

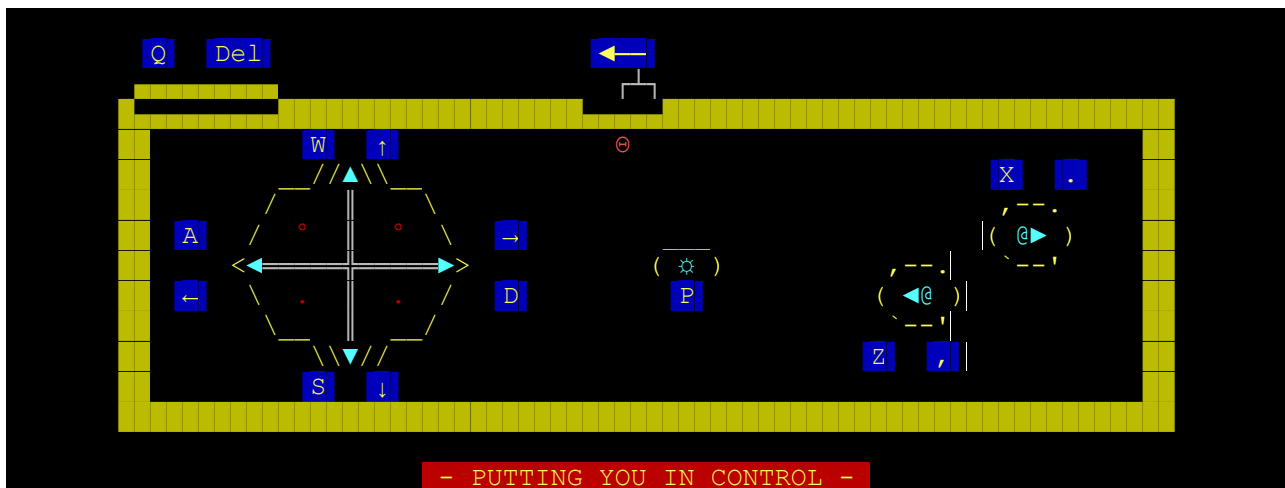
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There are two keys for each in-game control, and one each for play/pause and power-off [backspace] ...ALL gameplay is affected with these keys.

```
root@t1000:~ bashtris.sh -h_
BASHtris v1.0
-h --help      : this info
-H --man       : full documentation
-v --version   : show version number

-k1 --kbdv1    : force v1 keyboard driver (supports WSL)
-k2 --kbdv2    : force v2 keyboard driver (improved driver)
  --id         : generate id.out for this linux install [debug/porting]

-r --records   : show hi score records
-x --rexporthi : eXport hi score records [filename] <-- optional
-i --rimporthe : Import hi score records <filename> <-- required
-m --rmmergehi : merGe hi score records <filename> <-- required
+N            : seed(N) - repeat a specific game
```

Required terminal settings:

Terminal size: {80 x 25} (24 + 1 status line)

Play with PuTTY over SSH:

Font : **Courier New**

PuTTY -> Settings -> Window -> Appearance -> Font -> Change = Courier New

Character Set: **UTF-8**

PuTTY -> Settings -> Window -> Translation -> Remote Charset = UTF-8

Kali terminal window looks good with: [File->Preferences]

Font : **Bitstream Vera Sans Mono**

Colour Scheme: Linux

Windows Subsystem Linux (WSL)

















Font : Courier New

Make sure your terminal is set correctly.

BAShTris can/will check the window size, but has no way to tell what font [typeface] you are using, or how the ANSI colours are configured in your terminal window/emulator.

The game makes use of the Codepage 437 [Cp437] character set (mostly for nostalgic DOS reasons but also) because that character set has a good (but limited/creativity-inspiring) set of graphical characters. and is present in all good monospaced fonts such as Courier New and Bitstream Vera Sans Mono.

The colour palette in these 'screenshots' is the "DOS" or (subset of the) "Linux" palette, but feel free to choose any colours/shades that find pleasing!

