

Workspace

Value

1x1024 double

8x128 double

9x128 double

1x1024 double

Name ▲



a



b



b_with_zero



c

b_with_zero

9x128 double

	1	2	3	4	5	6	7	8	
1	1	1	0	1	0	0	0	0	
2	1	1	1	0	0	1	0	0	
3	1	0	0	0	0	0	1	1	
4	0	0	0	1	1	1	0	1	
5	1	0	0	1	0	0	0	1	
6	0	0	0	0	1	0	1	1	
7	0	0	1	1	0	1	0	1	
8	0	0	1	0	0	0	0	1	
9	0	0	0	0	0			0	
10									

Contents

- Series to Parallel Optimum $O(n)$
- Series to Parallel Optimum + Zero $O(n)$
- Parallel to Series Optimum $O(n)$

```
%-----%
%%----- Exam Mid-Term 4 Digital Communication -----%%
%----- Supervisor: Dr.Shirvani Moghaddam -----%
%----- Source by Mohammad Reza Farhadi Nia ----- Date:Nov 2020 --%
%-----%
```

```
a = randi([0 1],1,1024)
b = Ser2ParOpt(a, 8)
b_with_zero = Ser2ParOptZ(a, 8)
c = Par2SerOpt(b_with_zero, 8, 128)
```

a =												
Columns 1 through 13												
1	1	1	0	1	0	0	0	1	1	0	0	0
Columns 14 through 26												
0	0	0	0	1	0	0	0	0	1	1	1	0
Columns 27 through 39												
0	1	1	0	1	0	0	0	0	1	0	1	0
Columns 40 through 52												
0	0	1	0	1	0	0	1	0	0	0	1	0
Columns 53 through 65												
0	1	0	0	0	0	1	1	1	1	1	1	1
Columns 66 through 78												
0	0	1	0	0	0	0	1	1	0	1	0	0
Columns 79 through 91												
0	1	1	0	0	1	1	1	1	1	0	0	1
Columns 92 through 104												
0	0	1	1	1	1	1	0	1	1	0	1	1

Columns 105 through 117

0	0	1	1	1	0	0	0	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 118 through 130

1	1	0	1	1	1	1	1	1	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 131 through 143

0	0	1	1	0	1	0	1	1	1	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 144 through 156

0	1	1	0	1	1	0	1	0	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 157 through 169

0	0	1	0	0	0	0	0	0	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 170 through 182

1	0	1	0	0	1	0	0	0	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 183 through 195

1	0	1	1	0	0	1	1	0	1	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 196 through 208

1	1	1	1	1	0	0	1	0	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 209 through 221

1	0	0	1	0	1	1	1	0	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 222 through 234

1	0	0	1	1	1	1	0	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 235 through 247

0	0	1	0	1	0	1	1	1	1	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 248 through 260

0	0	0	1	0	1	1	0	0	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 261 through 273

0	0	0	0	0	0	1	0	1	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 274 through 286

0	0	1	0	0	0	0	0	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 287 through 299

0	0	1	0	0	1	0	1	1	1	1	1	1
Columns 300 through 312												
1	0	0	0	0	1	1	0	0	0	0	1	0
Columns 313 through 325												
1	0	1	0	1	1	0	1	0	0	1	1	1
Columns 326 through 338												
1	0	1	0	0	1	0	0	1	0	0	1	0
Columns 339 through 351												
0	0	0	0	1	0	0	0	1	1	1	1	1
Columns 352 through 364												
1	1	1	1	1	1	0	1	0	1	0	0	0
Columns 365 through 377												
1	0	0	1	0	0	1	1	1	1	1	1	1
Columns 378 through 390												
1	0	0	0	1	0	1	1	1	0	1	0	1
Columns 391 through 403												
1	1	0	1	1	0	0	1	0	1	0	0	1
Columns 404 through 416												
0	0	1	0	1	1	0	0	1	1	1	0	0
Columns 417 through 429												
0	0	0	1	1	1	0	0	1	0	1	0	1
Columns 430 through 442												
1	0	0	1	1	0	1	0	0	1	0	0	1
Columns 443 through 455												
1	1	1	0	1	1	0	0	1	0	0	0	0
Columns 456 through 468												
0	1	1	1	0	1	1	1	0	0	0	1	0
Columns 469 through 481												

