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Chapter 31

Additional Strings

Contents

As the game is designed to have multiple levels, we spend this chapter creating three sets of levels for the game.

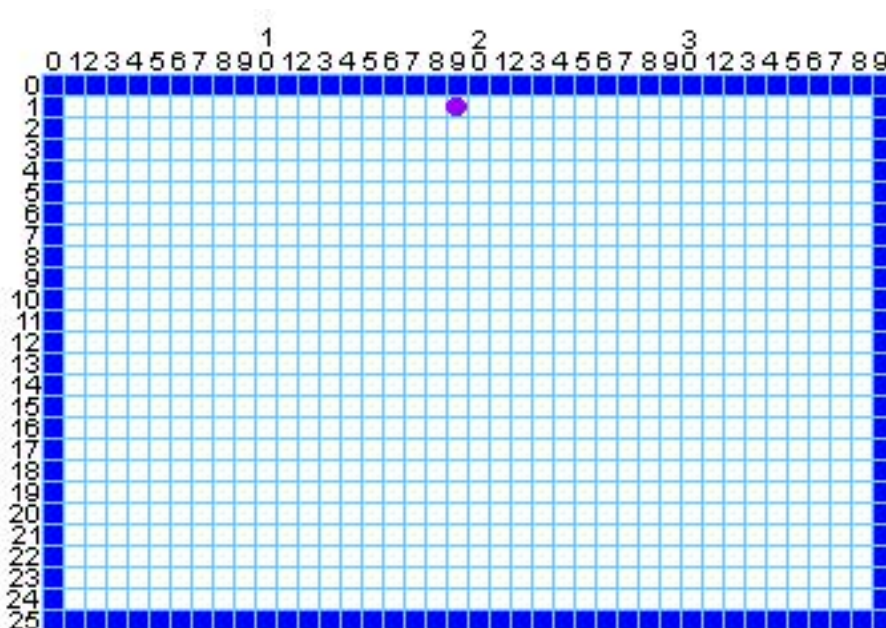
- Designing Levels for the Game - Overview of String Along levels
- Default Level Set - Layouts for the first (default) series of levels
- Dice Level Set - Layout for the dice series of levels
- Maze Level Set - Layout for the maze series of levels

Designing Levels for the Game

When an arcade game has multiple distinct levels, the information for the distinct levels needs to be created. While it is possible for the levels to be randomly generated by the computer, such levels tend not to be as good as levels that were created by humans. The problem is that humans need a way of generating the level. The best way is to create a level creation tool (construction set) that can be used to create all the level data.

This, needless to say, requires the creation of a program that lets the user lay out the level (and with more advanced games, set up paths and other game-play related information). While Flash does have some limited saving capabilities, they are not appropriate for the creation of such a tool. Instead, one would probably be better off creating a level editing tool with a different language.

String Along levels, however, are very simple. For this reason, it is very easy to create levels for the game by hand and then convert the hand-drawn levels into a small array of numbers that would describe the level. The first step in this process is to draw out the level. As this is grid, graph paper would work fine for this task. Likewise, a painting program could be used. Here is a template for such work.



String Along Set: Default set

String Along Level: Default level (1)

