Java Script Assignments

Assignment-1

 Arithmetic operators

1. Create a variable add, and assign it the sum of a and b.

Let a=5

Let b=5

let a = parse Float(prompt("Enter the value of a:"));

let b = parse Float(prompt("Enter the value of b:"));add=a + b;

console.log(add);

o/p=10

1. Create a variable sub, and assign it result of b subtracted from a

Let a=5

Let b=5

let a = parse Float(prompt("Enter the value of a:"));

let b = parse Float(prompt("Enter the value of b:"));sub=a - b;

console.log(sub);

o/p=0

1. Create a variable mul , and assign it the product of a and b

Let =5

Let=5

let a = parse Float(prompt("Enter the value of a:")); let b = parse Float(prompt("Enter the value of b:")); Mul=a\*b;

Console. log(Mul);

o/p=25

1. Create a variable div, and assign it the result of a divided by b

Let a=5

Let b=5

let a = parse Float(prompt("Enter the value of a:")); let b = parse Float(prompt("Enter the value of b:"));div=a% b;

Console. log(div);

o/p=1

1. Create a variable, inc , and assign it the pre-incremented value of a

Let a=5 //6Let b=5

Let res=++a/ pre-increment to the a value Cosole.log(res); o/p=6

1. Create a variable dec, and assign it the pre-decremented value of b

Let a =5

Let b=5//4

Let res=--b pre- dec b value

o/p=4

Solve the following (need to mention the values of a and b at every step)

// solve

Var a= 5; var b=8

1. var d = ++a + ++a - --b +b - --a + a++ + a++ \* ++b) + (a-- / --b);

* d = 6 + 7 - 7 + 7 - 6 + 6 + 56 + 1.142857;
* d = 70.14;

1. var e = a++ - b++ + (--b \* a++) + b++ + b + a++ + (a++ % b++);

* e = 5 - 8 + (8 \* 6) + 8 + 9 + 7 + (8 % 9);
* e = 77

1. var g = b-- - b + -- b + b + ++b - a + ++b - b + b++ - a++ + b++ + b

let var g = 8 - 7 + 6 + 6 + 7 - 5 + 8 - 8 + 8 - 5 + 9 + 10;

console. Log (var g);

g=37

1. var h = a++ + b + ++a + (--a \* b) + b - (b/a) + (a/b) + (a\*\*b) + (a\*2)++ + ++(b\*2)

let var h = 5 + 8 + 7 + 48 + 8 - (8/6) + (6/8) + 1679616 + 12 + 17;

console. Log (var h);

h ≈ 1679720.416

1. Write a JavaScript code to calculate and print the power of 2 raised to the 3rd power.

Answer:

let power Result = Math. Pow (2, 3);

console .log ("2 raised to the power of 3 is: " + power Result);

1. Write a JavaScript code to calculate and print area of triangle, rectangle, circle, Square. Take input from the users

Answer:

// Calculate the area of a triangle

let base = parse Float(prompt("Enter the base of the triangle:"));

let height = parse Float(prompt("Enter the height of the triangle:"));

let triangle Area = 0.5 \* base \* height; =0.5 \*4 \*5

console.log ("Area of the triangle is: " + triangle Area);

o/p=10

// Calculate the area of a rectangle

let length = parse Float(prompt("Enter the length of the rectangle:"));

let width = parse Float(prompt("Enter the width of the rectangle:"));

let rectangle Area = length \* width; = 5\*6

console. Log ("Area of the rectangle is: " + rectangle Area);

o/p= 30

// Calculate the area of a circle

let radius = parse Float(prompt("Enter the radius of the circle:"));

let circle Area = Math. PI \* Math. Pow (radius, 2); = 5

console. log("Area of the circle is: " + circle Area);

o/p=78.54

// Calculate the area of a square

let side = parse Float(prompt("Enter the side length of the square:"));

let square Area = Math. pow(side, 2); = 5

console. Log ("Area of the square is: " + square Area);

o/p=25

Java script assignment-2

Level:1:

1. Declare first Name, last Name, country, city, age, is Married, and year

variable and assign value to it and use the type of operator to check

different data types

Boolean

var first Name = 'Karthik';

var last Name = 'Arjun;

var country = 'USA';

var city = 'New York';

var age = 21;

var is Married = false; // Boolean

var year = 2024;

console.log ('first Name:', type of first Name);

console.log ('last Name:', type of last Name);

**console.log ('country:', type of country);**

**console.log('city:', type of city);**

**console.log('age:', type of age);**

**console.log('is Married:', type of is Married);**

**console.log('year:', type of year);**

**o/p karthik**

**Arjun**

**USA**

**New York**

**21**

**False**

**2.Check if the type of '10' is equal to 10**

**console.log (type of '10' == type of 10); // This checks if the types are the same**

**o/p=> false because '10' is a string and 10 is a number.**

1. **Check if parse Int ('9.8') is equal to 10**

**console.log (parse Int('9.8') === 10);**

console.log(parse Int('9.8')); // 9

console.log(parse Int('9.8') === 10); // false

o/p=> False

4. The boolean value is either true or false.

● Write three JavaScript statements that provide truthy value.

