Java Script Tasks

1. Declare a boolean variable `isRaining` and use an operator to flip its value.
a
2. Write a program that converts a temperature in Celsius to Fahrenheit.

3. Create a variable `age` and use a ternary operator to log "Adult" if age is 18 or more, and "Minor" otherwise.

4. Write a program that checks if a given number is positive, negative, or zero.

5. Create a variable `day` and log "Weekend" if the day is Saturday or Sunday; otherwise, log "Weekday." (Use Date)

6. Use an `if` statement to check if a string contains more than 10 characters.

7. Write a function `capitalizeWords` that capitalizes the first letter of each word in a string.

8. Write a `for` loop that prints the multiplication table of 5.

9. Write a `for` loop to find the factorial of a number.

10. Write a function `findMax` that accepts an array and returns the largest number.

11. Create a function findDuplicates that returns an array of duplicate elements in an array.

12. employees = { 'Alice': 50000, 'Bob': 60000, 'Charlie': 55000, 'Diana': 65000 }
Use a for-in loop to calculate the total salary of employees stored in an object.

13. Take one String “abracadabra” Count Vowels and Consonants

14Star pattern using while loop

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15.
JSON Data Manipulation

```
{
   "employees": [
      {
         "id": 1,
         "name": "John Doe",
         "department": "HR",
         "Salary": 50000
      },
      {
         "id": 2,
         "name": "Jane Smith",
         "department": "Finance",
         "Salary": 60000
      },
      {
         "id": 3,
         "name": "Michael Johnson",
         "department": "IT",
         "Salary": 75000
      }
   ]
}
```

i) Calculate the total salary of all employees.
ii) Find the employee with the highest salary.
iii) Find the employee with the lowest salary.
iv) Print the names of all employees sorted alphabetically.

16. Pascal case to snake case: MyNameIsVisualappFoundry

17. find the leap year

18. Find the last day of the current month

19. check whether the date is in the future or not :(by input)

20. find and calculate the day of Sundays and their date in the two in-between dates

21.

```
{
  "employees": [
    {
      "name": "Alice",
      "age": 30,
      "department": "Sales",
```

```
      "sales": [1500, 1200, 1800, 2000]
    },
    {
      "name": "Bob",
      "age": 25,
      "department": "Marketing",
      "sales": [1000, 900, 1200, 1400]
    },
    {
      "name": "Charlie",
      "age": 28,
      "department": "Sales",
      "sales": [2000, 2100, 1900, 1800]
    },
    {
      "name": "David",
      "age": 32,
      "department": "Marketing",
      "sales": [1100, 950, 1350, 1200]
    }
  ]
}
```

a) Calculate and print the total sales for each department.
b) Find and print the name(s) of the employee(s) with the highest total sales.
c) Calculate and print the average age of employees in each department.
d) Find and print the name(s) of the employee(s) with the highest average sales.

22.Remove Duplicates:abracadabra

23. find the yesterday's date

24. calculate the age

25.
Build an interactive quiz using Javascript

```
quiz_questions = [
        ("What is the capital of France?", ["London", "Paris", "Berlin"], "Paris"),
        ("Which planet is known as the 'Red Planet'?", ["Venus", "Mars", "Jupiter"], "Mars"),
        ("What is the chemical symbol for water?", ["H2O", "CO2", "O2"], "H2O"),
        ("What is 2 + 2?", ["3", "4", "5"], "4"),
        ("Which is the largest mammal?", ["Elephant", "Blue Whale", "Giraffe"], "Blue Whale"),
    ]
```

```
26.obj1 = {'name': 'Alice', 'age': 25, 'city': 'New York'}
    obj2 = {'age': 30, 'city': 'San Francisco', 'occupation': 'Engineer'}
```

Write a function mergeObjects that merges two objects, giving priority to the second object in case of conflicts.

Output
:{'name': 'Alice', 'age': 30, 'city': 'San Francisco', 'occupation': 'Engineer'}

27.Write a function `mergeArrays` that accepts two arrays and returns a single merged array. (Use Only Operator)

28.
const array1 = [1, 2, 3];
const array2 = ['a', 'b', 'c', 'd'];

Write a function zip that takes two arrays and returns an array of pairs.

[[1, 'a'], [2, 'b'], [3, 'c']]

29. Any numbers I will give as input from start to end
i) Print Even Numbers
ii) Print Odd Numbers
iii) Sum the total even numbers
iv) Sum the total Odd numbers
v) Total count of Even numbers and odd numbers
vi) Sum of all numbers

30. Star pattern print as same before but what value i'm giving in input till it should print start using the while loop

31. {
  "university": "ABC University",
  "location": "City XYZ",
  "courses": [
    {
      "course_name": "Computer Science",
      "duration": "4 years",
      "professors": [
        {
          "name": "Professor A",
          "age": 40,
          "specialization": "Algorithms"
        },
        {

```
        "name": "Professor B",
        "age": 35,
        "specialization": "Database Systems"
      }
    ],
    "students": [
      {
        "name": "Alice",
        "age": 20,
        "semester": 6
      },
      {
        "name": "Bob",
        "age": 22,
        "semester": 8
      }
    ]
  },
  {
    "course_name": "Electrical Engineering",
    "duration": "5 years",
    "professors": [
      {
        "name": "Professor C",
        "age": 45,
        "specialization": "Power Systems"
      },
      {
        "name": "Professor D",
        "age": 38,
        "specialization": "Control Systems"
      }
    ],
    "students": [
      {
        "name": "Charlie",
        "age": 19,
        "semester": 3
      },
      {
        "name": "David",
        "age": 21,
        "semester": 4
      }
    ]
  }
 ]
}
```