1	1	0	1	0	1	0	1	1	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 482 through 494

1	0	0	0	1	1	0	1	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 495 through 507

0	0	0	0	1	1	1	0	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 508 through 520

0	1	1	1	0	1	1	0	1	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 521 through 533

1	1	0	1	1	0	1	1	1	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 534 through 546

0	0	0	0	0	1	0	1	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 547 through 559

0	1	1	1	1	0	1	0	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 560 through 572

0	1	0	1	1	1	0	1	1	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 573 through 585

1	1	0	1	0	0	1	1	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 586 through 598

0	0	0	1	1	0	1	1	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 599 through 611

0	0	1	0	1	1	1	1	1	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 612 through 624

1	0	1	0	1	1	0	0	0	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 625 through 637

0	1	1	0	1	1	0	1	0	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 638 through 650

1	0	1	1	0	0	0	1	1	0	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 651 through 663

0	1	1	1	0	0	0	1	1	1	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 664 through 676

0	0	1	0	1	0	1	0	0	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 677 through 689

0	1	0	1	1	0	1	0	0	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 690 through 702

1	0	0	1	0	1	1	1	1	0	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 703 through 715

0	0	0	0	1	1	0	1	1	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 716 through 728

0	1	1	0	1	1	0	1	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 729 through 741

0	1	1	0	1	0	1	1	0	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 742 through 754

0	0	0	0	1	0	0	1	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 755 through 767

1	0	1	1	1	0	0	0	0	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 768 through 780

1	1	0	0	0	1	1	0	1	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 781 through 793

1	0	1	1	0	0	0	1	1	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 794 through 806

1	1	0	1	1	1	1	0	0	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 807 through 819

0	1	0	1	1	1	1	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 820 through 832

1	0	1	1	1	0	1	0	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 833 through 845

1	0	0	0	0	1	1	1	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 846 through 858

0	1	1	1	1	1	1	1	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 859 through 871

1	1	1	1	1	1	1	1	0	1	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 872 through 884

1	0	0	1	1	1	1	1	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 885 through 897

1	0	1	1	0	0	1	1	1	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 898 through 910

0	0	1	1	1	0	1	0	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 911 through 923

1	0	1	1	1	0	0	1	1	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 924 through 936

1	0	1	1	1	0	1	1	0	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 937 through 949

0	1	0	0	0	1	0	1	1	1	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 950 through 962

1	1	1	1	0	0	0	0	1	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 963 through 975

0	0	0	0	0	1	1	0	0	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 976 through 988

0	0	0	1	0	1	0	1	0	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 989 through 1001

0	1	1	0	1	0	0	1	1	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 1002 through 1014

1	0	1	1	0	0	1	0	0	0	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 1015 through 1024

1	1	0	0	1	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---

Series to Parallel Optimum O(n)

```
function Output = Ser2ParOpt(Input, out_len)
    for row = 1:ceil(length(Input)/out_len)
        Output(1:out_len, row) = Input(1, (row-1)*out_len+1:row*out_len);
    end
end
```

b =

Columns 1 through 13

1	1	0	1	0	0	0	0	1	1	1	0	1
1	1	1	0	0	1	0	0	0	1	0	0	1
1	0	0	0	0	0	1	1	0	0	0	1	0
0	0	0	1	1	1	0	1	1	1	1	0	1
1	0	0	1	0	0	0	1	0	0	1	0	1
0	0	0	0	1	0	1	1	0	0	1	1	0
0	0	1	1	0	1	0	1	0	0	1	1	1
0	0	1	0	0	0	0	1	0	1	1	1	1

Columns 14 through 26

0	1	1	1	0	1	0	0	1	0	1	0	0
0	0	1	0	1	1	0	0	1	0	1	0	0
1	0	1	0	1	0	1	0	0	0	0	1	1
1	0	1	0	1	1	0	0	1	0	0	1	0
1	0	1	1	0	1	0	0	0	0	1	1	1
0	1	1	1	1	0	0	1	0	1	1	1	0
0	1	0	0	0	1	1	1	1	1	0	1	0
0	0	0	1	0	0	0	1	0	0	1	1	0