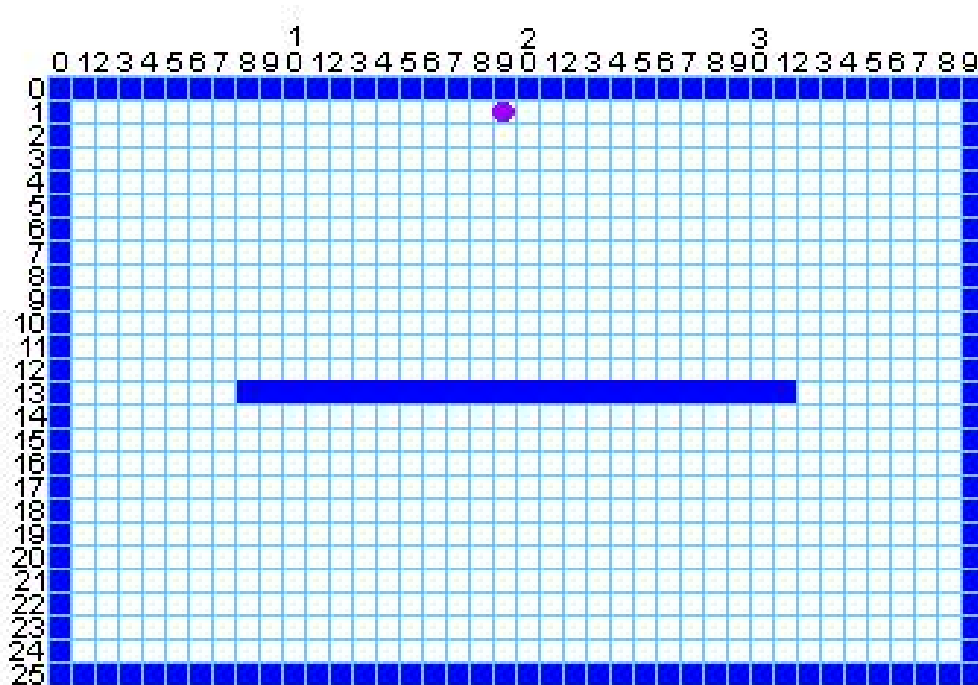
As you can see from the graph paper like image template above, the game uses 40x26 playfield. You will also notice that the grid is numbered from the top left corner, starting at coordinate 0,0 and ending with the bottom right corner being at location 39,25. At location 19,1 is where the player begins the game. While it is possible to add the ability to specify exactly where the player appears on a given level, I prefer the consistence of always starting the level from the same location.

To convert the graph into a game level, you need to break the lines you draw into solid rectangles. The game data is just an array that uses a series of these four coordinate rectangles. The outer edge of the playfield is always solid so you do not need to describe these locations in your array.

The whole level set is an array of arrays. Within the remaining 3 sections of this chapter we will create the three different String Along level sets. This will take the form of an image of the graphed out level followed by the array information for that level. Once all levels have been completed, we will conclude with the final set array that would be used in the game.

Default level Set

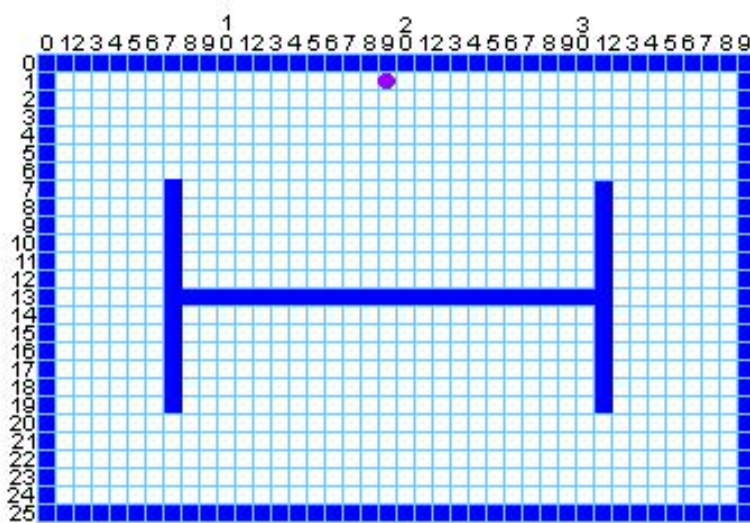
The first level is just the default level (as shown in the previous section). To use this level you only need to pass a null to the level layout routine, so in the set array you would have the value null for this level.



String Along Set: Default set

String Along Level: Simple level (2)

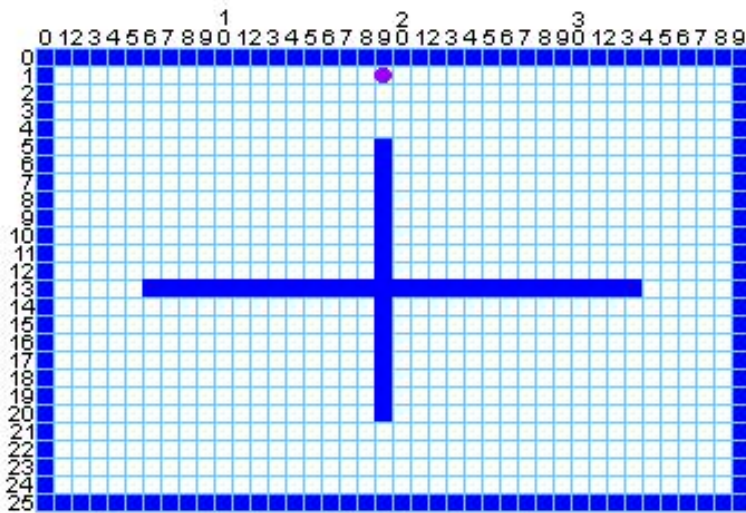
```
new Array(8,13,31,13)
```



String Along Set: Default set

String Along Level:H level (3)

