BAL

The Game for Smart People

by Fred Bolder

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Foreword

The first Bal game was programmed by Fred Bolder in Turbo Pascal. Later it was converted by Fred Bolder to C# and many levels and new objects were added. During a webdevelopment course, Fred Bolder made together with Michał Kotkowicz, Donnie Avant and Diana Sahlean the web site Games From Scratch including the game Bal. Bal was totally rewritten for JavaScript. The series 1 levels were copied from the C# bal game, but the series 2 levels and the series Small levels were made during the course. The C# bal game has more level series, but they were not copied. Later Fred Bolder decided to make a separate Bal web site based on the Bal code from Games From Scratch, but most of the code had to change a lot, because of the many new objects. There were also a lot of levels added to the existing series.
This documents gives perhaps more information than you want to know. Decide for yourself if you prefer to discover new objects while playing or if you want to be prepared.

Keep in mind that this manual is for the online Bal game.

Playing the game

In every level you control the blue ball with the happy face. You have to eat all the little green balls. You can push the white balls and the light blue balls, but not more than 2 at the same time. The light blue balls are floating balls and they will always stay at the same height. Red balls and red fish are very dangerous. If you push a yellow ball, it will continue as far as possible. You cannot push more yellow balls at the same time or push a yellow ball together with another ball. You can push a yellow ball in the directions left, right, up and down. A purple ball is almost the same as a yellow ball, but when you push a purple ball, it will go only one position further. You cannot push a ball through a one direction, a teleport, a game rotator or a door with a lock. You can control the blue ball with the letter keys, the arrow keys, the number keys or the arrow buttons. In the water you can swim in every direction.

If you see for example a level number 750, it doesn't mean that there are 750 or even more levels. The number depends also on the series and on the original Bal game.

When you solve a level, you will get a code that gives you access to the next level whenever you want by pressing the Code button, so it is important to write down the code. Some levels are very difficult. If you can't solve a certain level, you can start with another series or load a random level.

Actions

You can control the blue ball with the happy face by pressing keys. There are also arrow buttons available for tablets and phones, but playing the game is much easier with a PC.

Action	Letter key	Arrow key	Number key
Walk left / Swim left	A	Arrow left	4
Walk right / Swim right	D	Arrow right	6
Jump / Push up / Swim up	W	Arrow up	8
Jump left / Swim up left	Q	Shift + Arrow left	7
Jump right / Swim up righ	E	Shift + Arrow right	9
Push down / Swim down	S	Arrow down	2
Swim down left	Y	-	1
Swim down right	C	-	3

Overview of objects

Code 1 is used in the data files and is converted to Code 2 for further use. Code 1 has always a length of one character.
Normally the background color is black, unless otherwise defined in a level data file.
$bgcolor: 0, 0, 32, 10, lightblue
The parameters are x, y, width, height, color.
Also the foreground color can be defined in a level data file, but it has only effect on normal stones (also triangle shape). Stones can be used to represent ice, sand, leaves etc.
$fgcolor: 0, 0, 16, 20, blue
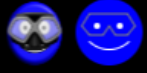
Image	Name	Code 1	Code 2	Description
	Blue bal	2	2	The blue ball is the player.
	Blue ball with sad face	2	2	When the blue ball is dying, it has a sad face.
	Blue ball wearing diving glasses	2	2	The blue ball can only swim when it is wearing diving glasses.
	Green ball	3	3	A green ball is food for the blue ball. The goal of the game is to eat all the green balls.
	White ball	4	4	White balls can be pushed, but not more than two at the same time.
	Light blue ball	5	5	Light blue balls float and do not fall. They can be pushed, but not more than two at the same time.
	Yellow ball	9	9	Yellow balls float and do not fall. They can be pushed, but only one at the time. When a yellow ball is pushed, it continues until it can not go further. The direction can be changed with a direction changer.
	Direction changer 1	C	84	Direction changer 1 changes the direction of yellow balls as follows: Right to Up Left to Down Up to Right Down to Left The blue ball can move a direction changer, but only one at the time.
	Direction changer 2	c	85	Direction changer 2 changes the direction of yellow balls as follows: Right to Down Left to Up Up to Left Down to Right The blue ball can move a direction changer, but only one at the time.

	Direction changer 3	+	86	Direction changer 3 changes the direction of yellow balls as follows: Right to Left Left to Right Up to Down Down to Up The blue ball can move a direction changer, but only one at the time.
	Red ball	8, s, S	8, 93, 94	Red balls are very dangerous. A red ball will shoot the blue ball with a laser if it is in the same vertical position and nothing blocks the view. If the blue ball is hit, it dies. With the help of mirrors, red balls can also see and shoot the blue ball in other positions. How smart a red ball is, depends on the code. Code 8 (8) is not smart. It will not move. Code s (93) is a little smart. It can move, jump and use elevators, but it will not try to find the blue ball. It will not move objects. Code S (94) is smart. It will try to find the blue ball. It will not move objects. Red balls can multiply themselves by using a copier.
	Mirror 1	α	95	Red balls can see more by using mirrors. When the red ball is at the left of mirror 1, it can also view up. When the red ball is at the right of mirror 1, it can also view down. Mirrors can also be combined.
	Mirror 2	β	96	Red balls can see more by using mirrors. When the red ball is at the left of mirror 2, it can also view down. When the red ball is at the right of mirror 2, it can also view up. Mirrors can also be combined.
	Light bulb	λ	105	If a red ball that is a little smart eats a light bulb, it becomes a smart red ball.
	Purple ball	p	28	Purple balls float and do not fall. They can be pushed, but only one at the time.
	Purple bar left	á	100	A horizontal purple bar consists of a left part, one or more middle parts and a right part. A vertical purple bar consists of a top part, one or more middle parts and a bottom part. Purple bars float and do not fall. They can be pushed by the blue ball, but not at the same time with other objects. It is not possible to push a purple bar left, right or up when there is weight on top, but pushing down is possible.
	Purple bar right	à	101	
	Purple bar middle	ä	102	
	Purple bar top	Á	103	
	Purple bar bottom	À	104	
	Gray ball	.	83	Gray balls float and do not fall. Normal gray balls can not be pushed.
	Gray ball one move	o	82	Gray balls one move float and do not fall. They can be pushed, but only onces. After

