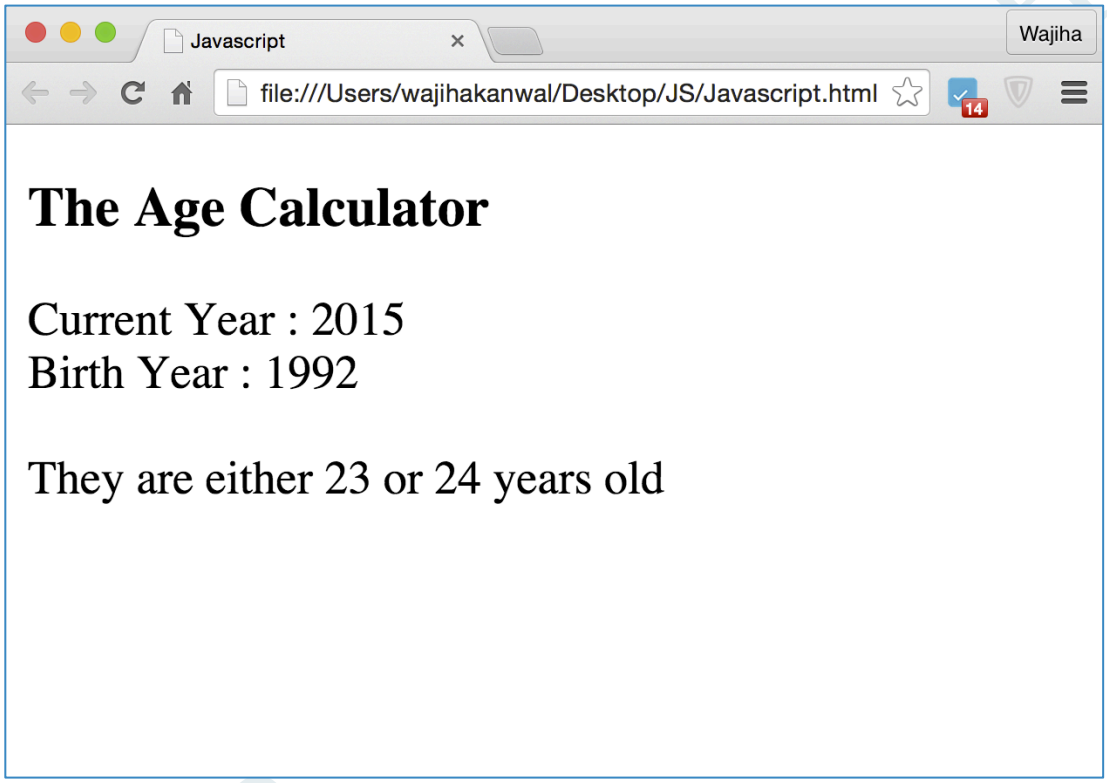


10. Write a program to initialize a variable with some number and do arithmetic in following sequence:
    a. Add 5
    b. Multiply by 10
    c. Divide the result by 2
    Perform all calculations in a single expression.



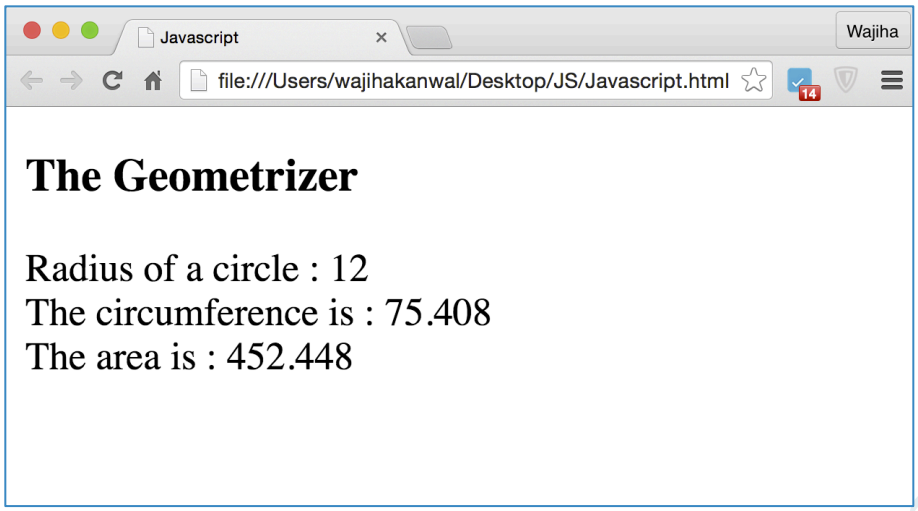
11. **The Age Calculator:** Forgot how old someone is? Calculate it!
    a. Store the current year in a variable.
    b. Store their birth year in a variable.
    c. Calculate their 2 possible ages based on the stored values.