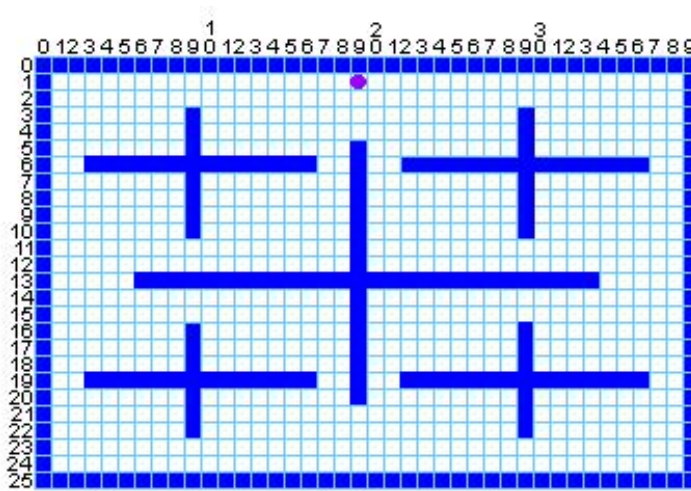
```
new Array(8,7,8,19, 8,13,31,13, 31,7,31,19)
```



String Along Set: Default set

String Along Level:Plus level (4)

```
new Array(6,13,33,13, 19,5,19,20)
```



String Along Set: Default set

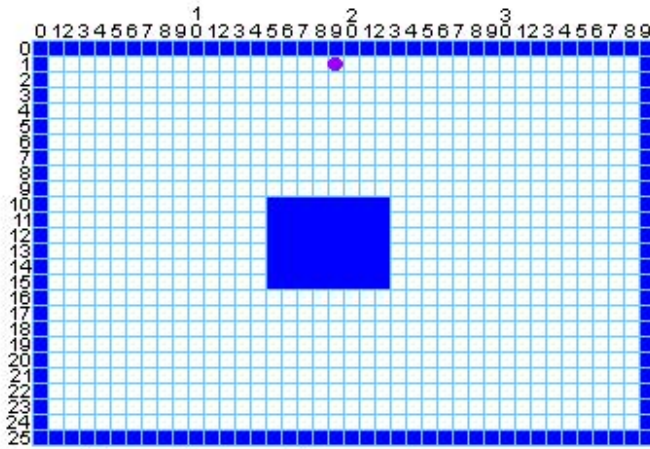
String Along Level: Plus level (5)

```
new Array(6,13,33,13, 19,5,19,20, 9,3,9,10, 3,6,16,6, 29,3,29,10, 22,6,36,6,
9,16,9,22, 3,19,16,19, 29,16,29,22, 22,19,36,19 )
```

final level code.

```
num_playfields = 5;
levels = new Array(
    null,
    new Array(8,13,31,13),
    new Array(8,7,8,19, 8,13,31,13, 31,7,31,19),
    new Array(6,13,33,13, 19,5,19,20),
    new Array(6,13,33,13, 19,5,19,20,
        9,3,9,10, 3,6,16,6,
        29,3,29,10, 22,6,36,6,
        9,16,9,22, 3,19,16,19,
        29,16,29,22, 22,19,36,19 )
)
```

