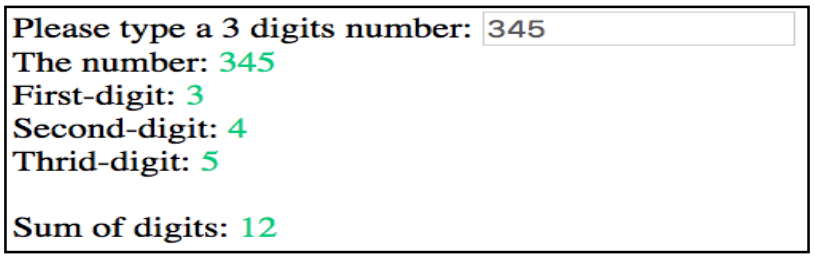
Introduction of JavaScript

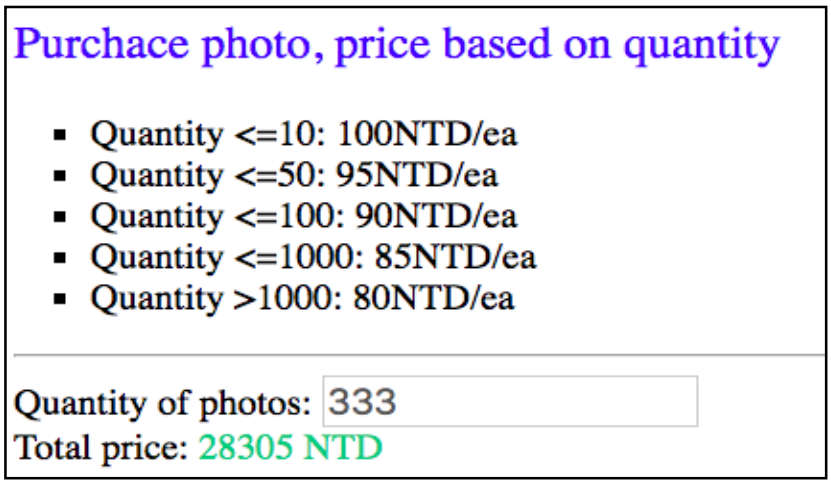
1) Basic Structure of html, css & JavaScript (info-class-01.html)

Introduction of “html + css + js”

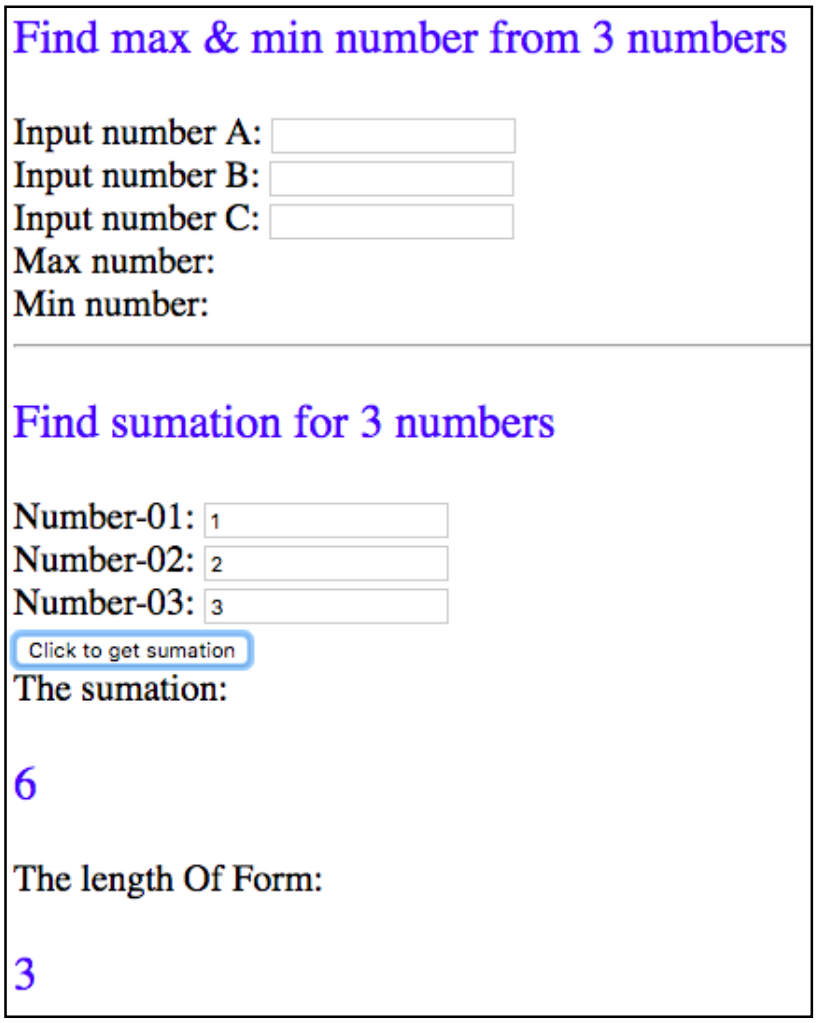



```html
<!DOCTYPE html>
<html lang = "en">

  <head>
    <meta charset="utf-8">
    <title>info-class-01</title>
    <link rel="stylesheet" type="text/css" href="css/info-class-01.css">
  </head>

  <body>

    Please type a 3 digits number: <input id = 'inputnum'><br>

    The number: <div class = 'ans' id = 'num'></div><br>
    First-digit: <div class = 'ans' id = 'ans1'></div><br>
    Second-digit: <div class = 'ans' id = 'ans2'></div><br>
    Thrid-digit: <div class = 'ans' id = 'ans3'></div><br><br>

    Sum of digits: <div class = 'ans' id = 'ans4'></div><br>

  </body>

  <script type="text/javascript" src="js/info-class-01.js"></script>

</html>
```