	40		41		42		43		44		45		46		47
Paper:		...		...		...		...		...		...		...	
Ink :		...		...		...		...		...		...		...	
	30	2;30	31	2;31	32	2;32	33	2;33	34	2;34	35	2;35	36	2;36	37
	Blk		Red		Grn		Yel		Blu		Mag		Cyn		Wht

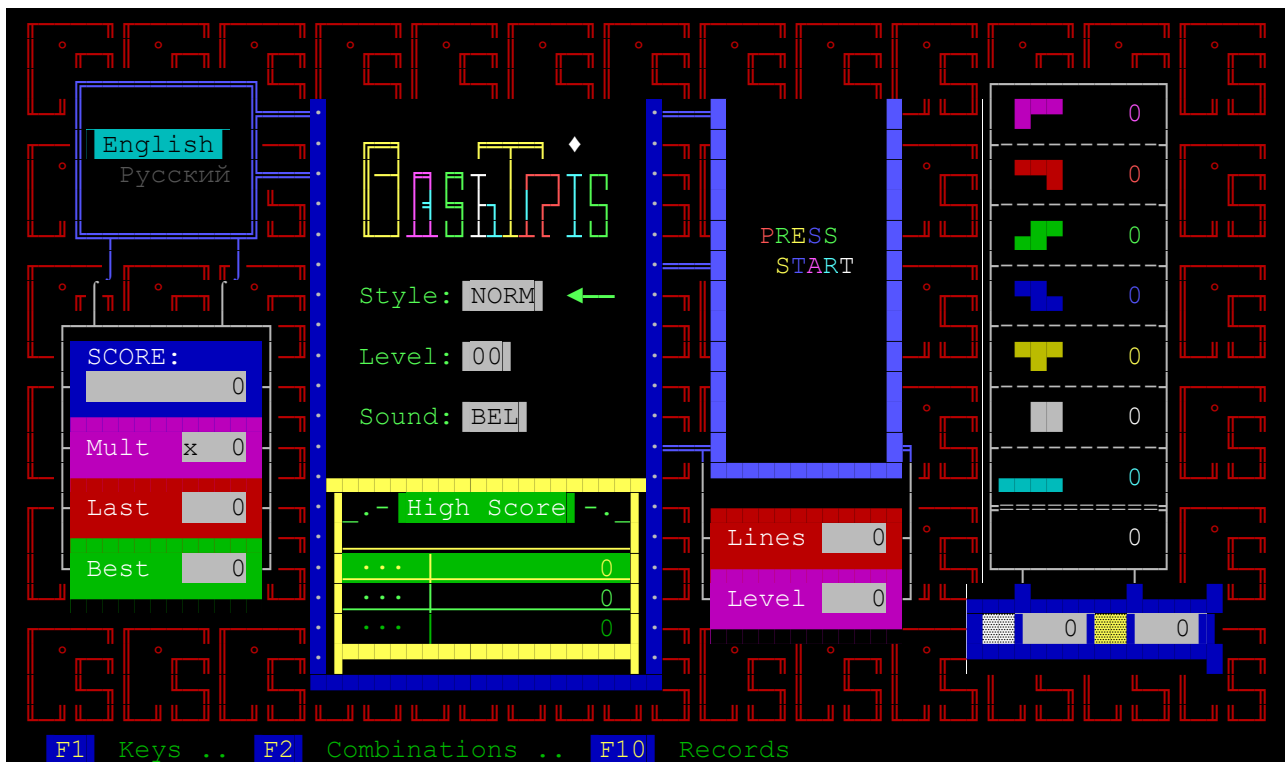
Codepage-437

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	¸
Ä	ä	Å	å	á	â	à		Æ	æ		Ç	ç		É	é	ê	è	ë		ï	í	î	ì		Ñ	ñ
Ö	ö	ó	ô	ò		Û	ü	ú	û	ù		ÿ														
α	β	Γ	ε	δ	∩	Θ	μ	≡	π	Σ	σ	τ	Φ	φ	Ω											