**1.Non-empty string**:

if ('Hello') {

console.log ('This is truthy'); // Output: This is truthy

}

2. **Non-zero number**:

if (42) {

console.log ('This is truthy'); // Output: This is truthy

}

**3.Array (even an empty one)**:

if ([]) {

console.log ('This is truthy'); // Output: This is truthy

}

● Write three JavaScript statements that provide falsy value.

1.Zero (0)

if (0) {

console.log ('This will not print');

} else {

console.log ('0 is falsy'); // Output: 0 is falsy

}

2.Empty string(“ )

if ('') {

console.log ('This will not print');

} else {

console.log ('An empty string is falsy'); // Output: An empty string is falsy

}

4.**null**:

if (null) {

console.log ('This will not print');

} else {

console.log ('null is falsy'); // Output: null is falsy

}

5.Given the following declarations, what are the new values of each

variable after the given statement?

● var x = 10;

● var y = 15;

● var z = 6;

● var a, b, c;

1. x += 2 \* y; 2. y -= x / --z; 3.z += x-- + 5; 4.y /= z + 2; 5.x \*= ++y - z—

**x += 2 \* y**

Calculate

2\*y;  
2∗15 = 30

Update

X  
x=x+30 = 10+30 =40

New value x=40

2. y -= x / --z;

Decrement z first (--z):

z=6−1=5

Calculate x / --z:

40/5=8

Update   
y= y− 8 = 15-8 =7

**New value of y**: 7

3.z += x-- + 5;

Use the current value of x (x = 40) before decrementing (x--), so x-- is 40.

Update x after the expression to 39.

Calculate x-- + 5:

40+5=45

Update z:

z=5+45=50

**New values**: z = 50 x = 39

4.y /= z + 2;

Calculate

z+2;  
50+2=52

Update y:

y=y/52 => 7/52≈0.1346

**New value of y**: 0.1346 (approximately)

5.x \*= ++y - z--;

Increment y first (++y):

Y = 0.1346 + 1 =1.1346

Use the current value of z (z = 50) before decrementing (z--), so z-- is 50.

Update z after the expression to 49.

Calculate ++y - z--:

1.1346−50=−48.8654

Update

X =value

x=39∗(−48.8654)≈−1905.76

**New values**: x ≈ -1905.76, z = 49, y = 1.1346

6. Figure out the result of the following comparison

1. 4 > 3,2. 4 >= 3 ,3. 4 < 3 ,4. 4 <= 3 ,5. 4 == 4 ,6. 4 === 4,7. 4! = 4 ,8. 4! == 4 ,9. 4 !='4'

10. 4 == '4' ,11. 4 === '4'

1. 4 > 3

Checks if 4 is greater than 3.

**Result**: true

Console.log (4>3)

2. 4 >=3

Checks if 4 is greater than or equal to 3.

**Result**: true

Console.log (4>=3)

* 1. <3

Checks if 4 is less than 3.

**Result**: false

Console.log (4<3)

* 1. <=3

Checks if 4 is less than or equal to 3.

**Result**: false

Console.log (4<=3)

5.4 == 4

Checks if 4 is equal to 4 (loose equality).

**Result**: true

Console.log (4==4)

6.4 === 4

Checks if 4 is strictly equal to 4 (strict equality, including type).

**Result**: true

Console.log (4===4)

7.4! = 4

Checks if 4 is not equal to 4 (loose inequality).

**Result**: false

Console.log (4!=4)

8.4! == 4

Checks if 4 is not strictly equal to 4 (strict inequality, including type)

**Result**: false

Console.log (4! == 4)

**9.4! = ‘4’**

Checks if 4 is not equal to '4' (loose inequality).

**Result**: false

Console.log (4! = ‘4’)

10. 4 == ‘4’

Checks if 4 is equal to '4' (loose equality). JavaScript performs type coercion, converting the string '4' to a number 4.

