ETEC Center

Build Your IT Skill

ណែនាំស្គាល់ពី Loop JavaScript

រៀបរាងដោយៈ គ្រូអាយធីចិត្តល្អ

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ណែនាំអោយLoop ក្នុង JavaScript

I. *ម្តេចទៅដែលហៅ ថា* Loop?

Loop *សំដៅលើរង្វិលជុំដែលធ្វើការងារម្តងហើយ ម្តងទៀត រហូតដល់វា ជួប លក្ខណ្ឌ ណា មួយ ដែលពិតទើបវាបញ្ចប់។ ដើម្បីអាចអោយ* Loop *មួយរង្វិលជុំបាន អាស្រ័យលើតំលៃ ៣ គឺ៖*

- Initialize *សំដៅលើការផ្តល់តំលៃដំបូងទៅអោយ* Loop(0, 1, 2, ….) ។
- Condition: *សំដៅលើការកំណត់តំលៃចុងក្រោយដើម្បី* Loop *បញ្ចប់* (i>=10, i<=10,….)។
- Step: *សំដៅលើជំហានរបស់* Loop *ដែលត្រូវដំណើរការដូចជា៖* i++, i-- , i=i+2,i=i+3, i=i-2, i=i-3,….។

II. *ប្រភេទនៃ* Loop

Loop *របស់* java *ត្រូវបានគេបែងចែកជា ៤ប្រភេទ ដូចជា៖*

- For Loop
- While Loop
- Do ... while loop
- For each loop

2.1. For Loop: *គឺជាប្រភេទ* Loop *ដែលធ្វើការត្រូវតែត្រួត ពិនិត្យនូវ លក្ខណ្ឌ ជាមុនសិន ទើបវាអនុវត្តន៍នូវលក្ខណ្ឌ តែប្រភេទ* Loop *នេះគឺ គេប្រើការ កំណត់នូវតំលៃរបស់ តែនៅលើ បន្ទាត់តែមួយ រួមគ្នា។*

ដំអេ៎ for Loop៖

```
<script type="text/javascript">
   for(Initialize; Condition ; Step)
   {
      Statement(s)
   }

</script>
```

ឧទាហរណ៏ ១៖

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Loops</h2>

<p id="demo"></p>

<script>
var text = "";
var i;
for (i = 0; i <=15; i++) {
    text += "The number is " + i + "<br>";
}
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript Loops

The number is 0
The number is 1
The number is 2
The number is 3
The number is 4
The number is 5
The number is 6
The number is 7
The number is 8
The number is 9
The number is 10
The number is 11
The number is 12
The number is 13
The number is 14
The number is 15

ឧទាហរណ៍ ២៖

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Loops</h2>

<p id="demo"></p>

<script>
var text = "";
var i;
for (i = 2; i <=15; i=i+3) {
    text += "The number is " + i + "<br>";
}
document.getElementById("demo").innerHTML = text;
</script>
```

JavaScript Loops

The number is 2
The number is 5
The number is 8
The number is 11
The number is 14

ឧទាហរណ៍ ៣៖

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Loops</h2>

<p id="demo"></p>
<script>
var text = "";
var i;
for (i = 20; i>=1; i--) {
    text += "The number is " + i + "<br>";
}
document.getElementById("demo").innerHTML = text;
</script>
</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript Loops

The number is 20
The number is 19
The number is 18
The number is 17
The number is 16
The number is 15
The number is 14
The number is 13
The number is 12
The number is 11
The number is 10
The number is 9
The number is 8
The number is 7
The number is 6
The number is 5
The number is 4
The number is 3
The number is 2
The number is 1

ឧទាហរណ៏ ៤៖

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Loops</h2>

<p id="demo"></p>
<script>
var text = "";
var i;
for (i = 20; i>=1; i--) {
   if(i%2==0)
    text += "<font color=red>The Even is " + i + "</font><br>";
    else
    text+="The Odd is=" + i +"<br/>";
}
document.getElementById("demo").innerHTML = text;
</script>
</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript Loops

The Even is 20
The Odd is=19
The Even is 18
The Odd is=17
The Even is 16
The Odd is=15
The Even is 14
The Odd is=13
The Even is 12

ឧទាហរណ៏ ៥៖

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Loops</h2>
<hr />
<script>
var sum;
var i;
sum=0;
for (i = 1; i<=10; i++) {
  sum=sum+i;
}
document.write("Sum 1=" + sum + "<br/>");
document.write("<hr />");

sum=0;
for (i = 1; i<=10; i++) {
  sum=sum+Math.pow(i,2);
}
document.write("Sum2 with Pow=" + sum + "<br/>");
document.write("<hr />");

sum=0;
for (i = 1; i<=10; i++) {
  sum=sum+Math.random();
}
document.write("Sum4 with Random=" + sum + "<br/>");
document.write("<hr />");
</script>
</body>
</html>
```