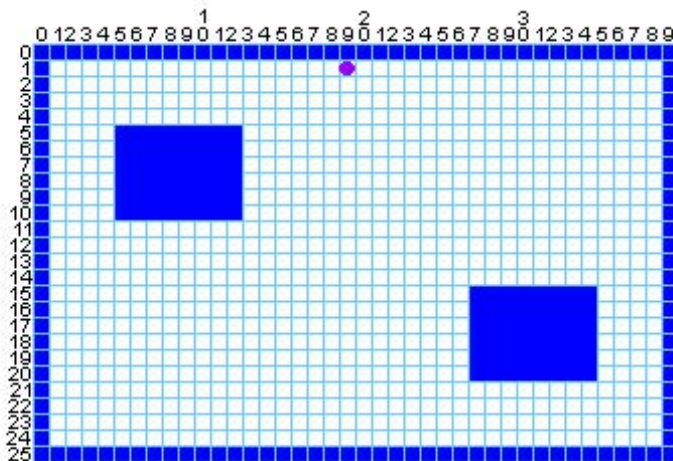
Dice Level Set



String Along Set: Dice set

String Along Level:One level (1)

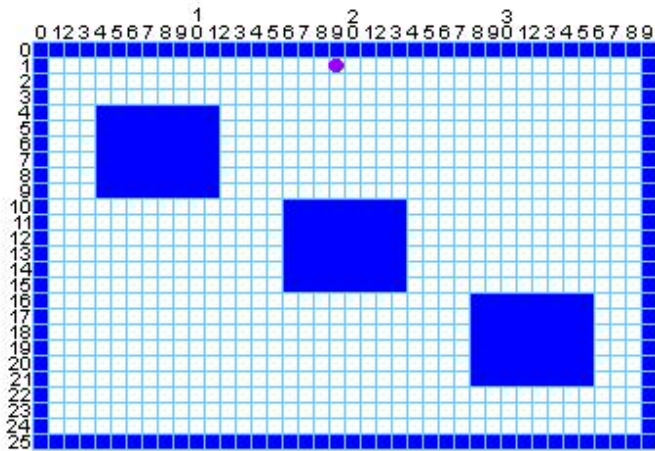
```
new Array(15,10,22,15)
```



String Along Set: Dice set

String Along Level:Two level (2)

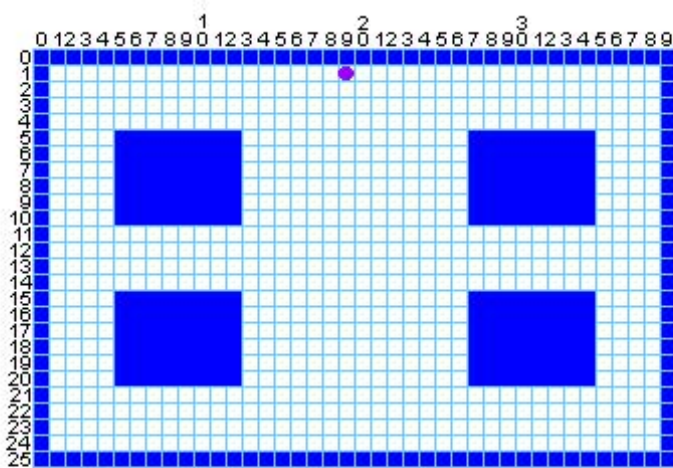
```
new Array(5,5,12,10, 27,15,34,20)
```

String Along Set: Dice set

String Along Level: Three level (3)

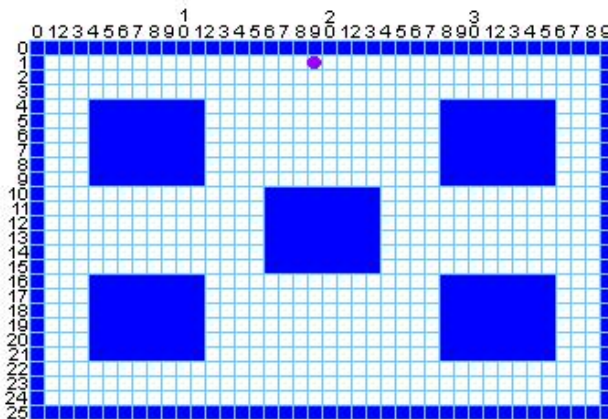
```
new Array(4,4,11,9, 16,10,23,15, 28,16,35,21)
```



String Along Set: Dice set

String Along Level: Four level (4)