**Result**: true

Console.log (4==’4’)

11. 4 === ‘4’

Checks if 4 is strictly equal to '4' (strict equality, including type). Here, 4 (number) is not the same type as '4' (string).

**Result**: false

Console.log (4 === ’4’)

7. Figure out the result of the following expressions

1. 4 > 3 && 10 < 12

Let a =4 > 3 && 10 < 12

Console.log(a)

True

2. 4 > 3 && 10 > 12

Let a=4 > 3 && 10 > 12 = false

4 > 3 => true

Console.log(a)

False

1. 4 > 3 || 10 < 12

4 > 3 evaluates to true.

10 < 12 evaluates to true.

True

1. 4 > 3 || 10 > 12

Let a = 4 > 3 || 10 > 12

4 > 3 evaluates to true.

10 > 12 evaluates to false.

Console.log(a)

True

5.! (4 > 3)

Let a =! (4 > 3)

Console.log(a)

False

6.! (4 < 3)

Let a =! (4 < 3)

4 < 3 evaluates to false.

True

7.!(false)

false is false.

! (logical NOT) operator negates the result.

True

8 !(4 > 3 && 10 < 12)

Let a =! (4 > 3 && 10 < 12)

Console.log(a)

True

9.! (4 > 3 && 10 > 12)

Let a = ! (4 > 3 && 10 > 12)==

4 > 3 evaluates to true.

10 > 12 evaluates to false.

Console.log(a)

True

10.! (4 === '4')

Let a = ! (4 === '4')

4 === '4' checks for strict equality (same value and type).

4 (number) is not strictly equal to '4' (string), so 4 === '4' evaluates to false.

Console.log(a)

True

LEVEL -2

1. Write a script that prompts the user to enter the base and height of

the triangle and calculate the area of a triangle (area = 0.5 x b x h).

let base = parse Float(prompt("Enter the base of the triangle:"));

let height = parse Float(prompt("Enter the height of the triangle:"));

let area = 0.5 \* base \* height; = 0.5 \* 5 \* 8

onsole.log (`The area of the triangle is: ${area}`);

alert(`The area of the triangle is: ${area}`);

o/p = 20

2. Write a script that prompts the user to enter side a, side b, and side c

of the triangle and calculate the perimeter of the triangle (perimeter

= a + b + c) a= 10 , b = 10 , c = 10

let side A = parse Float(prompt("Enter the length of side a:"));

let side B = parse Float(prompt("Enter the length of side b:"));

let side C = parse Float(prompt("Enter the length of side c:"));

let perimeter = side A + side B + side C;

console.log(`The perimeter of the triangle is: ${perimeter}`); alert(`The perimeter of the triangle is: ${perimeter}`);

P = 10 + 10 + 10

P = 30

3. Get length and width using the prompt and calculate the area of a

rectangle (area = length x width and the perimeter of the rectangle

(perimeter = 2 x (length + width)) L= 8 B = 5

let length = parse Float(prompt("Enter the length of the rectangle:"));

let width = parse Float(prompt("Enter the width of the rectangle:"));

let area = length \* width;

let perimeter = 2 \* (length + width);

console.log(`The area of the rectangle is: ${area}`);

console.log(`The perimeter of the rectangle is: ${perimeter}`);

Area = 40

Perimeter = 26

4. Get the radius using the prompt and calculate the area of a circle

(area = pi x r x r) and the circumference of a circle (c = 2 x pi x r)

where pi = 3.14.

Area=π×r2

Circumference=2×π×r

where π=3.14

const pi = 3.14;

let radius = parse Float(prompt("Enter the radius of the circle:"));

let area = pi \* radius \* radius; = r = 8

let circumference = 2 \* pi \* radius;

console.log The area of the circle is: ${area}`);

console.log (`The circumference of the circle is: ${circumference}`);

Area= 200.96

Circumference = 50.24

5.Calculate the slope, x-intercept, and y-intercept of y = 2x -2

To calculate the slope, x-intercept, and y-intercept of the linear equation:

Y = 2x − 2

we can use the standard form of a linear equation: y = mx + b

m is the **slope**.

b is the **y-intercept** (the value of y when x = 0).

In the equation y=2x−2 the coefficient of x is 2.