Columns 27 through 39

1	0	1	0	1	0	0	0	1	0	1	1	1
0	1	1	0	1	0	0	0	0	1	0	1	1
0	1	1	0	1	1	0	1	0	1	0	1	0
1	1	1	0	1	0	1	0	1	1	1	1	0
0	0	0	1	0	1	0	1	0	0	0	0	0
1	1	1	0	1	1	0	0	0	0	1	0	0
1	0	0	1	0	0	0	0	0	0	1	0	1
1	0	0	0	0	0	0	1	0	0	1	0	0

Columns 40 through 52

1	0	0	1	0	1	1	0	1	1	0	0	1
0	0	0	0	0	1	0	0	1	1	1	0	0
1	1	1	0	1	1	0	1	0	0	1	1	0
0	1	0	0	1	1	0	1	0	1	0	0	1
1	1	0	0	1	1	1	1	0	0	0	0	1
1	1	1	0	1	0	0	1	1	1	1	1	1
0	0	0	1	1	1	0	1	0	1	0	0	0
1	1	0	0	1	0	1	1	1	1	1	1	0

Columns 53 through 65

0	1	1	0	0	1	0	0	1	1	0	1	1
0	0	1	1	0	1	0	1	1	1	0	1	1
0	1	0	1	1	1	1	0	0	0	1	1	0
1	0	1	1	0	0	0	1	0	0	1	0	1
1	1	0	1	0	1	1	1	0	0	1	1	1
1	1	0	0	0	1	1	0	1	0	0	1	0
0	0	1	1	0	1	0	1	1	0	1	1	0
0	0	0	1	0	0	1	1	0	0	1	0	0

Columns 66 through 78

1	1	0	0	1	1	0	0	0	1	1	1	1
1	0	0	1	0	0	0	0	0	0	0	1	0
0	0	1	0	1	1	0	1	0	1	1	1	0
1	1	0	1	1	1	1	1	0	1	1	1	0
1	1	1	1	1	1	1	0	1	0	1	0	1
0	0	0	1	1	0	1	0	1	1	1	1	1
1	0	1	1	1	1	0	0	0	0	1	0	1
1	0	1	0	0	1	1	0	1	0	0	1	0

Columns 79 through 91

0	0	1	0	0	0	0	1	1	1	0	1	1
1	0	0	1	1	1	1	0	1	1	0	0	0
1	0	0	0	1	0	0	1	0	0	1	0	1
0	0	0	1	1	1	0	0	0	1	1	0	0
1	1	1	1	0	0	0	0	1	0	0	1	0
1	1	1	1	1	1	1	1	0	1	1	1	0
0	0	0	0	1	0	0	1	1	0	1	0	0
1	1	1	0	0	0	1	1	1	0	0	1	0

Columns 92 through 104

0	0	0	0	0	1	1	0	1	0	0	0	0
1	1	1	0	0	0	1	0	1	0	1	0	1
1	1	0	1	0	0	1	0	1	0	1	0	0
0	1	0	0	0	0	0	1	0	0	1	1	0
1	1	1	1	0	1	1	1	1	1	1	0	1
0	0	1	1	1	1	0	0	1	1	0	1	1
1	0	0	1	1	0	1	1	1	0	0	1	0
1	0	0	0	1	1	1	1	1	1	0	1	1

Columns 105 through 117

1	1	1	0	1	0	1	0	0	0	1	1	0
0	1	1	1	1	0	1	0	0	1	1	0	1
0	1	1	1	0	1	0	1	0	1	1	1	1
0	0	1	1	1	1	0	1	1	1	0	1	0
0	0	1	1	0	1	1	1	1	0	0	0	1
1	0	0	1	1	1	0	1	1	0	1	1	1
1	1	1	1	0	1	1	0	0	1	1	1	1
1	1	1	1	1	1	1	0	1	0	1	1	0