^	`	"	'	,	.	;	:	!	;	!!	¿	?		\$	£	¢	£	¥	₹	f		¶	§			
0	1	2	3	4	5	6	7	8	9	0	½	¼	∞	/		_	:	\	#	ª	º	°				
+	-	±	*	.	/	÷	%	√	²	³	≥	≤	≈	=	{	}	[]	()	<	>	~	@	&	
«	◀	▼	▲	▶	»	←	↓	↑	→	↔	↕	↖	↗	♣	♦	♥	♠		☺	☹	♂	♀	♪	♫		
<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	<div><div></div><div></div><div></div></div>	

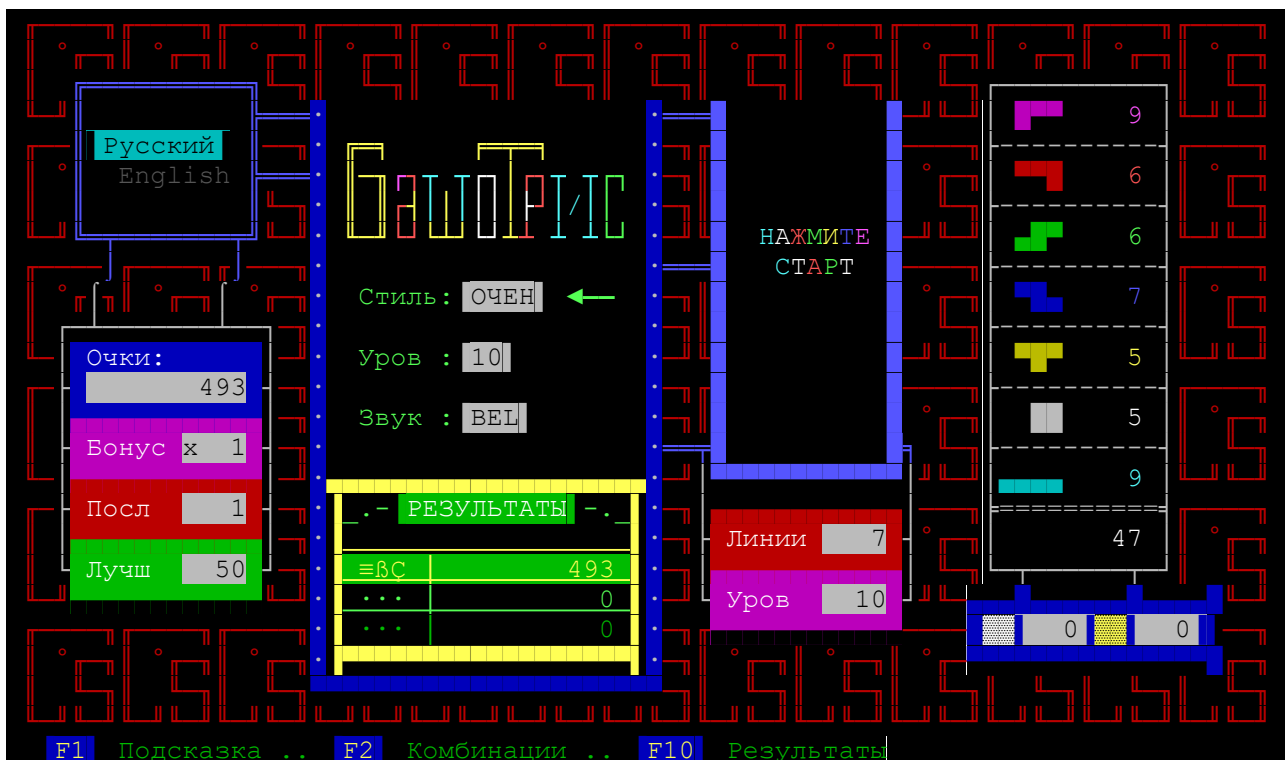
Obviously, if you want Russian language support, you will need the Russian alphabet as well:

А Б В Г Д Е Ё Ж З И Й К Л М Н О
П Р С Т У Ф Х Ц Ч Ш Щ Ъ Ы Ь Э Ю Я

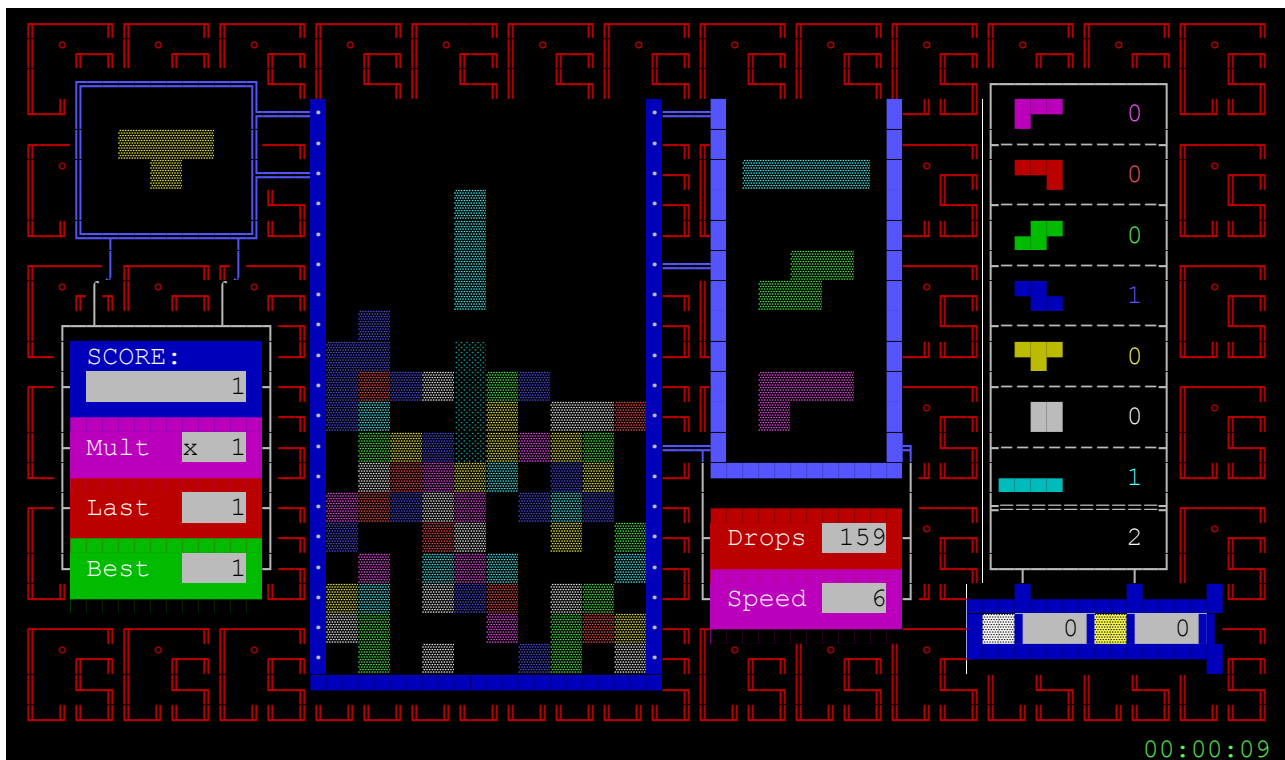
Why Russian? Well, a) it's a Russian game and b) sbot loved the game and offered to translate it for me!