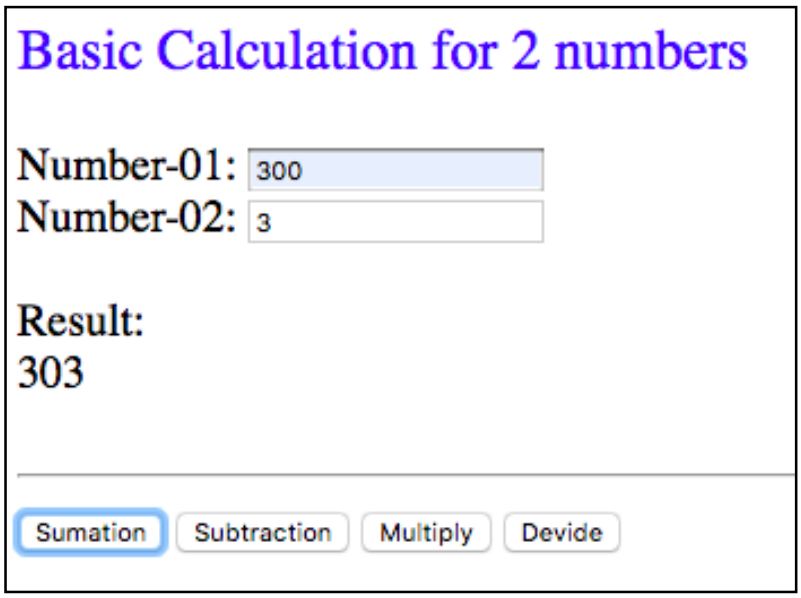
2) List and if logic (info-class-02.html)