    Output them to the screen like so: "They are either NN or NN years old".

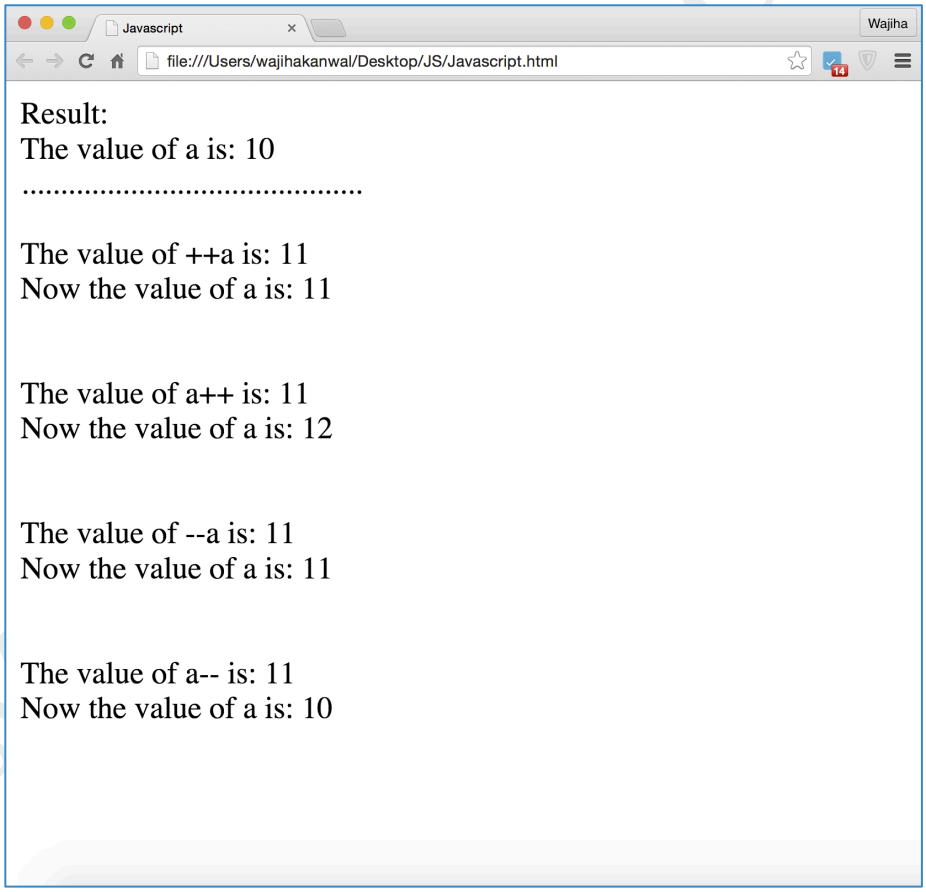


12. **The Geometrizer:** Calculate properties of a circle.
    a. Store a radius into a variable.
    b. Calculate the circumference based on the radius, and output "The circumference is NN".
       (Hint : Circumference of a circle = 2 π r , π = 3.142)

    Calculate the area based on the radius, and output "The area is NN". *(Hint : Area of a circle = π r², π = 3.142)*



13. Write a program to take a number in a variable, do the required arithmetic to display the following result in your browser:

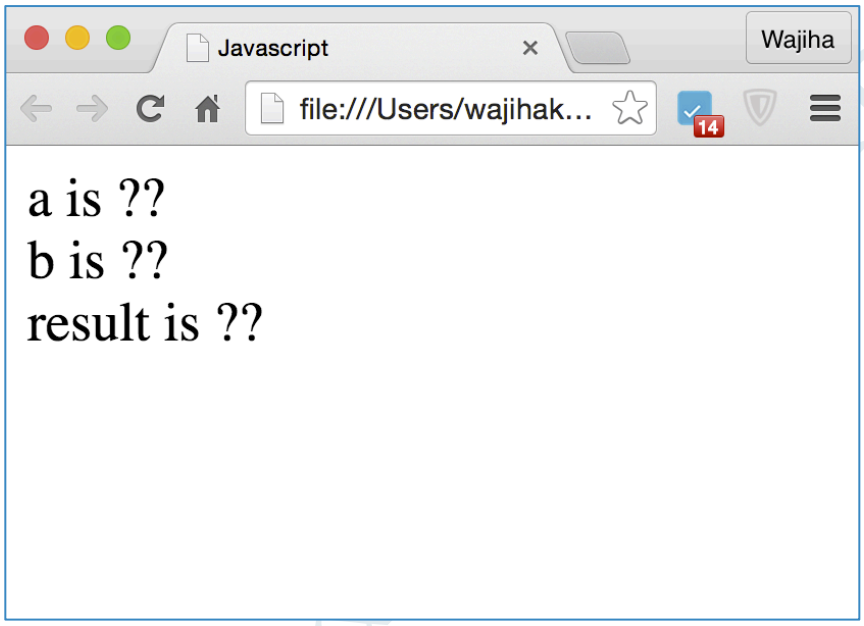


14. What will be the output in variables ***a***, ***b*** & ***result*** after execution of the following script:

```
var a = 2, b = 1;
var result = --a  -  --b  +  ++b  +  b--;
```

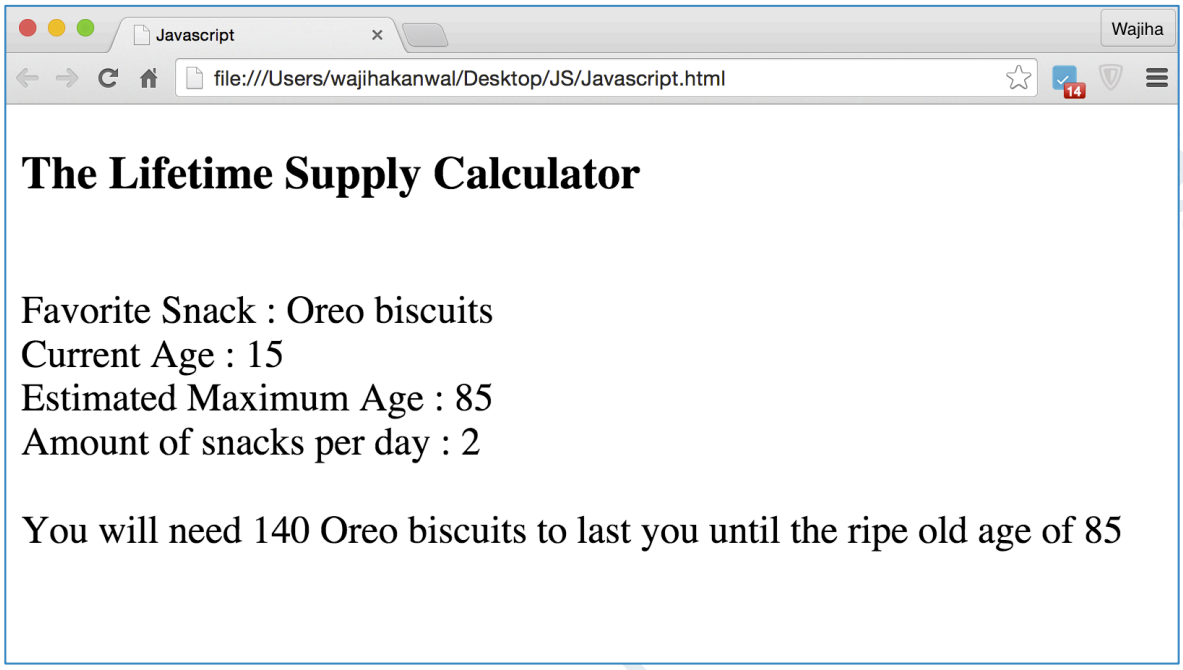
Explain the output at each stage:

```
--a;
--a  -  --b;
--a  -  --b  +  ++b;
--a  -  --b  +  ++b  +  b--;
```



15. **The Lifetime Supply Calculator:** Ever wonder how much a "lifetime supply" of your favorite snack is? Wonder no more.
    a. Store your favorite snack into a variable
    b. Store your current age into a variable.
    c. Store a maximum age into a variable.
    d. Store an estimated amount per day (as a number).
    e. Calculate how many would you eat total for the rest of your life.

Output the result to the screen like so: “You will need NNNN to last you until the ripe old age of NN”.



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