DAY – 3

Exercises: Level 1

1. Declare firstName, lastName, country, city, age, isMarried, year variable and assign value to it and use the typeof operator to check different data types.

```
var firstName = "Priyanka";
var lastName = "Saini";
var country = "India";
var city = "Agra";
var age = 21;
var isMarried = false;
var year = 2030;

typeof firstName;
typeof lastName;
typeof country;
typeof city;
typeof age;
typeof isMarried;
typeof year;
```

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

```
if (typeof '10' == typeof 10)  console.log(true);
else  console.log(false);
```

3. Check if parseInt('9.8') is equal to 10

```
if( parseInt('9.8') == 10)  console.log("true");
else  console.log("false");
```

4. Boolean value is either true or false.

   i. Write three JavaScript statement which provide truthy value.

   ```
   True, all string except empty string(""") and all numbers
   except 0.
   ```

   ii. Write three JavaScript statement which provide falsy value.

   ```
   Null, undefined, false.
   ```

5. Figure out the result of the following comparison expression first without using console.log(). After you decide the result confirm it using console.log()

   i. $4 > 3$ **true**
   ii. $4 >= 3$ **true**
   iii. $4 < 3$ **false**

iv. $4 \leq 3$ **false**

v. $4 == 4$ **true**

vi. $4 === 4$ **true**

vii. $4 \mathrel{!}= 4$ **false**

viii. $4 \mathrel{!}== 4$ **false**

ix. $4 \mathrel{!}= \text{'4'}$ **false**

x. $4 == \text{'4'}$ **true**

xi. $4 === \text{'4'}$ **false**

xii.   Find the length of python and jargon and make a falsy comparison statement.

```
"python".length;
"jargon".length;
console.log("python".length != "jargon".length);
```

6. Figure out the result of the following expressions first without using console.log().
    After you decide the result confirm it by using console.log()

    i. $4 > 3$ && $10 < 12$ **true**

    ii. $4 > 3$ && $10 > 12$ **false**

    iii. $4 > 3$ || $10 < 12$ **true**

    iv. $4 > 3$ || $10 > 12$ **true**

    v. $!(4 > 3)$ **false**

    vi. $!(4 < 3)$ **true**

    vii. $!(false)$ **true**

    viii. $!(4 > 3$ && $10 < 12)$ **false**

    ix. $!(4 > 3$ && $10 > 12)$ **true**

    x. $!(4 === \text{'4'})$ **true**

    xi.   There is no 'on' in both dragon and python **false**

7. Use the Date object to do the following activities

    i.   What is the year today?

```
var today = new Date();
today.getFullYear();
```

    ii.   What is the month today as a number?

```
today.getMonth();
```

    iii.   What is the date today?

```
today.toDateString();
```

    iv.   What is the day today as a number?

```
today.getDay();
```

    v.   What is the hours now?

```
today.getHours();
```
vi.   What is the minutes now?

```
today.getMinutes();
```
vii.   Find out the numbers of seconds elapsed from January 1, 1970 to now.

```
today.getTime();
```

Exercises: Level 2

1. Write a script that prompt the user to enter base and height of the triangle and calculate an area of a triangle (area = 0.5 x b x h).

```
Enter base: 20
Enter height: 10
The area of the triangle is 100
```
```
let b = prompt("Enter base:");
let h = prompt("Enter height:");
let area = 0.5*b*h;
console.log(`The area of the triange is ${area}`);
```

2. Write a script that prompt the user to enter side a, side b, and side c of the triangle and and calculate the perimeter of triangle (perimeter = a + b + c)
```
Enter side a: 5
Enter side b: 4
Enter side c: 3
The perimeter of the triangle is 12
```

```
const a = prompt("Enter side a:);
const b = prompt("Enter side b:);
const c = prompt("Enter side c:);
console.log(`The perimeter of the triangle is ${a+b+c}`);
```

3. Get length and width using prompt and calculate an area of rectangle (area = length x width and the perimeter of rectangle (perimeter = 2 x (length + width))

```
let length = prompt("Enter length:");
let width = prompt("Enter width:");
let area = length*width;
console.log(`The area of the rectange is ${area} and the
perimeter of it is ${2*(length*width)}`);
```

4. Get radius using prompt and calculate the area of a circle (area = pi x r x r) and circumference of a circle(c = 2 x pi x r) where pi = 3.14.

```
let radius = prompt("Enter radius:");
let area = Math.PI*radius*radius;
let circumference = 2*Math.PI*radius;
console.log(`The area of the circle is ${area} and the
circumference of it is ${circumference}`);
```

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

```
let x = 0,   y = 0;
let Y = 2*x-2;
let X = (y+2)/2;
let m1 = (y-Y)/(X-x);
console.log(`The Y-intercept is ${Y}, the X-intercept is ${X}
and the slope is ${m1}`);
```

6. Slope is m = $(y_2-y_1)/(x_2-x_1)$. Find the slope between point (2, 2) and point(6,10)

```
let x1 = 2;
let x2 = 6;
let y1 = 2;
let y2 = 10;
let m2 = (y2-y1)/(x2-x1);
console.log(m2);
```

7. Compare the slope of above two questions.

```
if(m1 > m2) console.log("m1 is greater than m2");
else if(m2 > m1) console.log("m2 is greater than m1");
else console.log("m1 is equal to m2");
```

8. Calculate the value of y $(y = x^2 + 6x + 9)$. Try to use different x values and figure out at what x value y is 0.

```
let x = 0;
let y = x*x + 6*x +9;
console.log(y);
x = 1;
console.log(y);
x = -1;
console.log(y);
x = -2;
console.log(y);
x = -3;
console.log(y);
```