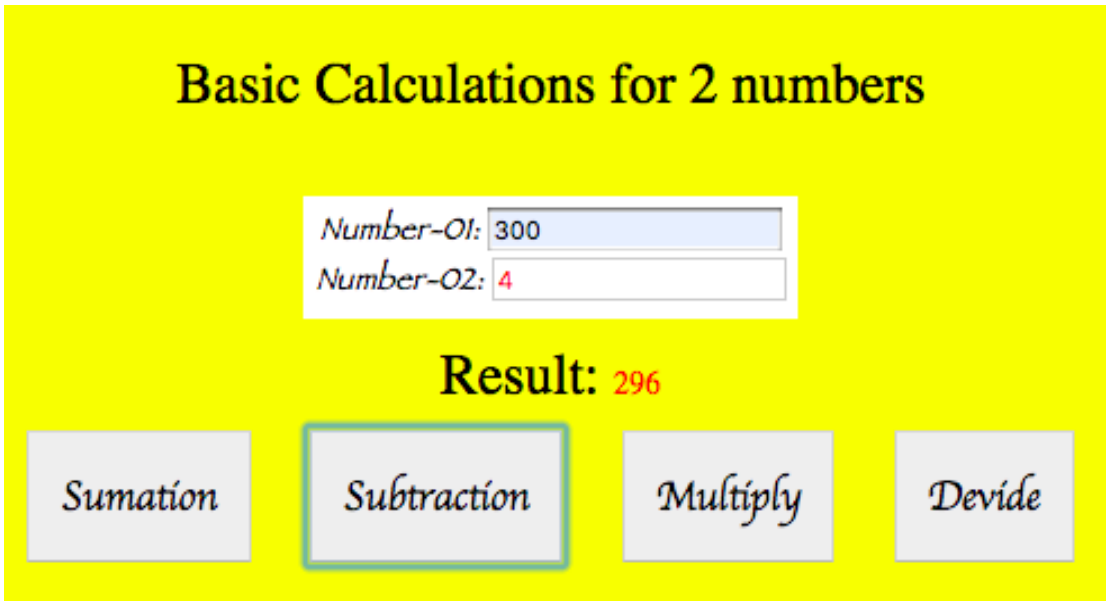
3) Input and if logic (info-class-03.html)



4) Form and function (info-class-04.html)

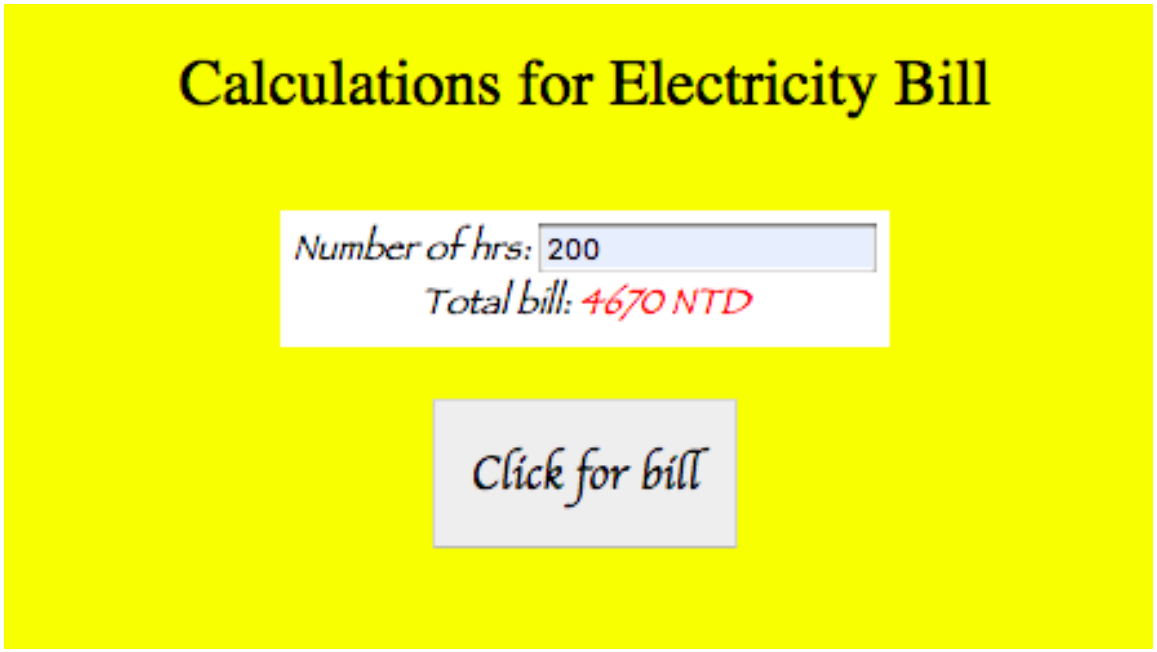


5) Form, function, if (break), switch logic, css (info-class-05.html)

