The SMBX64 Level Map

Probed by Wohlstand 02/12/2014

Introduction

Standard parameters:

|	
Standard size of one block	32x32 pixels
Possible on screen display height	19 blocks
Possible on screen display width	25 blocks
Height of screen	608 pixels (non 600, 608: 608/19=32 — one block size)
Width of screen	800 pixels
Max level space size:	419998×419998 pixels (but it is allowed to come out of limits)

Limits of objects on one level map:

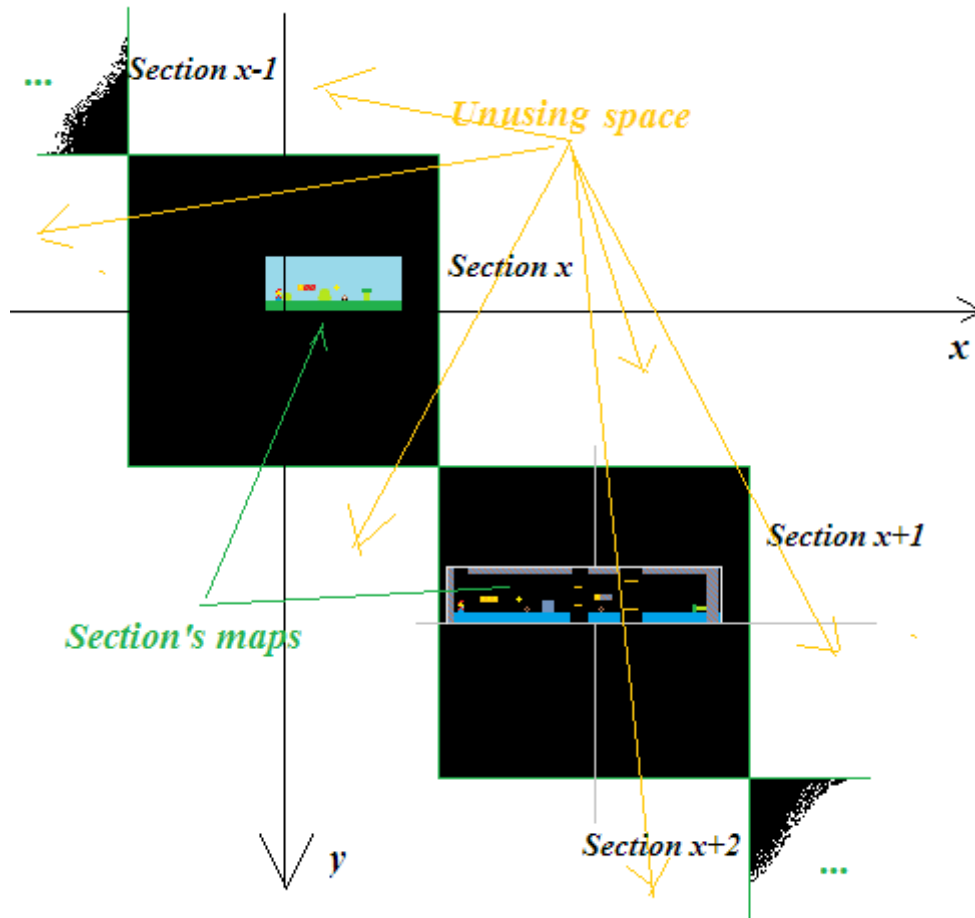|	
Blocks:	20000
NPCs:	5000
Background objects:	8000
Doors:	200

Level Map:

Each level map is divided into 21 sections, in which a "room" can be created. All sections are located in the same level space. Levels are displayed on coordinates with the reflected Y.
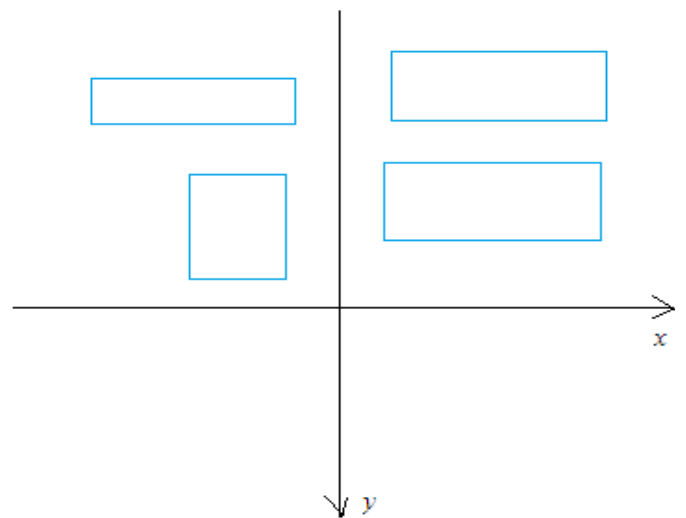
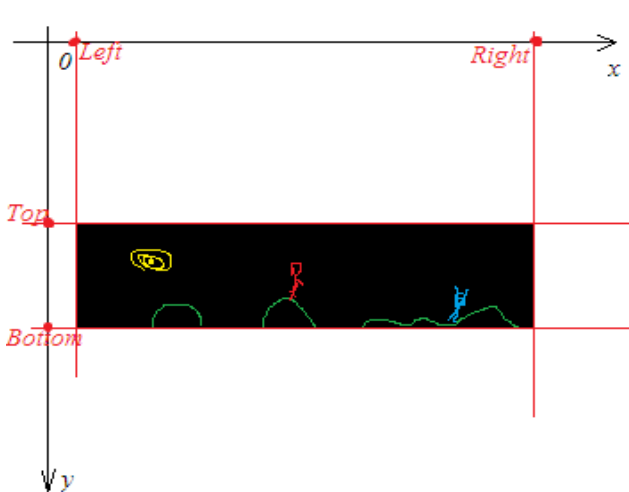**Default section positions:**
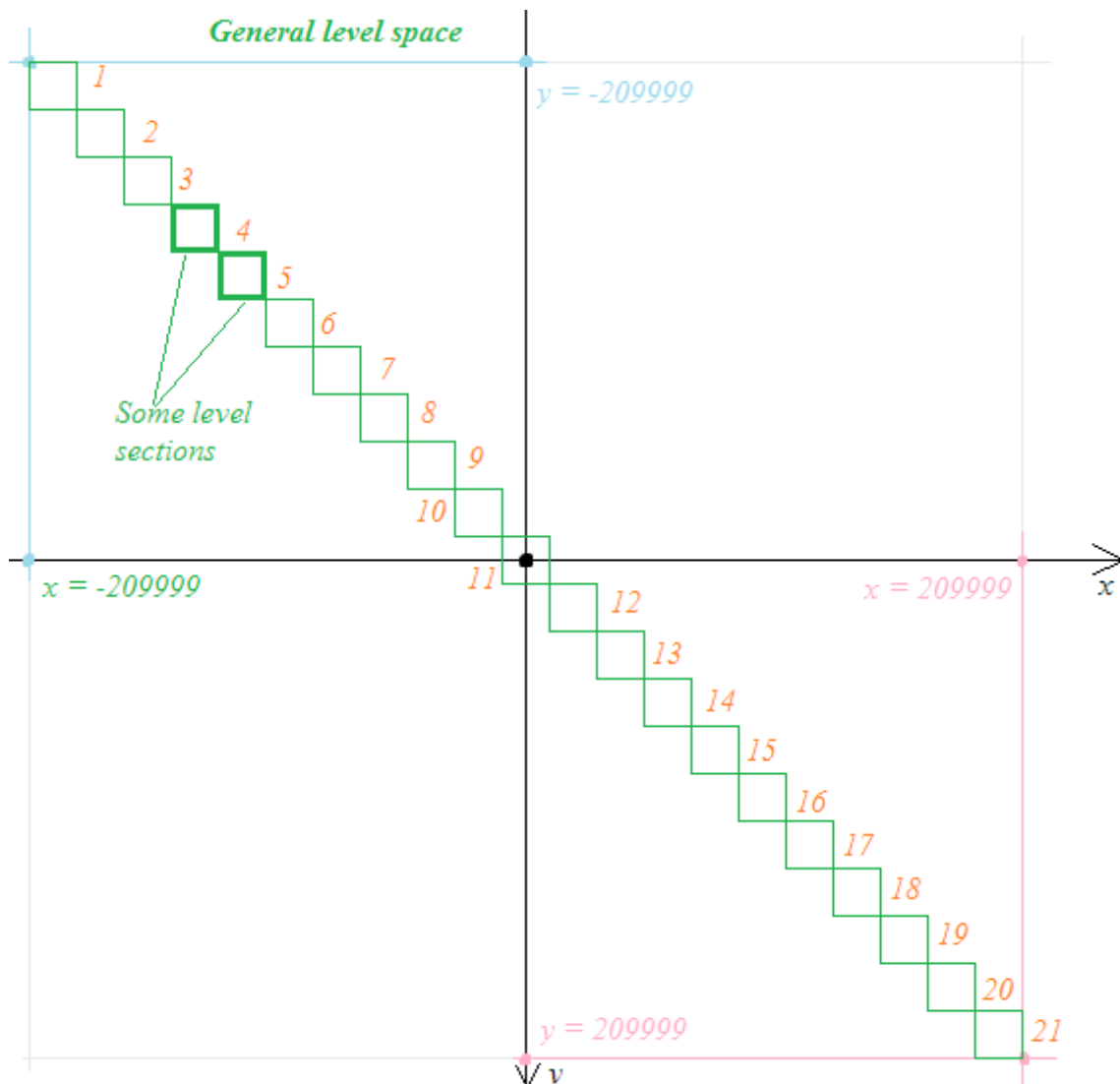
Level sections