9. Write a script that prompt a user to enter hours and rate per hour. Calculate pay of the person?

    ```
    Enter hours: 40
    Enter rate per hour: 28
    Your weekly earning is 1120
    ```

```
let hours = prompt("Enter hours:");
let rate = prompt("Enter rate per hour:");
console.log(`Your weekly earning is ${hours*rate}`);
```

10. If the length of your name is greater than 7 say, your name is long else say your name is short.

```
const myName = "Priyanka saini";
if(myName.length > 7) console.log("Your name is long");
```

```
else console.log("Your name is short");
```

11. Compare your first name length and your family name length and you should get this output.

```
let firstName = 'Asabeneh'
let lastName = 'Yetayeh'

Your first name, Asabeneh is longer than your family name, Yetayeh
```

```
let firstName = "Priyanka";
let lastName = "Saini";
if(firstName.length > lastName.length)
   console.log(`Your first name, ${firstName} is longer than
your family name, ${lastName}`);
else if(firstName.length < lastName.length)
   console.log(`Your first name, ${firstName} is shorter than
your family name, ${lastName}`);
else
   console.log(`Your first name, ${firstName} is equal to
your family name, ${lastName}`);
```

12. Declare two variables *myAge* and *yourAge* and assign them initial values and myAge and yourAge.

```
let myAge = 250
let yourAge = 25

I am 225 years older than you.
```

```
let myAge = 21;
let yourAge = 20;
if(myAge > yourAge)
  console.log(`I am ${myAge-yourAge} years older than you`);
else if(myAge < yourAge)
  console.log(`You'r ${yourAge-myAge} years older than me`);
else
  console.log("We have same age");
```

13. Using prompt get the year the user was born and if the user is 18 or above allow the user to drive if not tell the user to wait a certain amount of years.

```
Enter birth year: 1995

You are 25. You are old enough to drive

Enter birth year: 2005

You are 15. You will be allowed to drive after 3 years.
```

```
let birthYear = prompt("Enter birth year:");
const now = new Date();
const difference = now.getFullYear()-birthYear;
if(difference >= 18)
   console.log(`You are ${difference}. Your are old enough to
drive);
```

```
else
   console.log(`You are ${difference}. You will be allowed to
drive after ${18-difference} years.`);
```

14. Write a script that prompt the user to enter number of years. Calculate the number of
    seconds a person can live. Assume some one lives just hundred years

    Enter number of years you live: 100

    You lived 3153600000 seconds.

```
let years = prompt("Enter number of years you live:");
const now =  new Date();
const birthYear = now.getFullYear() - years;


APPROACH 1 -
const Year = new Date("January 1, 1971");
const secPerYear = Year.getTime();
console.log(`You live ${secPerYear*years} seconds`);


OUTPUT : 3151620000000


APPROACH 2 -
const birthDate = new Date(`January 1, ${birthYear}`);
console.log(`You live ${now.getTime() - birthDate.getTime()}
seconds`)


OUTPUT : 3170029971661
```

15. Create a human readable time format using the Date time object
    i.   YYYY-MM-DD HH:mm

```
const todayDate = new Date();
function getReadableDate(date,sep) {
    let day = date.getDate();
    let month = date.getMonth()+1;
    let year = date.getFullYear();
    let hours = date.getHours();
    let mins = date.getMinutes();

    if(day < 10) day = '0'+day;
    if(month < 10) month = '0'+month;
    if(hours < 10) hours = '0'+hours;
    if(mins < 10) mins = '0'+mins;

    return `${year}${sep}${month}${sep}${day}
${hours}:${mins}`;
}
console.log(getReadableDate(todayDate,'-'));
```

    ii.   DD-MM-YYYY HH:mm

```
function getReadableDate(date,sep) {
  let day = date.getDate();
  let month = date.getMonth()+1;
```

```
    let year = date.getFullYear();
    let hours = date.getHours();
    let mins = date.getMinutes();

    if(day < 10) day = '0'+day;
    if(month < 10) month = '0'+month;
    if(hours < 10) hours = '0'+hours;
    if(mins < 10) mins = '0'+mins;

    return `${day}${sep}${month}${sep}${year}
${hours}:${mins}`;
}
console.log(getReadableDate(todayDate'-'));
```

iii.   DD/MM/YYYY HH:mm

```
function getReadableDate(date,sep) {
    let day = date.getDate();
    let month = date.getMonth()+1;
    let year = date.getFullYear();
    let hours = date.getHours();
    let mins = date.getMinutes();

    if(day < 10) day = '0'+day;
    if(month < 10) month = '0'+month;
    if(hours < 10) hours = '0'+hours;
    if(mins < 10) mins = '0'+mins;

    return `${day}${sep}${month}${sep}${year}
${hours}:${mins}`;
}
console.log(getReadableDate(todayDate,'/'));
```

Exercises: Level 3

1. Create a human readable time format using the Date time object. The hour and the
    minute should be all the time two digits(7 hours should be 07 and 5 minutes should be
    05)
    i.   YYYY-MM-DD HH:mm eg. 2012-01-02 07:05

```
const todayDate = new Date();
function getReadableDate(date,sep) {
    let day = date.getDate();
    let month = date.getMonth()+1;
    let year = date.getFullYear();
    let hours = date.getHours();
    let mins = date.getMinutes();

    if(day < 10) day = '0'+day;
    if(month < 10) month = '0'+month;
    if(hours < 10) hours = '0'+hours;
```

```
    if(mins < 10) mins = '0'+mins;

    return `${year}${sep}${month}${sep}${day}
${hours}:${mins}`;
}
console.log(getReadableDate(todayDate,'-'));
```