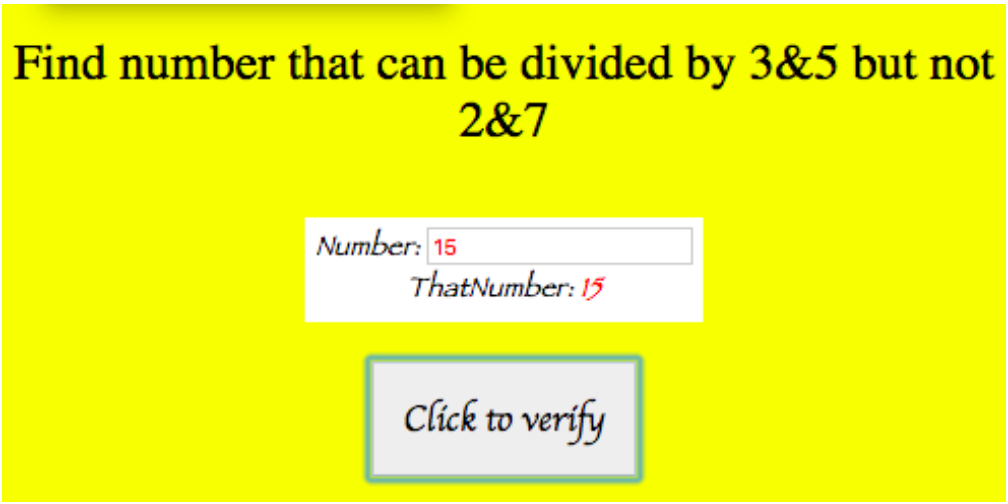


6) Form, if (else if) (info-class-06.html)

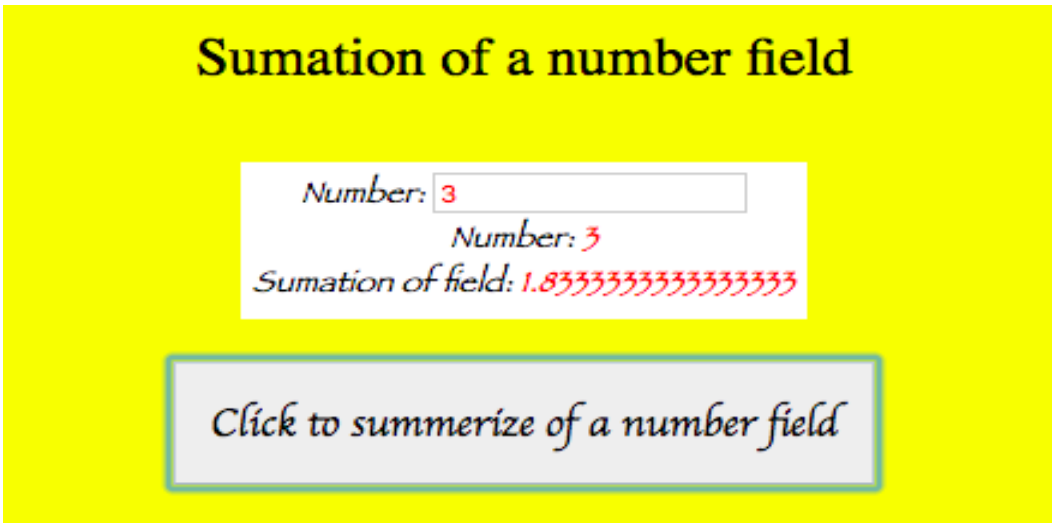
Electricity bill calculation
hrs < 30 $10
hrs <=70 $13
hrs <=120 &15
hrs <=200 $20
hrs >= 200 $30