The green squares – is a default zones of level sections:
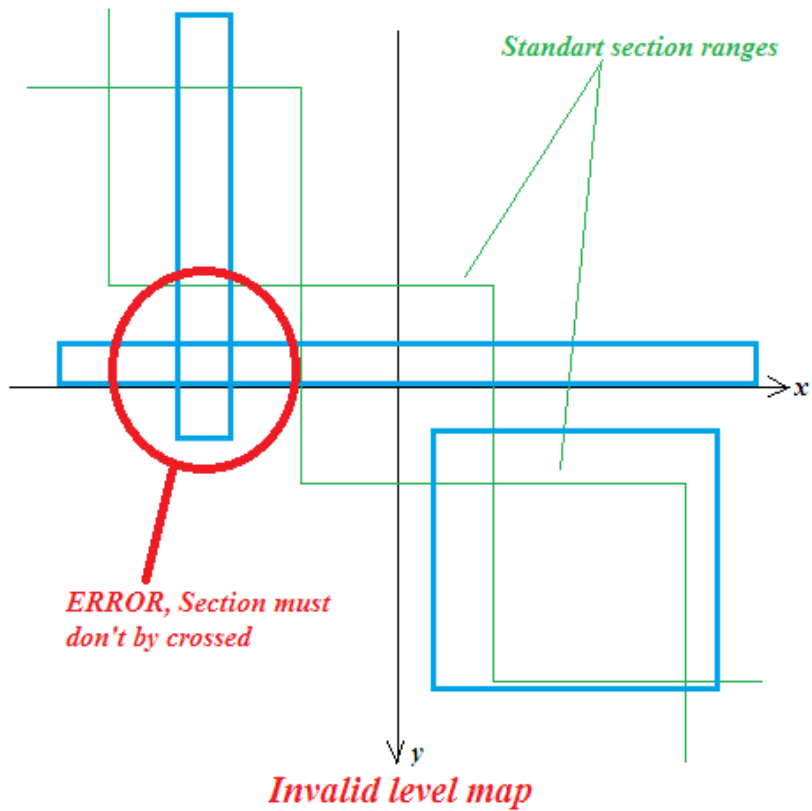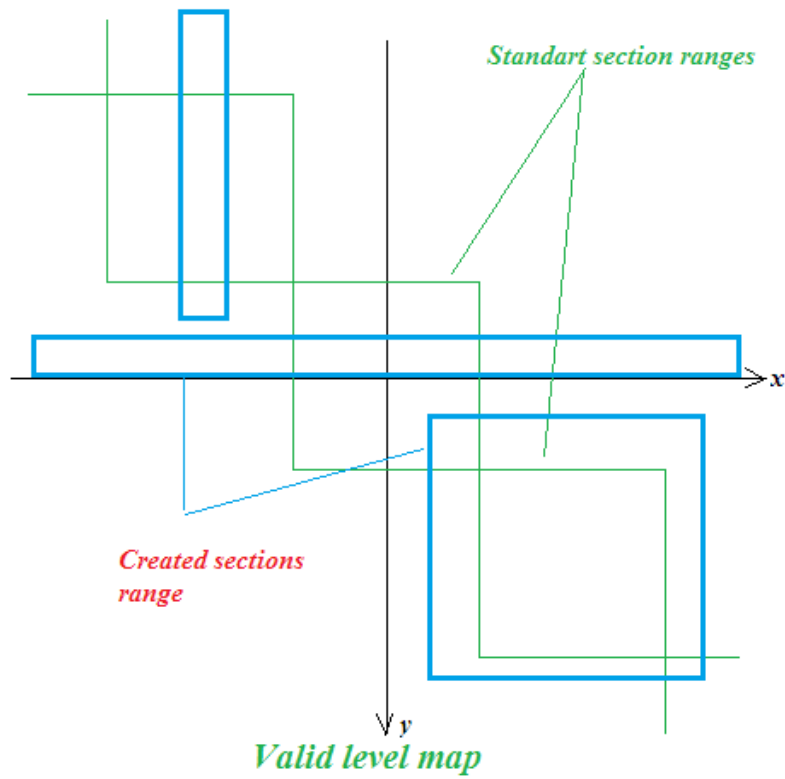