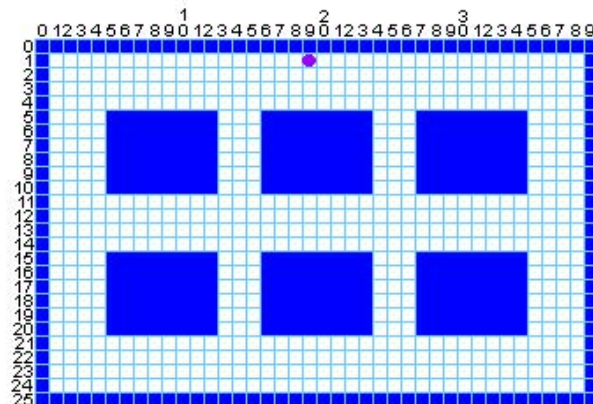
```
new Array (5,5,12,10, 5,15,12,20, 27,5,34,10, 27,15,34,20)
```

String Along Set: Dice set

String Along Level: Five level (5)

```
new Array(4,4,11,9, 4,16,11,21, 16,10,23,15, 28,4,35,9, 28,16,35,21),
```



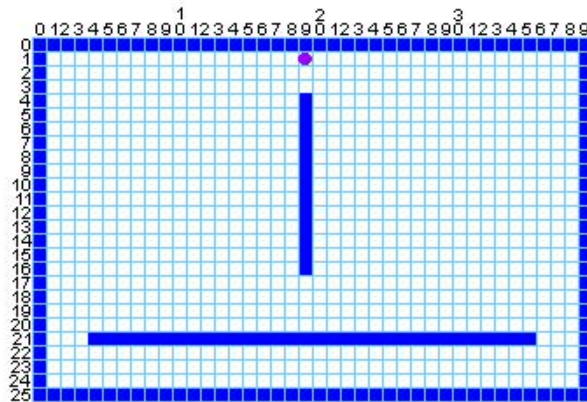
String Along Set: Dice set

String Along Level: Six level (6)

```
new Array (5,5,12,10, 5,15,12,20, 16,5,23,10, 16,15,23,20, 27,5,34,10,
27,15,34,20)
```

```
final code:
num_playfields = 6;
levels = new Array(
new Array(15,10,22,15),
new Array(5,5,12,10, 27,15,34,20),
new Array(4,4,11,9, 16,10,23,15, 28,16,35,21),
new Array (5,5,12,10, 5,15,12,20, 27,5,34,10, 27,15,34,20),
new Array(4,4,11,9, 4,16,11,21, 16,10,23,15, 28,4,35,9, 28,16,35,21),
new Array (5,5,12,10, 5,15,12,20, 16,5,23,10, 16,15,23,20, 27,5,34,10,
27,15,34,20)
)
```

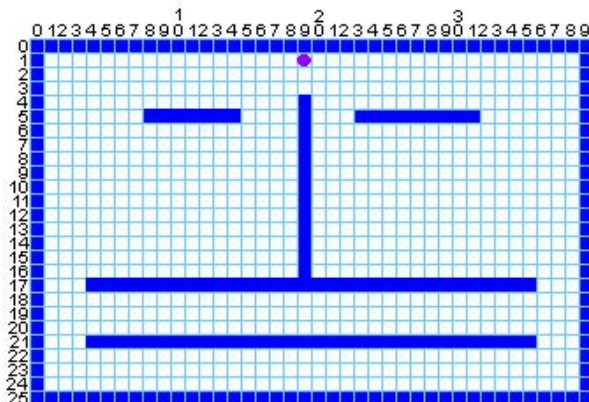

Maze level Set



String Along Set: Maze set

String Along Level: Lines level (1)

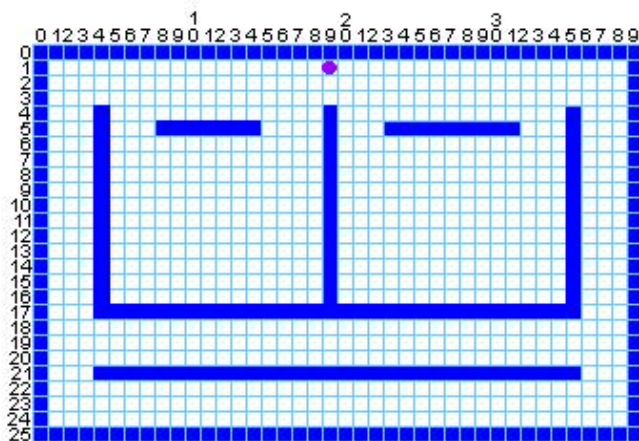
```
new Array(new Array(19, 4, 19, 16, 4, 21, 35, 21)
```