Print the university name and its location.
Find and print the course names along with their durations.
Calculate and print the average age of professors for each course.
Calculate and print the average age of students for each course.
Find and print the name(s) of the professor(s) who specialize in "Algorithms".
Find and print the name(s) of the student(s) in the highest semester for each course.

32. Write a JavaScript function to get all possible subsets with a fixed length (for example 2) combinations in an array.
Sample array : [1, 2, 3] and subset length is 2
Expected output : [[1,2],[1,3],[2,3]]

33. Write a JavaScript function to find the first not repeated character.
Sample arguments: 'abacddbec'
Expected output: 'e'

34. Write a JavaScript exercise to get the filename extension.

35. Write a JavaScript program to convert letters of a given string alphabetically.

Example
input: Python
output: Phnoty

36. Write a JavaScript program to get the current date.
Expected Output :
mm-dd-yyyy, mm/dd/yyyy or dd-mm-yyyy, dd/mm/yyyy

37. Word Frequency Counter
example output
Enter a paragraph or a series of sentences:
Hello there, how are you? I hope you are doing well. There you go!

Word Frequency:
you: 3
there: 2
hello: 1
how: 1
are: 1
i: 1
hope: 1

doing: 1
well: 1
go: 1

38. Write a simple JavaScript program to join all elements of the following array into a string.
Sample array: myColor = ["Red", "Green", "White", "Black"];
output:
"Red, Green, White, Black"
"Red+Green+White+Black"

39. Write a JavaScript function to parameterize a string.
Test Data :
input"Robin Singh from USA."
"robin-singh-from-usa"

40.Create an array of numbers and use the `filter` method to return a new array containing only the even numbers.

41.Create an array of numbers and use the `reduce` method to find the maximum value in the array.

42.Use String Methods return a modified String

The quick brown fox jumps over the lazy dog. The quick brown fox is fast.

```
// Output: "The speedy brown fox jumps over the lazy dog. The speedy brown fox is fast."
```

43.Create a traffic light simulator using a `switch` statement. Based on the color input ('red', 'yellow', or 'green'), the program should print:

- Red: "Stop"

- Yellow: "Caution"

- Green: "Go"

44. Write a JavaScript program to add items to a blank array and display them. Using promt().

45.The following arrays :
color = ["Blue ", "Green", "Red", "Orange", "Violet", "Indigo", "Yellow "];
order = ["th","st","nd","rd"]
Write a JavaScript program to display the colors in the following way :

46. Write a JavaScript function to remove. 'null', '0', '""', 'false', 'undefined' and 'NaN' values from an array.
Sample array : [NaN, 0, 15, false, -22, '',undefined, 47, null].

47. Write a JavaScript function that merges two arrays and removes all duplicate elements.
Test data :
var array1 = [1, 2, 3,5,10,12];
var array2 = [2, 30, 1,5,20,11];

48. Write a JavaScript function to get the number of days in a month.

49. Write a JavaScript function to test whether a date is a weekend.

50. Write a function to check whether a given string is a palindrome

51. Write a function that takes an array and returns a new array with duplicates removed.

52. Write a function that takes a sentence and returns the longest word in that sentence.

53. Write a program to sort an array of numbers in ascending order.

54. Write a program to count the number of vowels (a, e, i, o, u) in a given string.

55. Create a program that sorts an array of objects by a specified key. Example: Sort a list of users by their `age` property.

56. Write a program to find the missing number in an array of consecutive numbers.
Example: `findMissing([1, 2, 4, 5,6,8,11]).`

57. Write a JavaScript program to delete the rollno property from the following object. Also print the object before or after deleting the property.
Sample object:
var student = {
name : "David Rayy",
sclass : "VI",
rollno : 12 };

58. Write a JavaScript program to display the reading status (i.e. display book name, author name and reading status) of the following books.

```
var library = [
  {
     author: 'Bill Gates',
     title: 'The Road Ahead',
     readingStatus: true
  },
  {
     author: 'Steve Jobs',
     title: 'Walter Isaacson',
     readingStatus: true
  },
  {
     author: 'Suzanne Collins',
     title:  'Mockingjay: The Final Book of The Hunger Games',
     readingStatus: false
  }];
```

59. Write a JavaScript program to create a clock.
Note: The output will come every second.

60. Write a function that converts an object into an array, where each element represents a key-value pair in the form of an array.
Example:
toArray({ a: 1, b: 2 }) **Output :** [["a", 1], ["b", 2]]

toArray({ shrimp: 15, tots: 12 }) **Output :** [["shrimp", 15], ["tots", 12]].