The section size and position are defined by the position of each side of the section.
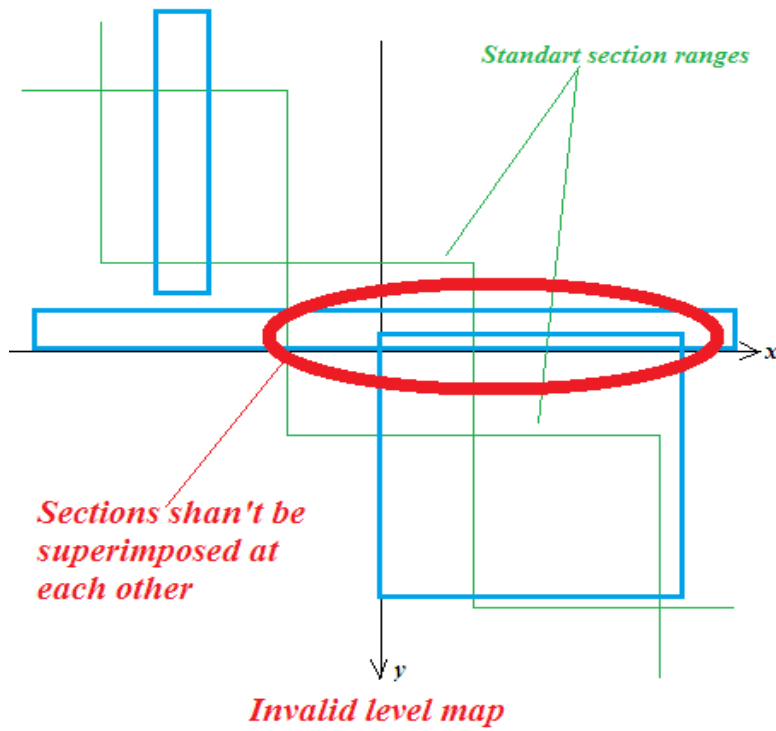height and width are calculated with a formula:

$$W = |L\text{-}R| \qquad H = |T\text{-}B|$$

Sections can have any size and position, but can't be crossed.

Examples:

Standart section ranges

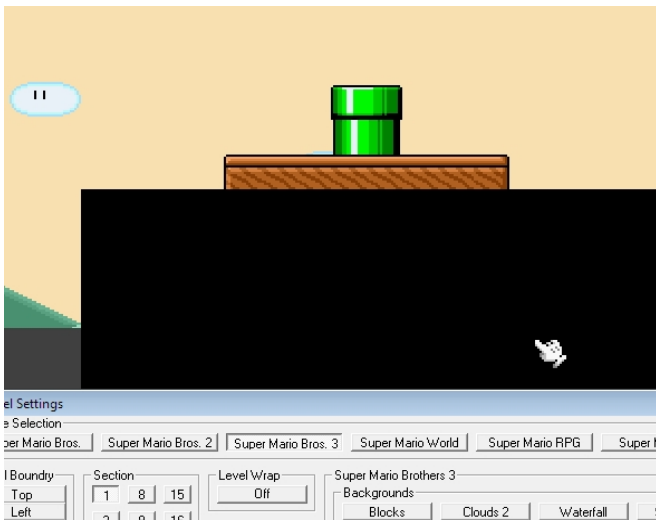*Created sections range*

Valid level map

Standart section ranges

ERROR, Section must don't by crossed

Invalid level map

Consequences of inter-crossing sections:
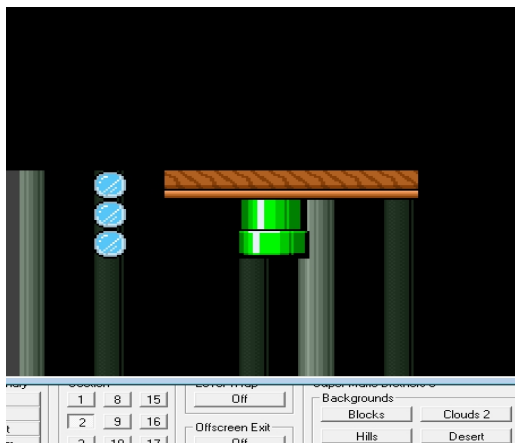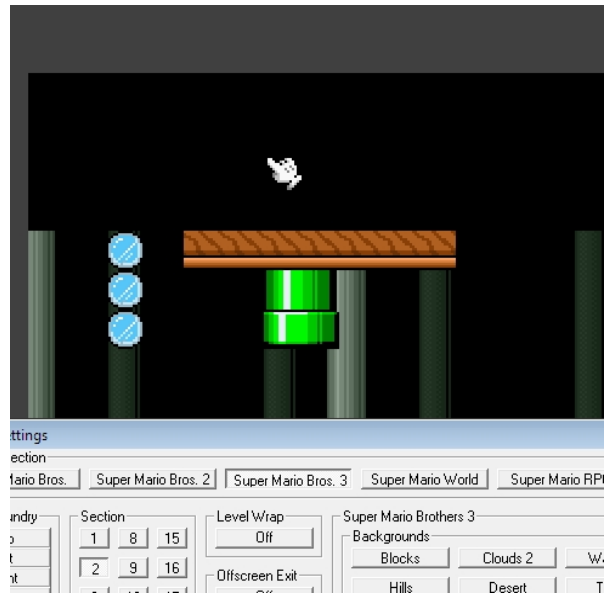
Default sections position

These are the default zones, used for the creation of a new section, if it is empty:

(Section Center)	Section (X and Y axis ranges)
-200000	01 (-190000 : -219999)
-180000	02 (-170000 : -189999)
-160000	03 (-150000 : -189999)
-140000	04 (-130000 : -149999)
-120000	05 (-110000 : -129999)
-100000	06 (-90000 : -109999)
-80000	07 (-70000 : -89999)
-60000	08 (-50000 : -69999)
-40000	09 (-30000 : -49999)
-20000	10 (-10000 : -29999)
0000	11 (9999 : -9999)
20000	12 (10000 : 29999)
40000	13 (30000 : 49999)
-60000	14 (50000 : 69999)
80000	15 (70000 : 89999)
100000	16 (90000 : 109999)
120000	17 (100000 : 129999)
140000	18 (130000 : 149999)
160000	19 (150000 : 169999)
180000	20 (170000 : 189999)
200000	21 (190000 : 209999)

- The standard size of one section zone is 29999×29999 pixels
- Y is always equal to X as Section center coordinates
- where x=0 and y=0 – is a center of 11'th section.

For converting from absolute coordinates to the relative of center by one section:

$$X_{n-section} = X_{absolute} - X_{Current\,section\,center}$$
$$Y_{n-section} = Y_{absolute} - Y_{Current\,section\,center}$$
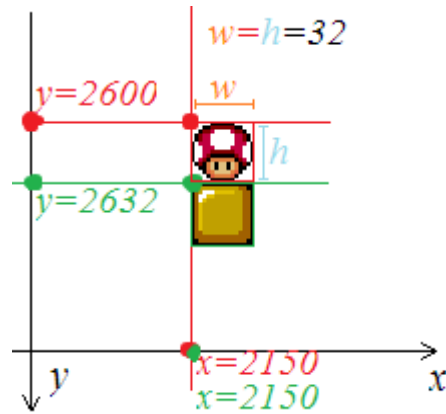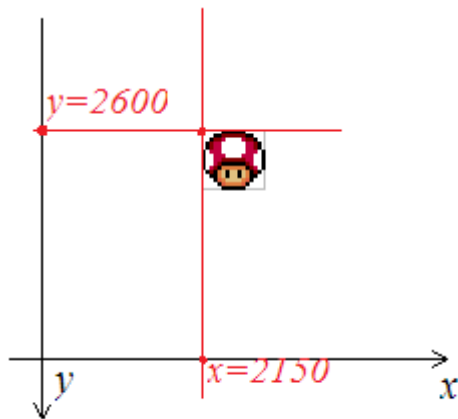
The coordinates of an object's placement is set concerning its upper left corner:
In this example, the mushroom's coordinates on the current section is: X=2150; Y=2600
and the block coordinates are: X=2150; Y=2632

Remember!
As the Y axis is turned to move an object down, it is necessary to add to the Y offset and to move up, it is necessary to subtract.