លទ្ធផលទទួលបាន៖

Method ដែលប្រើជ្រាស់ជាមួយនិង Function Math៖

Method	Description
abs(x)	Returns the absolute value of x
acos(x)	Returns the arccosine of x, in radians
asin(x)	Returns the arcsine of x, in radians
atan(x)	Returns the arctangent of x as a numeric value between -PI/2 and PI/2 radians
atan2(y, x)	Returns the arctangent of the quotient of its arguments
ceil(x)	Returns the value of x rounded up to its nearest integer
cos(x)	Returns the cosine of x (x is in radians)
exp(x)	Returns the value of E^x
floor(x)	Returns the value of x rounded down to its nearest integer
log(x)	Returns the natural logarithm (base E) of x
max(x, y, z, ..., n)	Returns the number with the highest value
min(x, y, z, ..., n)	Returns the number with the lowest value
pow(x, y)	Returns the value of x to the power of y
random()	Returns a random number between 0 and 1
round(x)	Returns the value of x rounded to its nearest integer
sin(x)	Returns the sine of x (x is in radians)
sqrt(x)	Returns the square root of x
tan(x)	Returns the tangent of an angle

លំហាត់អនុវត្តន៍ ផ្នែកទី ១

១)ចូរគណនាផលបូកដូចខាងក្រោម៖

A) 2+4+6+…..N

B). 3+5+7+…...N

C). 1!+2!+3!+….N!

D). Cos(1)+Cos(2)+Cos(3)+……Cos(N)

E). 1/2+ 2/2 + 3/2 +…….N/2

F). 1!/3 + 2!/3 +3!/2 +……N!/2

លំហាត់អនុវត្តន៍ Loop JavaScript

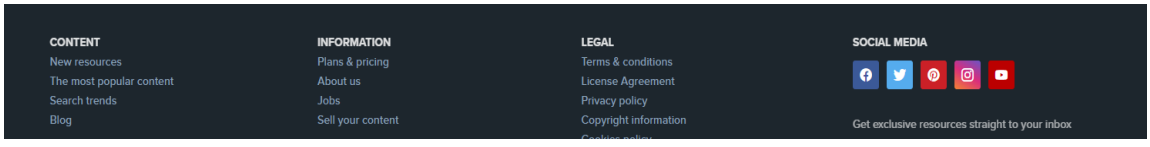
A) 2+4+6+…..…..N

Input N= 5

2 + 4 = 7

B) 3+5+7+…...N

…….……



2.2. While Loop: គឺជាប្រភេទ Loop មួយបែប ទៀតដែលការដំណើរ ការងារ របស់វាត្រូវត្រួតពិនិត្យលក្ខណ្ឌាជាមុនសិនទើបវាអនុវត្តន៍តាម ក្រោយ។ Loop ប្រភេទនេះគឺការផ្តល់តំលៃនិងលក្ខណ្ឌដែលត្រូវ បញ្ចប់របស់វាត្រូវនៅបន្ទាត់ផ្សេងគ្នា។

ទំរង់ for Loop៖

```
<script type="text/javascript">

   intialize;
   while(Condition)
   {
      Statement(s)
      step;
   }


</script>

```

ឧទាហរណ៍ ១៖

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript while</h2>

<p id="demo"></p>

<script>
var text = "";
var i = 0;
while (i < 10) {
    text += "<br>The number is " + i;
    i++;
}
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript while

The number is 0
The number is 1
The number is 2
The number is 3
The number is 4
The number is 5
The number is 6
The number is 7
The number is 8
The number is 9