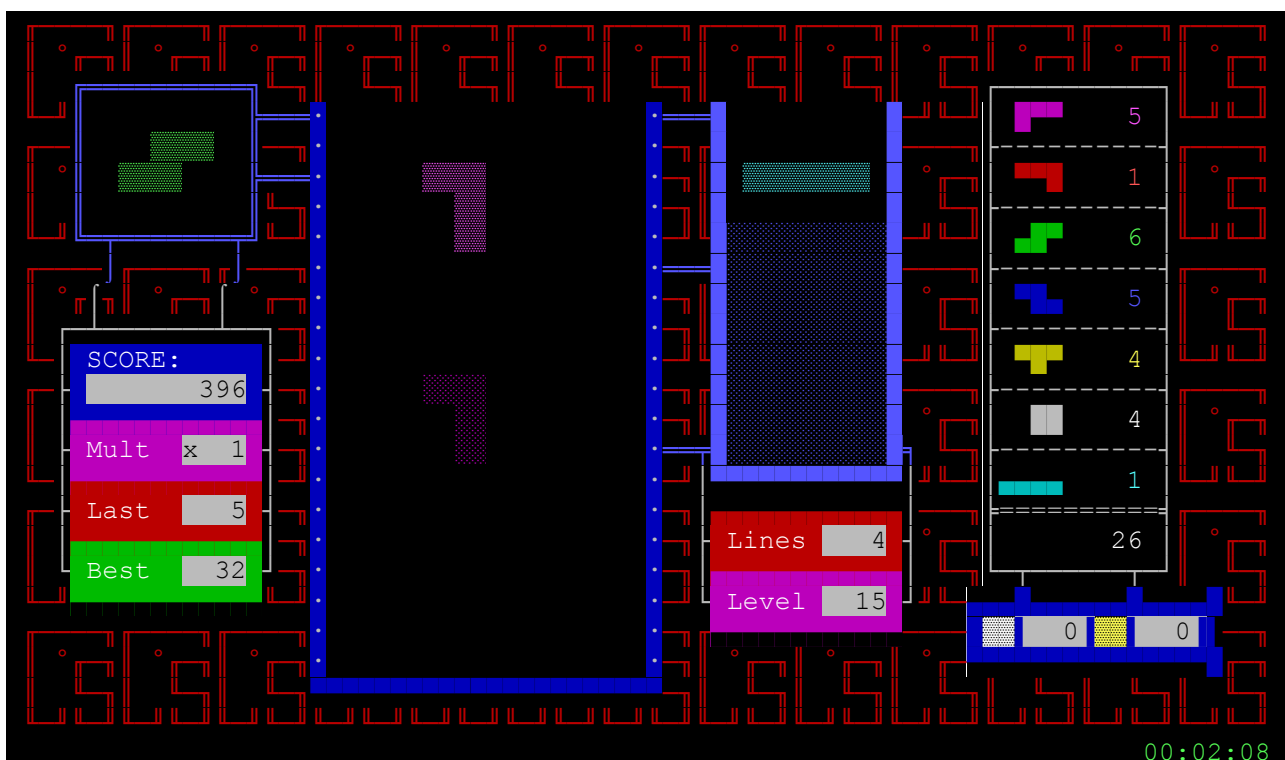
To swap languages, use the shoulder/trigger button.