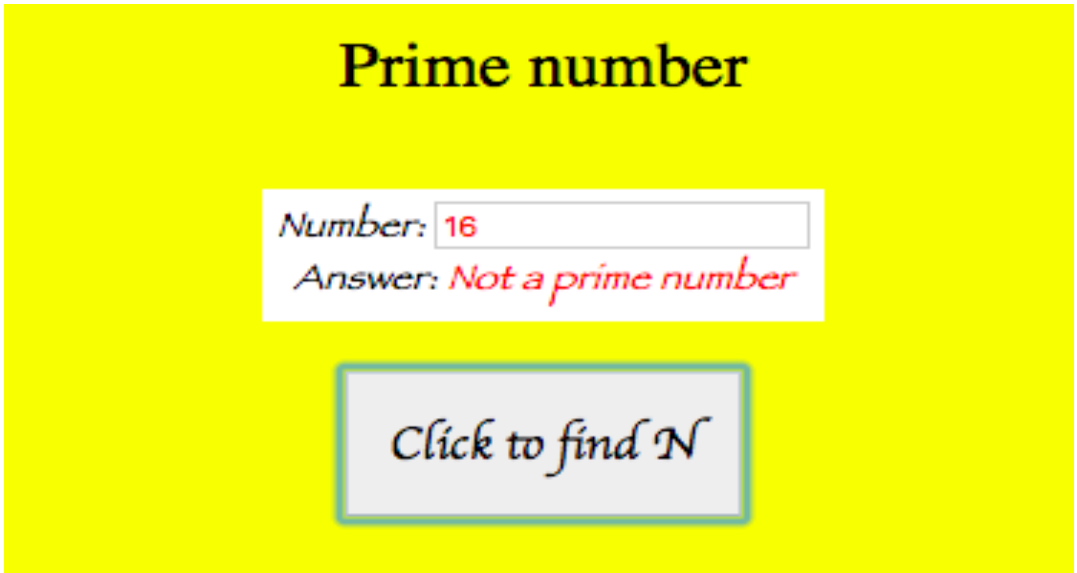
7) Form, if (else) (info-class-07.html)



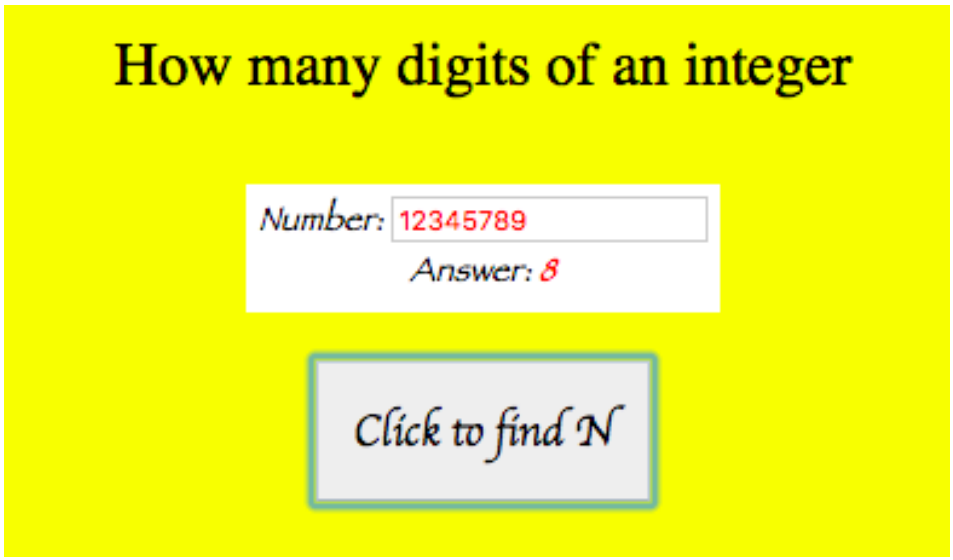
8) Summation of a number field (info-class-08)



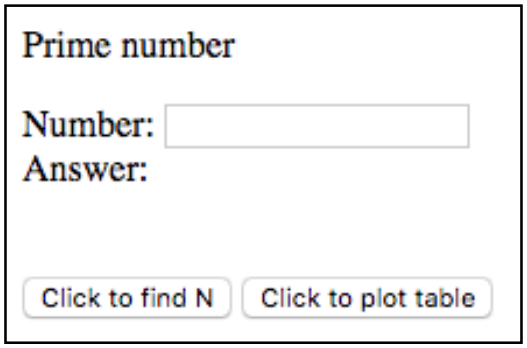
9) Prime number (info-class-09)



10) How many digits in an integer (info-class-10)