Columns 118 through 128

0	1	1	0	1	0	0	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---

1	1	0	1	0	0	0	0	1	0	0
0	0	0	0	0	1	1	0	0	0	1
0	0	0	0	0	0	1	1	1	1	1
0	1	0	0	1	1	0	1	1	0	1
1	1	1	0	1	0	1	1	0	1	1
0	1	0	0	1	1	1	1	0	1	1
1	1	0	1	0	0	0	0	1	1	1

Series to Parallel Optimum + Zero O(n)

```
function Output = Ser2ParOptZ(Input, out_len)
    for row = 1:ceil(length(Input)/out_len)
        Output(1:out_len, row) = Input(1, (row-1)*out_len+1:row*out_len);
        Output(out_len+1, row) = 0;
    end
end
```

b_with_zero =

Columns 1 through 13

1	1	0	1	0	0	0	0	1	1	1	0	1
1	1	1	0	0	1	0	0	0	1	0	0	1
1	0	0	0	0	0	1	1	0	0	0	1	0
0	0	0	1	1	1	0	1	1	1	1	0	1
1	0	0	1	0	0	0	1	0	0	1	0	1
0	0	0	0	1	0	1	1	0	0	1	1	0
0	0	1	1	0	1	0	1	0	0	1	1	1
0	0	1	0	0	0	0	1	0	1	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 14 through 26

0	1	1	1	0	1	0	0	1	0	1	0	0
0	0	1	0	1	1	0	0	1	0	1	0	0
1	0	1	0	1	0	1	0	0	0	0	1	1
1	0	1	0	1	1	0	0	1	0	0	1	0
1	0	1	1	0	1	0	0	0	0	1	1	1
0	1	1	1	1	0	0	1	0	1	1	1	0
0	1	0	0	0	1	1	1	1	1	0	1	0
0	0	0	1	0	0	0	1	0	0	1	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 27 through 39

1	0	1	0	1	0	0	0	1	0	1	1	1
0	1	1	0	1	0	0	0	0	1	0	1	1
0	1	1	0	1	1	0	1	0	1	0	1	0
1	1	1	0	1	0	1	0	1	1	1	1	0
0	0	0	1	0	1	0	1	0	0	0	0	0
1	1	1	0	1	1	0	0	0	0	1	0	0
1	0	0	1	0	0	0	0	0	0	1	0	1
1	0	0	0	0	0	0	1	0	0	1	0	0

0	0	0	0	0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 40 through 52

1	0	0	1	0	1	1	0	1	1	0	0	1
0	0	0	0	0	1	0	0	1	1	1	0	0
1	1	1	0	1	1	0	1	0	0	1	1	0
0	1	0	0	1	1	0	1	0	1	0	0	1
1	1	0	0	1	1	1	1	0	0	0	0	1
1	1	1	0	1	0	0	1	1	1	1	1	1
0	0	0	1	1	1	0	1	0	1	0	0	0
1	1	0	0	1	0	1	1	1	1	1	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 53 through 65

0	1	1	0	0	1	0	0	1	1	0	1	1
0	0	1	1	0	1	0	1	1	1	0	1	1
0	1	0	1	1	1	1	0	0	0	1	1	0
1	0	1	1	0	0	0	1	0	0	1	0	1
1	1	0	1	0	1	1	1	0	0	1	1	1
1	1	0	0	0	1	1	0	1	0	0	1	0
0	0	1	1	0	1	0	1	1	0	1	1	0
0	0	0	1	0	0	1	1	0	0	1	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 66 through 78

1	1	0	0	1	1	0	0	0	1	1	1	1
1	0	0	1	0	0	0	0	0	0	0	1	0
0	0	1	0	1	1	0	1	0	1	1	1	0
1	1	0	1	1	1	1	1	0	1	1	1	0
1	1	1	1	1	1	1	0	1	0	1	0	1
0	0	0	1	1	0	1	0	1	1	1	1	1
1	0	1	1	1	1	0	0	0	0	1	0	1
1	0	1	0	0	1	1	0	1	0	0	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 79 through 91