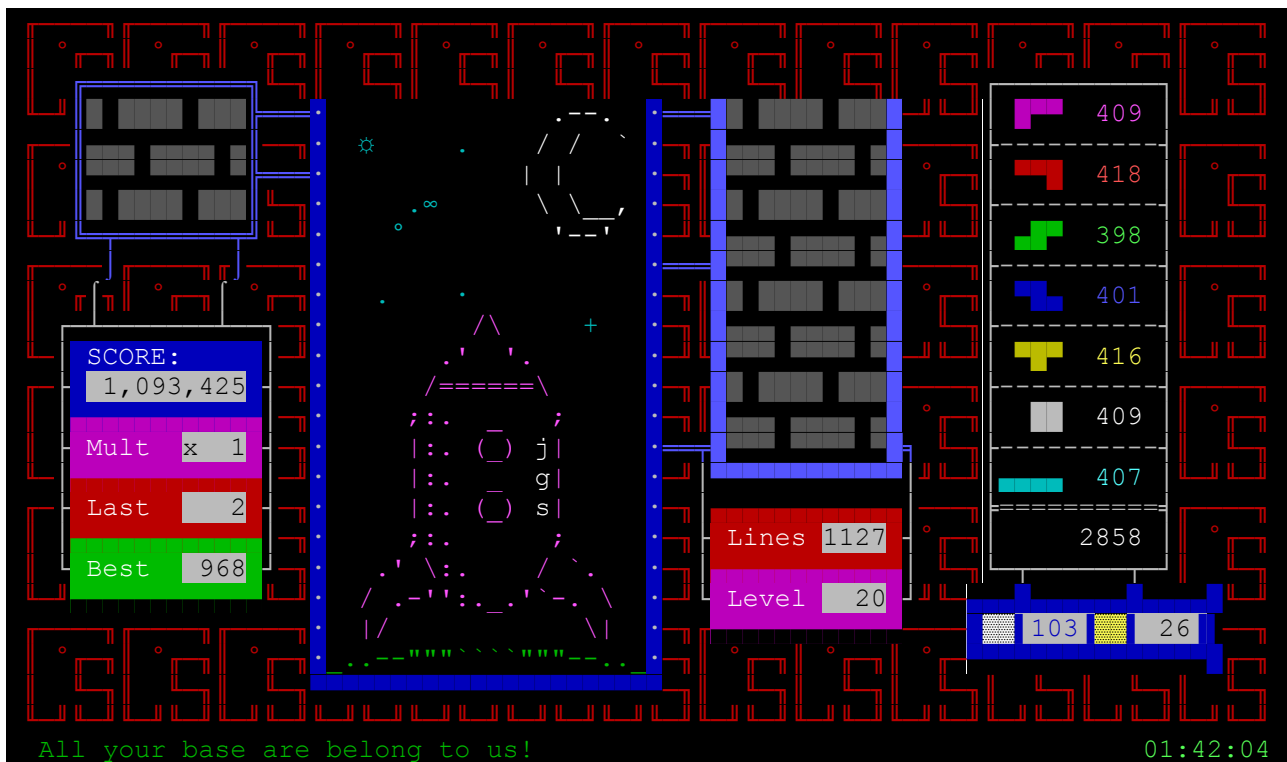
- F1 will show the controller help screen.
- F2 will show every valide ComboBlock combination
- F10 will bring up the High Score Statistics review system
- Up/Down to select an option
- Left/Right to change an option



This is an a mid-game screenshot from the Challenge Mode.
You can swap the current piece for the "Shoulder" piece once per drop.



This is a screenshot from Invisible mode. The Shadow of the current piece can help you map the terrain.
On higher levels, the number of pieces visible in the Basket is limited.

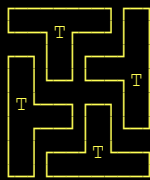
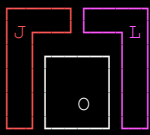
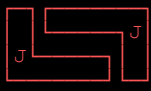
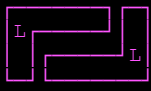
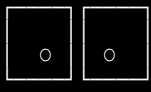


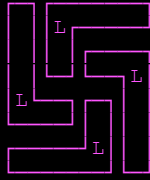
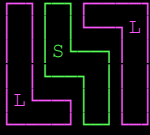
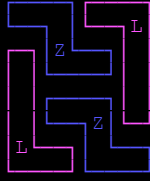
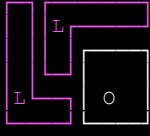
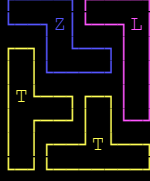
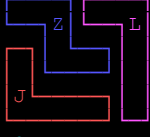
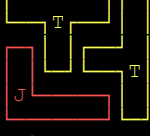


If you are particularly good, you might get to see a rocket launch!