M=2

Y-Intercept (b):

The y-intercept b is the constant term, which is the value of y when x=0

y=2x−2

b = -2

X-Intercept:

The x-intercept is the value of xxx when y=0

Y = 0

0 = 2x -2

2x = 2

X = 1

6. Slope is m = (y2-y1)/(x2-x1). Find the slope between point (2, 2)

and point (6,10)

the slope mmm between two points (x1 , y1)and (x2​,y2​), we use the slope formula:

m=x2​−x1​/y2​−y1

Point 1: (x1,y1)=(2,2)

Point 2: (x2,y2)=(6,10)

m=6−2/10−2​

m=4/8 m= 2

7.Write a script that prompts a user to enter hours and rate per hour.

Calculate the pay of the person.​

Pay=hours × rate per hour

let hours = parse Float(prompt("Enter the number of hours worked:"));

let rate Per Hour = parse Float(prompt("Enter the rate per hour:"));

let pay = hours \* rate Per Hour;

console.log(`The pay of the person is: $${pay to Fixed(2)}`);

result

Total pay is: 390 [string.js:189:9](http://127.0.0.1:5501/string.js)

Live reload enabled.

8.find the sum of two numbers

let num1 = parse Float(prompt("Enter the first number:"));

let num2 = parse Float(prompt("Enter the second number:"));

let sum = num1 + num2; // 5 + 5

console.log(`The sum of ${num1} and ${num2} is: ${sum}`);

o/p = 10

9.find the division of two numbers

Result = Dividend / Divisor​

Console. Log(Result)

The quotient of 65 divided by 65 is: 1 [string.js:202:9](http://127.0.0.1:5501/string.js)

10. find the average of the given five numbers

Average= Sum of all five numbers / 5​

= 1+2+3+4+5 /5

Console.log(avg) => o/p= 3

11. convert the given seconds into hours

Hours = seconds / 3600

Console.log(hours)

8 seconds is equal to 0.0022222222222222222 hours. [string.js:207:9](http://127.0.0.1:5501/string.js)

12. convert the given meters into milli meters

Millimeters = Meters × 1000

o/p=

556 meters is equal to 556000 millimeters. [string.js:212:9](http://127.0.0.1:5501/string.js)

13. convert given rupees into dollars

let rupees = parseFloat(prompt("Enter rupees to convert to dollars: "));

const conversionRate = 0.012; // Example rate, adjust as needed

let dollars = rupees \* conversionRate;

console.log(`${rupees} rupees is equal to ${dollars} dollars.`);

o/p =

6586 rupees is equal to 79.032 dollars. [string.js:218:9](http://127.0.0.1:5501/string.js)

14. find the simple interest

Simple Interest (SI) = P × R × T/100

P is the principal amount (initial sum of money)

R is the rate of interest per annum

T is the time period in years​

o/p🡺

Simple Interest is: 148376163.84 [string.js:154:9](http://127.0.0.1:5501/string.js)

15. If a is greater than b return a is greater than b' else 'a is less than

b'.? using ternary operator.

result = 'a is greater than b' if a > b else 'a is less than b'

console.log(result)

o/p 🡺

56 is less than 213 [string.js:161:9](http://127.0.0.1:5501/string.js)

16. check given number is even or odd. using the ternary operator.

number = 5 # Replace this with the given number

result = "Even" if number % 2 == 0 else "Odd"

print(result)

o/p==

The number 76 is Even. [string.js:166:9](http://127.0.0.1:5501/string.js)

17. check given number is positive or negative. using the ternary

operator.

number = -3 # Replace this with the given number

result = "Positive" if number >= 0 else "Negative"

print(result)

o/p ==

The number 54 is Positive. [string.js:172:9](http://127.0.0.1:5501/string.js)

18. check given number is divisible by 5 or not. using the ternary

operator.

number = 20 # Replace this with the given number

result = "Divisible by 5" if number % 5 == 0 else "Not divisible by 5"

print(result)

o/p ==

The number 46 is Not divisible by 5. [string.js:177:9](http://127.0.0.1:5501/string.js)

19. check given number is divisible by 2,3 and 4 or not. using the

ternary operator.

number = 24 # Replace this with the given number

result = "Divisible by 2, 3, and 4" if number % 2 == 0 and number % 3 == 0 and number % 4 == 0 else "Not divisible by 2, 3, and 4"

print(result)

o/p ==

The number 68 is Not divisible by 2, 3, and 4. [string.js:182:9](http://127.0.0.1:5501/string.js)

20. check given year is a leap year or not.

year = 2024 # Replace this with the given year

result = "Leap year" if (year % 4 == 0 and (year % 100 != 0 or year % 400 == 0)) else "Not a leap year"

print(result)

**o/p ==**

**The year 65 is Not a leap year.** [**string.js:144:9**](http://127.0.0.1:5501/string.js)