11) Multiple loops (info-class-11)




```
// 1 1 1 1 1
// 2 2 2 2 2
// 3 3 3 3 3
// 4 4 4 4 4
// 5 5 5 5 5
function printn(){
    number = oForm.elements['number'].value;
    for(i=1; i<=number; i++){
      for(j=1; j<=number;j++){
        document.write(i+" ");
      }
      document.write("<br>");
    }
};
```

```
// 2 3 4 5 6
// 3 4 5 6 7
// 4 5 6 7 8
// 5 6 7 8 9
// 6 7 8 9 10
function printn(){
    number = oForm.elements['number'].value;
    for(i = 1; i <= number; i++){
      for(j = 1; j <= number; j++){
        s = i+j;
        document.write(s + " ");
      }
      document.write("<br>");
    }
};
```

```
// 2  3  4  5  6
// 7  8  9  10 11
// 12 13 14 15 16
// 17 18 19 20 21
// 22 22 23 24 25
function printn(){
    number = oForm.elements['number'].value;
    for(i = 1; i <= number; i++){
      for(j = number*(i-1)+1; j <= number*(i-1)+number; j++){
        s = i+j;
        document.write(s+" ");
      }
      document.write("<br>");
    }
};
```

```
// 1
// 1 2
// 1 2 3
// 1 2 3 4
// 1 2 3 4 5
// 1 2 3 4 5 6 ,,,
function printn(){
    number = oForm.elements['number'].value;
    for(i = 1; i <= number; i++){
      for(j = 1; j < i+1; j++){
        document.write(j);
        document.write(" ");
      }
      document.write("<br>");
    }
};
```

```
//         1
//       1 2
//     1 2 3
//   1 2 3 4
// 1 2 3 4 5
function printn(){
    number = oForm.elements['number'].value;
    document.write("number=" + number +"<br>");
    for(i = 1; i <= number; i++){
      for(j = 1; j <= number-i; j++){
        document.write(" ");
        document.write(" ");
      };

      for(j = 1; j <= i; j++){
        document.write(j);
      };
      document.write("<br>");
    };
};
```

number=7
1
12
123
1234
12345
123456
1234567

12) Table (info-class-12)

Automatically build a table

Click to plot table

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

13) Table (info-class-13)

Automatically calculate the collums

Number of Collums: 8 Disply table

Number of Collums: 8

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96
97	98	99					

14) 1D array (info-class-14)

1D array:
1,2,3,4,5,6,7,8,9,10,
11,12,13,14,15,16,17,18,19,20,
21,22,23,24,25,26,27,28,29,30,
31,32,33,34,35,36,37,38,39,40,
41,42,43,44,45,46,47,48,49,50,
51,52,53,54,55,56,57,58,59,60,
61,62,63,64,65,66,67,68,69,70,
71,72,73,74,75,76,77,78,79,80,
81,82,83,84,85,86,87,88,89,90,
91,92,93,94,95,96,97,98,99,100,

New serie:
99,98,97,96,95,94,93,92,91,90,
89,88,87,86,85,84,83,82,81,80,
79,78,77,76,75,74,73,72,71,70,
69,68,67,66,65,64,63,62,61,60,
59,58,57,56,55,54,53,52,51,50,
49,48,47,46,45,44,43,42,41,40,
39,38,37,36,35,34,33,32,31,30,
29,28,27,26,25,24,23,22,21,20,
19,18,17,16,15,14,13,12,11,10,
9,8,7,6,5,4,3,2,1,0,

15) 1D array (info-class-15)

Dicinal number: 255
Binry number: 11111111
Binry number: 11111111
Number of binary digits: 8

16) 1D array (info-class-16)

Generate a set of random numbers

26,50,38,40,32,46,48,19,4,43,
36,19,16,29,17,39,16,46,28,16,
7,8,26,32,30,0,29,16,50,48,
21,42,7,47,3,44,23,46,28,49,
40,15,20,42,13,15,30,21,46,22,

Total: 1428
max: 50
mean: 28.56
min: 0

17) 1D array sorter (info-class-17)

Original series:

90,6,15,65,32,43,50,4,102

Sortering

After sortering:

4,6,15,32,43,50,65,90,102

18) 1D array wash (info-class-18)

Original series:

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

Wash

After wash:

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

19) 1D array wash & distribute cards (info-class-19)

Wash & distribut cards

Original Series:
1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52

After Wash:
33,37,5,34,8,41,10,20,28,25,4,16,1,48,14,23,27,38,9,46,44,24,12,13,11,50,52,21,32,35,22,51,17,6,19,3,43,40,39,36,18,47,15,26,7,45,30,29,42,31,2,49

Player Number #1
1: C7
2: C11
3: A5
4: C8
5: A8
6: D2
7: A10
8: B7
9: C2
10: B12

20) 1D array sorter & binary search (info-class-20)