ឧទាហរណ៍ ២៖

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript while</h2>

<p id="demo"></p>

<script>
var text = "";
var i = 2;
while (i <= 15) {
    text += "<br>The number is " + i;
    i=i+2;
}
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript while

The number is 2
The number is 4
The number is 6
The number is 8
The number is 10
The number is 12
The number is 14

ឧទាហរណ៍ ៣៖

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript while</h2>

<p id="demo"></p>

<script>
var text = "";
var i = 15;
while (i >=1) {
    text += "<br>The number is " + i;
    i=i-2;
}
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript while

The number is 15
The number is 13
The number is 11
The number is 9
The number is 7
The number is 5
The number is 3
The number is 1

2.3. Do While Loop: គឺជាប្រភេទ Loop ដែលដំណើរការមុនពេល ពិនិត្យលក្ខណ្ឌ។ Loop ប្រភេទនេះគេប្រើប្រាស់សំរាប់ការងារ ទាំងឡាយណាដែលត្រូវការធ្វើហើយបានមើលលក្ខណ្ឌក្រោយ។

ទំរង់ do while Loop៖

```
1
2 <script type="text/javascript">
3
4    intialize;
5    do{
6       Statement(s)
7       step;
8    }while(Condition);
9
10 </script>
11
```

ឧទាហរណ៍ ១៖

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript do ... while</h2>

<p id="demo"></p>

<script>
var text = ""
var i = 0;

do {
    text += "<br>The number is " + i;
    i++;
}
while (i < 10);

document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript do ... while

The number is 0
The number is 1
The number is 2
The number is 3
The number is 4
The number is 5
The number is 6
The number is 7
The number is 8
The number is 9

ឧទាហរណ៍ ២៖

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript do ... while</h2>

<p id="demo"></p>

<script>
var text = ""
var i = 10;

do {
    text += "<br>The number is " + i;
    i--;
}
while (i >= 1);

document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

លទ្ធផលទទួលបាន៖

JavaScript do ... while

The number is 10
The number is 9
The number is 8
The number is 7
The number is 6
The number is 5
The number is 4
The number is 3
The number is 2
The number is 1

4). For each: គឺជាប្រភេទ Loop ដែលស្រដៀងនិងការប្រើប្រាស់ជាមួយនិង For Loop ដែរ តែ Loop មួយនេះគឺ មិនតំរូវអោយមានការ Initialize និង លក្ខណ្ឌានោះទេ។

ទំរង់ do while Loop៖

```
<script type="text/javascript">

   for(variable in Collectio)
   {
      Statement(s);
   }

</script>
```

ឧទាហរណ៏ ១៖

```
<!DOCTYPE html>
<html>
<body>

<p id="demo"></p>

<script>
var cars = ["BMW", "Volvo", "Saab", "Ford"];
var text = "";
for (var i in cars) {
    text += cars[i] + "<br>";
}
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

លទ្ធផលទទួលបាន៖

BMW
Volvo
Saab
Ford

លំហាត់អនុវត្តន៍ ១

១)

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Nested Loops</h2>

<p id="demo"></p>

<script>
var i,j;
var rows=10;
var text="";
for(i=1; i<=rows; ++i)
    {
        for(j=1; j<=i; ++j)
        {
            text=text + j +"  ";
        }
        text=text+"<br/>";
    }
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

JavaScript Nested Loops

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8 9 10

២)

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Nested Loops</h2>

<p id="demo"></p>

<script>
var i,j;
var rows=7;
var text="";
for(i=1; i<=rows; ++i)
    {
        for(j=1; j<=i; ++j)
        {
            text=text +"*  ";
        }
        text=text+"<br/>";
    }
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

JavaScript Nested Loops

*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * * * *

៣)

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Nested Loops</h2>

<p id="demo"></p>

<script>
var i,j;
var text="";
for(i=1; i<=5; ++i)
    {
        for(j=1; j<=10; ++j)
        {
            text=text + i + "*" + j + "=" + i*j + "<br/>";
        }
     text=text + ".....<br/>";
    }
document.getElementById("demo").innerHTML = text;
</script>

</body>
</html>
```