0	0	1	0	0	0	0	1	1	1	0	1	1
1	0	0	1	1	1	1	0	1	1	0	0	0
1	0	0	0	1	0	0	1	0	0	1	0	1
0	0	0	1	1	1	0	0	0	1	1	0	0
1	1	1	1	0	0	0	0	1	0	0	1	0
1	1	1	1	1	1	1	1	0	1	1	1	0
0	0	0	0	1	0	0	1	1	0	1	0	0
1	1	1	0	0	0	1	1	1	0	0	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 92 through 104

0	0	0	0	0	1	1	0	1	0	0	0	0
1	1	1	0	0	0	1	0	1	0	1	0	1
1	1	0	1	0	0	1	0	1	0	1	0	0
0	1	0	0	0	0	0	1	0	0	1	1	0
1	1	1	1	0	1	1	1	1	1	1	0	1

0	0	1	1	1	1	0	0	1	1	0	1	1
1	0	0	1	1	0	1	1	1	0	0	1	0
1	0	0	0	1	1	1	1	1	1	0	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 105 through 117

1	1	1	0	1	0	1	0	0	0	1	1	0
0	1	1	1	1	0	1	0	0	1	1	0	1
0	1	1	1	0	1	0	1	0	1	1	1	1
0	0	1	1	1	1	0	1	1	1	0	1	0
0	0	1	1	0	1	1	1	1	0	0	0	1
1	0	0	1	1	1	0	1	1	0	1	1	1
1	1	1	1	0	1	1	0	0	1	1	1	1
1	1	1	1	1	1	1	0	1	0	1	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0

Columns 118 through 128

0	1	1	0	1	0	0	1	1	0	0
1	1	0	1	0	0	0	0	1	0	0
0	0	0	0	0	1	1	0	0	0	1
0	0	0	0	0	0	1	1	1	1	1
0	1	0	0	1	1	0	1	1	0	1
1	1	1	0	1	0	1	1	0	1	1
0	1	0	0	1	1	1	1	0	1	1
1	1	0	1	0	0	0	0	1	1	1
0	0	0	0	0	0	0	0	0	0	0

Parallel to Series Optimum O(n)

```
function Output = Par2SerOpt(Input, row_len, column_len)
    for column = 1:column_len
        Output(1, (column-1)*row_len+1:column*row_len) = Input(1:row_len, column);
    end
end
```

c =

Columns 1 through 13

1	1	1	0	1	0	0	0	1	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 14 through 26

0	0	0	0	1	0	0	0	0	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 27 through 39

0	1	1	0	1	0	0	0	0	1	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 40 through 52

0	0	1	0	1	0	0	1	0	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 53 through 65

0	1	0	0	0	0	1	1	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 66 through 78

0	0	1	0	0	0	0	1	1	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 79 through 91

0	1	1	0	0	1	1	1	1	1	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 92 through 104

0	0	1	1	1	1	1	0	1	1	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 105 through 117

0	0	1	1	1	0	0	0	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 118 through 130

1	1	0	1	1	1	1	1	1	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 131 through 143

0	0	1	1	0	1	0	1	1	1	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 144 through 156

0	1	1	0	1	1	0	1	0	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 157 through 169

0	0	1	0	0	0	0	0	0	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 170 through 182

1	0	1	0	0	1	0	0	0	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 183 through 195

1	0	1	1	0	0	1	1	0	1	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 196 through 208

1	1	1	1	1	0	0	1	0	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 209 through 221

1	0	0	1	0	1	1	1	0	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 222 through 234

1	0	0	1	1	1	1	0	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 235 through 247

0	0	1	0	1	0	1	1	1	1	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 248 through 260

0	0	0	1	0	1	1	0	0	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 261 through 273

0	0	0	0	0	0	1	0	1	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 274 through 286

0	0	1	0	0	0	0	0	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 287 through 299

0	0	1	0	0	1	0	1	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 300 through 312

1	0	0	0	0	1	1	0	0	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 313 through 325

1	0	1	0	1	1	0	1	0	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 326 through 338