Original Array:
88,32,74,46,75,91,21,48,75,21,41,68,48,5,3,68,1,15,89,100,41,33,79,2,28,64,71,45,62,4,72,5,90,2,40,92,69,35,65,60,93,72,2,95,37,98,31,31,86,84,96,88,

After Sortering:
1,2,2,2,3,4,5,5,5,6,6,11,15,15,18,19,20,20,21,21,21,23,24,27,27,28,30,31,31,31,32,32,33,33,35,36,37,40,41,41,42,45,46,47,48,48,48,48,48,54,55,58,58,5

The number 23 is found at location: 21

21) 1D array sorter & find repetitions (info-class-21)

Original Array:
24,15,3,22,21,20,10,30,8,29,24,14,29,6,17,28,4,20,9,15,25,2,10,4,21,16,8,15,11,10,20,26,6,5,1,1,20,8,4,2,19,28,24,21,16,10,28,16,18,3,8,16,25,22,7,2,10,2

After Sortering:
1,1,1,1,1,1,1,1,2,2,2,2,2,3,3,3,3,4,4,4,5,6,6,6,6,7,7,8,8,8,8,8,9,9,9,9,10,10,10,10,10,11,11,13,13,14,14,14,15,15,15,15,15,16,16,16,16,17,17,17,18,19,20,20,

Find out repeatancies:
1: 8 Times
2: 5 Times
3: 4 Times
4: 3 Times
5: 1 Times
6: 4 Times
7: 2 Times
8: 5 Times
9: 4 Times
10: 5 Times
11: 2 Times

22) 2D matrix (info-class-22)

```
2D Matrix

1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25
```

23) 2D matrix (info-class-23)

```
2D matrix

1 6 11 16 21
2 7 12 17 22
3 8 13 18 23
4 9 14 19 24
5 10 15 20 25
```

24) 2D Matrix manipulation (info-class-24)

Objective:
Product A,B,C,D, Need to get summation in for:
Each product in a week;
Total production in a day;
Total production in a week.

0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

Product	Monday	Tusday	Wendsday	Thursday	Friday	Surtuday	Sunday	Sum
A	122	499	354	459	104	405	249	0
B	447	132	226	476	455	302	235	0
C	171	306	233	201	188	349	327	0
D	374	283	220	428	391	355	479	0
Sum	0	0	0	0	0	0	0	0

Product	Monday	Tusday	Wendsday	Thursday	Friday	Surtuday	Sunday	Sum
A	122	499	354	459	104	405	249	2192
B	447	132	226	476	455	302	235	2273
C	171	306	233	201	188	349	327	1775
D	374	283	220	428	391	355	479	2530
Sum	1114	1220	1033	1564	1138	1411	1290	8770

25) Sorting for the above table (info-class-25)

Product	Monday	Tusday	Wendsday	Thursday	Friday	Surtuday	Sunday	Sum
A	122	499	354	459	104	405	249	2192
B	447	132	226	476	455	302	235	2273
C	171	306	233	201	188	349	327	1775
D	374	283	220	428	391	355	479	2530
Sum	1114	1220	1033	1564	1138	1411	1290	8770

Product	Monday	Tusday	Wendsday	Thursday	Friday	Surtuday	Sunday	Sum
D	374	283	220	428	391	355	479	2530
B	447	132	226	476	455	302	235	2273
A	122	499	354	459	104	405	249	2192
C	171	306	233	201	188	349	327	1775
Sum	1114	1220	1033	1564	1138	1411	1290	8770

26) Long integer operation (info-class-026)

```
        4 2 4 6 8 7 5 9 7 5 2 1    A: 1 2 5 7 9 5 7 8 6 4 2 4
    +   5 6 7 9 2 4 6 7 7 6 4 2 9  B: 9 2 4 6 7 7 6 4 2 9 7 6 5
    ____________________________
First: make two arrays  A & B with reverse order;
Then: make third array C with max length + 1;
```

Long interger operation

N01=2010102030405
N02=2098888888666
Sum=4108990919071

27) Matrix multiplication C = AxB (info-class-27)