String Along Set: Maze set

String Along Level: More lines level (2)

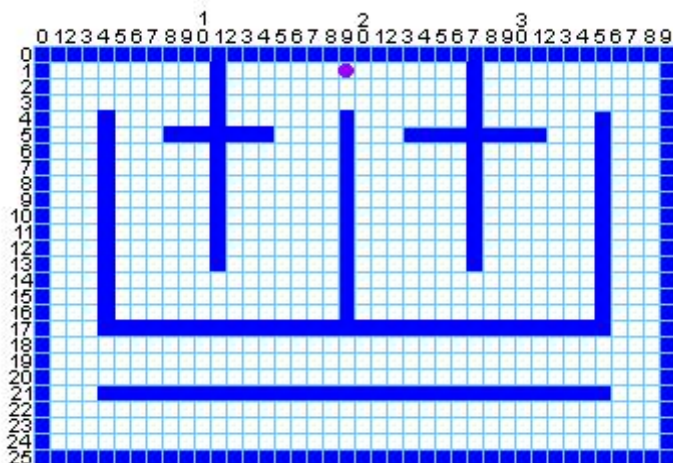
```
new Array(19, 4, 19, 16, 4, 21, 35, 21,  
4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5),
```



String Along Set: Maze set

String Along Level: Simple maze level (3)

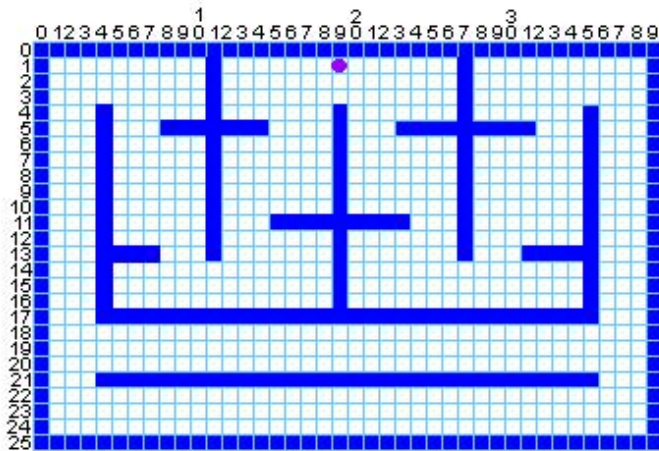
```
new Array(19, 4, 19, 16, 4, 21, 35, 21,
          4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5,
          4, 4, 4, 16, 35, 4, 35, 16),
```



String Along Set: Maze set

String Along Level: Almost done level (4)

```
new Array(19, 4, 19, 16, 4, 21, 35, 21,
          4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5,
          4, 4, 4, 16, 35, 4, 35, 16,
          11, 1, 11, 13, 27, 1, 27, 13),
```

String Along Set: Maze set

String Along Level: Full maze level (5)

```
new Array(19, 4, 19, 16, 4, 21, 35, 21,  
          4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5,  
          4, 4, 4, 16, 35, 4, 35, 16,  
          11, 1, 11, 13, 27, 1, 27, 13,  
          5, 13, 7, 13, 15, 11, 23, 11, 31, 13, 34, 13));
```

Final code:

```
num_playfields = 5;  
levels = new Array(new Array(19, 4, 19, 16, 4, 21, 35, 21),  
                   new Array(19, 4, 19, 16, 4, 21, 35, 21,  
                              4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5),  
                   new Array(19, 4, 19, 16, 4, 21, 35, 21,  
                              4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5,  
                              4, 4, 4, 16, 35, 4, 35, 16),  
                   new Array(19, 4, 19, 16, 4, 21, 35, 21,  
                              4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5,  
                              4, 4, 4, 16, 35, 4, 35, 16,  
                              11, 1, 11, 13, 27, 1, 27, 13),  
                   new Array(19, 4, 19, 16, 4, 21, 35, 21,  
                              4, 17, 35, 17, 8, 5, 14, 5, 23, 5, 31, 5,  
                              4, 4, 4, 16, 35, 4, 35, 16,  
                              11, 1, 11, 13, 27, 1, 27, 13,  
                              5, 13, 7, 13, 15, 11, 23, 11, 31, 13, 34, 13));
```