JavaScript Nested Loops

1*1=1
1*2=2
1*3=3
1*4=4
1*5=5
1*6=6
1*7=7
1*8=8
1*9=9
1*10=10
.....
2*1=2
2*2=4
2*3=6
2*4=8
2*5=10
2*6=12
2*7=14
2*8=16
2*9=18
2*10=20

៤)

Run »

```
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Nested Loops</h2>
<script>

      var first = "A", last = "Z";
      for(var i = first.charCodeAt(0); i <= last.charCodeAt(0); i++)
         {
          document.write( eval("String.fromCharCode(" + i + ")") + "   ," );
          }
         document.write("<br/>.....<br/>");
          first = "a", last = "z";
      for(var i = first.charCodeAt(0); i <= last.charCodeAt(0); i++) {
         document.write( eval("String.fromCharCode(" + i + ")") + "   ," );
}
</script>

</body>
</html>
```

JavaScript Nested Loops

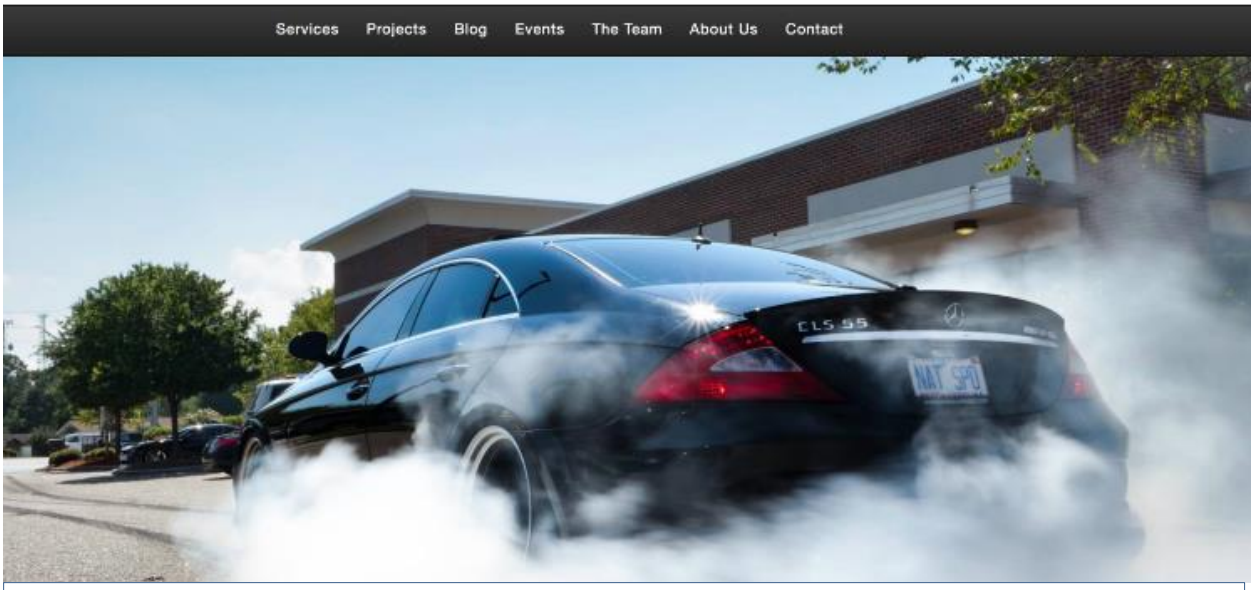
A ,B ,C ,D ,E ,F ,G ,H ,I ,J ,K ,L ,M ,N ,O ,P ,Q ,R ,S ,T ,U ,V ,W ,X ,Y ,Z ,

.....

a ,b ,c ,d ,e ,f ,g ,h ,i ,j ,k ,l ,m ,n ,o ,p ,q ,r ,s ,t ,u ,v ,w ,x ,y ,z ,

លំហាត់អនុវត្តន៍ ២

NATIONAL SPEED
High Performance Automotive Center



Example 5: Inverted half pyramid using numbers

```
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

Example 2: Program to print half pyramid a using numbers

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

Check out these related examples:

- C Programming Code To Create Pyramid and Structure
- Display its own Source Code as Output
- Multiply to Matrix Using Multi-dimensional Arrays
- Add Two Matrix Using Multi-dimensional Arrays
- Find Transpose of a Matrix