1	0	1	0	0	1	0	0	1	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 339 through 351

0	0	0	0	1	0	0	0	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 352 through 364

1	1	1	1	1	1	0	1	0	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 365 through 377

1	0	0	1	0	0	1	1	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 378 through 390

1	0	0	0	1	0	1	1	1	0	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 391 through 403

1	1	0	1	1	0	0	1	0	1	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 404 through 416

0	0	1	0	1	1	0	0	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 417 through 429

0	0	0	1	1	1	0	0	1	0	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 430 through 442

1	0	0	1	1	0	1	0	0	1	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 443 through 455

1	1	1	0	1	1	0	0	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 456 through 468

0	1	1	1	0	1	1	1	0	0	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 469 through 481

1	1	0	1	0	1	0	1	1	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 482 through 494

1	0	0	0	1	1	0	1	1	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 495 through 507

0	0	0	0	1	1	1	0	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 508 through 520

0	1	1	1	0	1	1	0	1	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 521 through 533

1	1	0	1	1	0	1	1	1	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 534 through 546

0	0	0	0	0	1	0	1	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 547 through 559

0	1	1	1	1	0	1	0	1	1	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 560 through 572

0	1	0	1	1	1	0	1	1	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 573 through 585

1	1	0	1	0	0	1	1	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 586 through 598

0	0	0	1	1	0	1	1	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 599 through 611

0 0 1 0 1 1 1 1 1 0 1 1 1

Columns 612 through 624

1 0 1 0 1 1 0 0 0 1 1 1 0

Columns 625 through 637

0 1 1 0 1 1 0 1 0 0 0 0 1

Columns 638 through 650

1 0 1 1 0 0 0 1 1 0 1 0 1

Columns 651 through 663

0 1 1 1 0 0 0 1 1 1 0 1 1

Columns 664 through 676

0 0 1 0 1 0 1 0 0 0 1 0 0

Columns 677 through 689

0 1 0 1 1 0 1 0 0 1 1 1 1

Columns 690 through 702

1 0 0 1 0 1 1 1 1 0 1 0 1

Columns 703 through 715

0 0 0 0 1 1 0 1 1 0 1 0 0

Columns 716 through 728

0 1 1 0 1 1 0 1 0 0 0 0 0

Columns 729 through 741

0 1 1 0 1 0 1 1 0 1 1 1 1

Columns 742 through 754

0 0 0 0 1 0 0 1 1 0 0 0 0

Columns 755 through 767

1 0 1 1 1 0 0 0 0 0 0 1 1

Columns 768 through 780

1 1 0 0 0 1 1 0 1 1 1 1 0

Columns 781 through 793

1	0	1	1	0	0	0	1	1	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 794 through 806

1	1	0	1	1	1	1	0	0	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 807 through 819

0	1	0	1	1	1	1	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 820 through 832

1	0	1	1	1	0	1	0	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 833 through 845

1	0	0	0	0	1	1	1	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 846 through 858

0	1	1	1	1	1	1	1	0	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 859 through 871

1	1	1	1	1	1	1	1	0	1	0	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 872 through 884

1	0	0	1	1	1	1	1	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 885 through 897

1	0	1	1	0	0	1	1	1	1	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 898 through 910

0	0	1	1	1	0	1	0	1	1	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 911 through 923

1	0	1	1	1	0	0	1	1	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 924 through 936

1	0	1	1	1	0	1	1	0	1	1	1	0
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 937 through 949

0	1	0	0	0	1	0	1	1	1	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 950 through 962

1	1	1	1	0	0	0	0	1	0	0	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 963 through 975

0	0	0	0	0	1	1	0	0	0	1	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 976 through 988

0	0	0	1	0	1	0	1	0	0	0	1	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 989 through 1001

0	1	1	0	1	0	0	1	1	1	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 1002 through 1014

1	0	1	1	0	0	1	0	0	0	1	0	1
---	---	---	---	---	---	---	---	---	---	---	---	---

Columns 1015 through 1024

1	1	0	0	1	1	1	1	1	1			
---	---	---	---	---	---	---	---	---	---	--	--	--