				pushing a gray ball one move, it will turn into a normal gray ball.
	Gray ball two moves	δ	98	Gray balls two moves float and do not fall. They can be pushed, but only twice. After pushing a gray ball two moves, it will turn into a gray ball one move.
	Empty space	(Space), 0	0	An empty space has not object inside.
	Stone	1	1	A stone blocks everything.
	Triangle stone bottom left	G	15	A triangle stone is often used to make the graphics look nicer. Bottom left means that the 90-degree corner is at the bottom left. This object can be used as a glide.
	Triangle stone bottom right	H	16	A triangle stone is often used to make the graphics look nicer. Bottom right means that the 90-degree corner is at the bottom right. This object can be used as a glide.
	Triangle stone top left	I	17	A triangle stone is often used to make the graphics look nicer. Top left means that the 90-degree corner is at the top left.
	Triangle stone top right	J	18	A triangle stone is often used to make the graphics look nicer. Top right means that the 90-degree corner is at the top right.
	Weak stone	y	35	Weak stones can be mined with a pickaxe.
	Pickaxe	Y	34	With a pickaxe you can mine weak stones.
	Small weak stone	π	99	If the blue ball has taken a small weak stone, there is a weak stone created at every previous position of the blue ball. This can be very handy, but the blue ball can also block itself.
	Lava	V	22	When the blue ball falls into the lava it dies. Lava can be used to get rid of balls.
	Water	w	23	When the blue ball is wearing diving glasses, it can swim in the water, but red fish are dangerous.
	Water surface	W	20	The water surface contains waves.
	Water surface right	ς	113	This is a triangle stone with water surface on the right side.
	Diving glasses	d	26	The blue ball needs diving glasses for swimming. Without diving glasses it will die.
	Red fish	f	27	Red fish are very dangerous for the blue ball. They are chasing the blue ball when it is in the water.
	Palm tree trunk part	P	21	A palm tree can be made with palm tree trunk parts and green triangle stones.
	Elevator	D, U	6, 106	Elevators can be used to move the blue ball, white balls and red balls up or down. The

					code D (6) means that the elevator goes first down after the level is loaded.
		Horizontal elevator	L, R	7, 107	Horizontal elevators can be used to move the blue ball, white balls and red balls to the left or to the right. The code L (7) means that the elevator goes first to the left after the level is loaded.
		Ladder	=	25	The blue ball can use a ladder to move up or down. A ladder doesn't block the view.
		Horizontal ladder	h	90	The blue ball can use a horizontal ladder to move to the left or to the right. A ladder doesn't block the view.
		Small ladder	Λ	108	If the blue ball has taken a small ladder, a ladder part will be created under the blue ball when the blue ball jumps straight up in an empty space. When a blue ball has taken also a small weak stone, it can not create ladders.
		Force up	Ω	109	A force object moves blue, white and red balls as far as possible in the indicated position. The blue ball can push a force object, but not against the force direction. Force down seems perhaps not useful, because of the gravity, but it works also in the water.
		Force down	ω	110	
		Force right	Φ	111	
		Force left	φ	112	
		Teleport	T	31	Only the blue ball can travel with a teleport.
		Self-destructing teleport	τ	92	Only the blue ball can travel with a self-destructing teleport. The teleport self-destructs after use.
		Locked door	l	30	Only a blue ball that has a key can open a locked door. The blue ball can not push balls or other objects throught the door.
		Key	k	29	The blue ball can open locked doors with a key.
		One direction right port	>	10	Only a blue ball can go through a one direction port and only in the indicated direction.
		One direction left port	<	11	Only a blue ball can go through a one direction port and only in the indicated direction.
		One direction up port	^	87	Only a blue ball can go through a one direction port and only in the indicated direction.
		One direction down port	v	88	Only a blue ball can go through a one direction port and only in the indicated direction.
		Bomb	B	36	When a bomb explodes, it destroys the stone in which it is. Use a detonator to detonate all bombs at the same time.
		Detonator	b	37	Use a detonator to detonate all bombs at the same time by jumping on it or by dropping a

					ball on it.
		Explosion	*	38	This image is used as an animation for an exploding bomb.
		Trap door	-	13	The blue ball can walk over a trap door, but when it stays too long on top, it will open. White balls and red balls can also fall through a trap door.
		Trap door half open		14	This image is used as an animation for an opening trap door.
		Electricity	!	91	When a blue ball walks under this object, there is a chance that it will be electrocuted.
		Copier	Δ	97	A copier copies a white or red ball that is on top of it, if there is place for the copies that come out from the sides.
		Game rotator	t	89	When the blue ball walks through a game rotator, the whole game rotates 90 degrees clockwise. A game rotator can only be used for levels in which the number of columns is the same as the number of rows.
		Panagiotis	@	24	The greek letter Π (pi) indicates that the level is made by Παναγιώτης (Panagiotis).