	0	1	2	3
0	A_{00}	A_{01}	A_{02}	A_{03}
1	A_{10}	A_{11}	A_{12}	A_{13}
2	A_{20}	A_{21}	A_{22}	A_{23}
3	A_{30}	A_{31}	A_{32}	A_{33}

x

	0	1	2
0	B_{00}	B_{01}	B_{02}
1	B_{10}	B_{11}	B_{12}
2	B_{20}	B_{21}	B_{22}
3	B_{30}	B_{31}	B_{32}

=

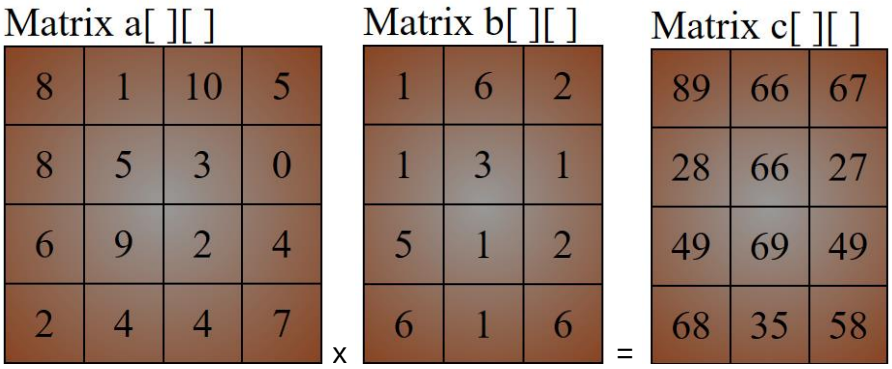
	0	1	2
0	C_{00}	C_{01}	C_{02}
1	C_{10}	C_{11}	C_{12}
2	C_{20}	C_{21}	C_{22}
3	C_{30}	C_{31}	C_{32}

$C_{00} = A_{00}xB_{00} + A_{01}xB_{10} + A_{02}xB_{20} + A_{03}xB_{30}$
$C_{01} = A_{00}xB_{01} + A_{01}xB_{11} + A_{02}xB_{21} + A_{03}xB_{31}$
$C_{02} = A_{00}xB_{02} + A_{02}xB_{12} + A_{02}xB_{22} + A_{03}xB_{32}$

$C_{10} = A_{10}xB_{00} + A_{11}xB_{10} + A_{12}xB_{20} + A_{13}xB_{30}$
$C_{11} = A_{10}xB_{01} + A_{11}xB_{11} + A_{12}xB_{21} + A_{13}xB_{31}$
$C_{12} = A_{10}xB_{02} + A_{12}xB_{12} + A_{12}xB_{22} + A_{13}xB_{32}$

$C_{20} = A_{20}xB_{00} + A_{21}xB_{10} + A_{22}xB_{20} + A_{23}xB_{30}$
$C_{21} = A_{20}xB_{01} + A_{21}xB_{11} + A_{22}xB_{21} + A_{23}xB_{31}$
$C_{22} = A_{20}xB_{02} + A_{22}xB_{12} + A_{22}xB_{22} + A_{23}xB_{32}$

$C_{30} = A_{30}xB_{00} + A_{31}xB_{10} + A_{32}xB_{20} + A_{33}xB_{30}$
$C_{31} = A_{30}xB_{01} + A_{31}xB_{11} + A_{32}xB_{21} + A_{33}xB_{31}$
$C_{32} = A_{30}xB_{02} + A_{32}xB_{12} + A_{32}xB_{22} + A_{33}xB_{32}$



	0	1	2	3
0	**A_{00}**	**A_{01}**	**A_{02}**	**A_{03}**
1	**A_{10}**	**A_{11}**	**A_{12}**	**A_{13}**
2	**A_{20}**	**A_{21}**	**A_{22}**	**A_{23}**
3	**A_{30}**	**A_{31}**	**A_{32}**	**A_{33}**

	0	1	2
0	**B_{00}**	**B_{01}**	**B_{02}**
1	**B_{10}**	**B_{11}**	**B_{12}**
2	**B_{20}**	**B_{21}**	**B_{22}**
3	**B_{30}**	**B_{31}**	**B_{32}**

	0	1	2
0	**C_{00}**	**C_{01}**	**C_{02}**
1	**C_{10}**	**C_{11}**	**C_{12}**
2	**C_{20}**	**C_{21}**	**C_{22}**
3	**C_{30}**	**C_{31}**	**C_{32}**