And, of course, the obligatory 3-Initials High Score table.

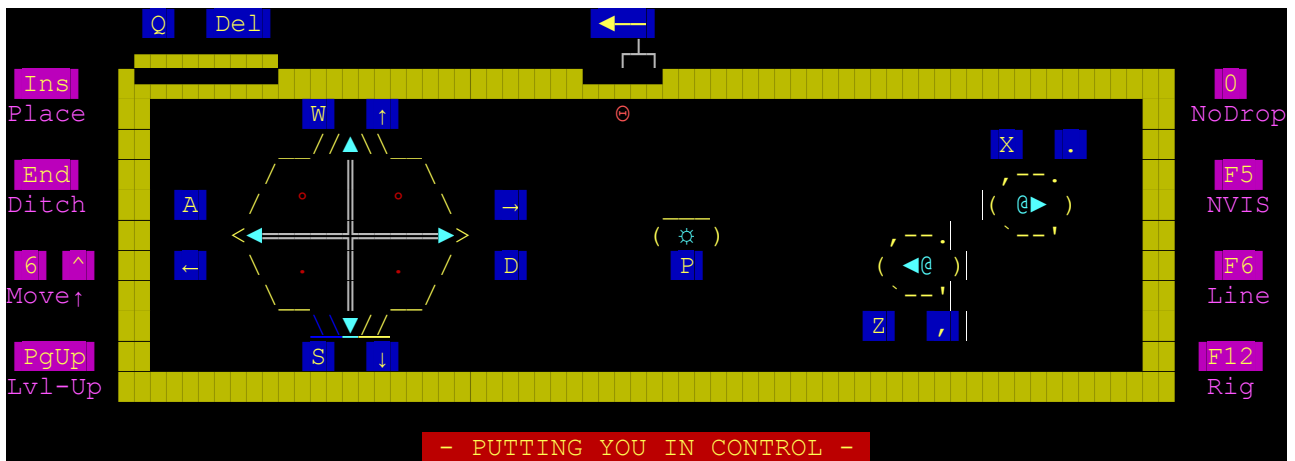
Combinations

[4 x 4]	[4 x 3]	[4 x 2]	MIRROR TETS	
<div></div> <div>*2 MIRROR =2 \$\$</div>	<div></div> <div>+2 I-TET @4 ROTATION =8 %%%%</div>	<div></div> <div></div> <div></div> <div>I-pair</div> <div></div> <div>I-split</div> <div></div> <div>I-split</div>	L <-> J S <-> Z	
<div></div> <div>*2 MIRROR =2 \$\$</div>	<div></div> <div>+2 I-TET *2 MIRROR @2 ROTATION =8 %%%%</div>			
<div></div> <div>*2 MIRROR @2 ROTATION =4 %%%%</div>	<div></div> <div>+2 I-TET *2 MIRROR @4 ROTATION =16 %%%%</div>	J+J @2 =2 \$\$ J+L @4 =4 %%% J+O @4 =4 %%% J+Ip @4 =4 %%% J+Is @2 =2 %		
<div></div> <div>*2 MIRROR @4 ROTATION =8 %%%%</div>	<div></div> <div>+2 I-TET *2 MIRROR @4 ROTATION =16 %%%%</div>	L+L @2 =2 \$\$ L+O @4 =4 %%% L+Ip @4 =4 %%% L+Is @2 =2 %		
	<div></div> <div>+2 I-TET *2 MIRROR @4 ROTATION =16 %%%%</div>	O+O @1 =1 \$ O+Ip @4 =4 %%% O+Is @2 =2 %		
		I+I @2 =2 \$\$		
SILV: 4/12 GOLD: 4/ 4	SILV: 18/64 GOLD: 0/ 0	SILV: 9/30 GOLD: 4/ 7	Unique	Rotate
8/16	18/64	13/37	31	106
			8	11
			39	117

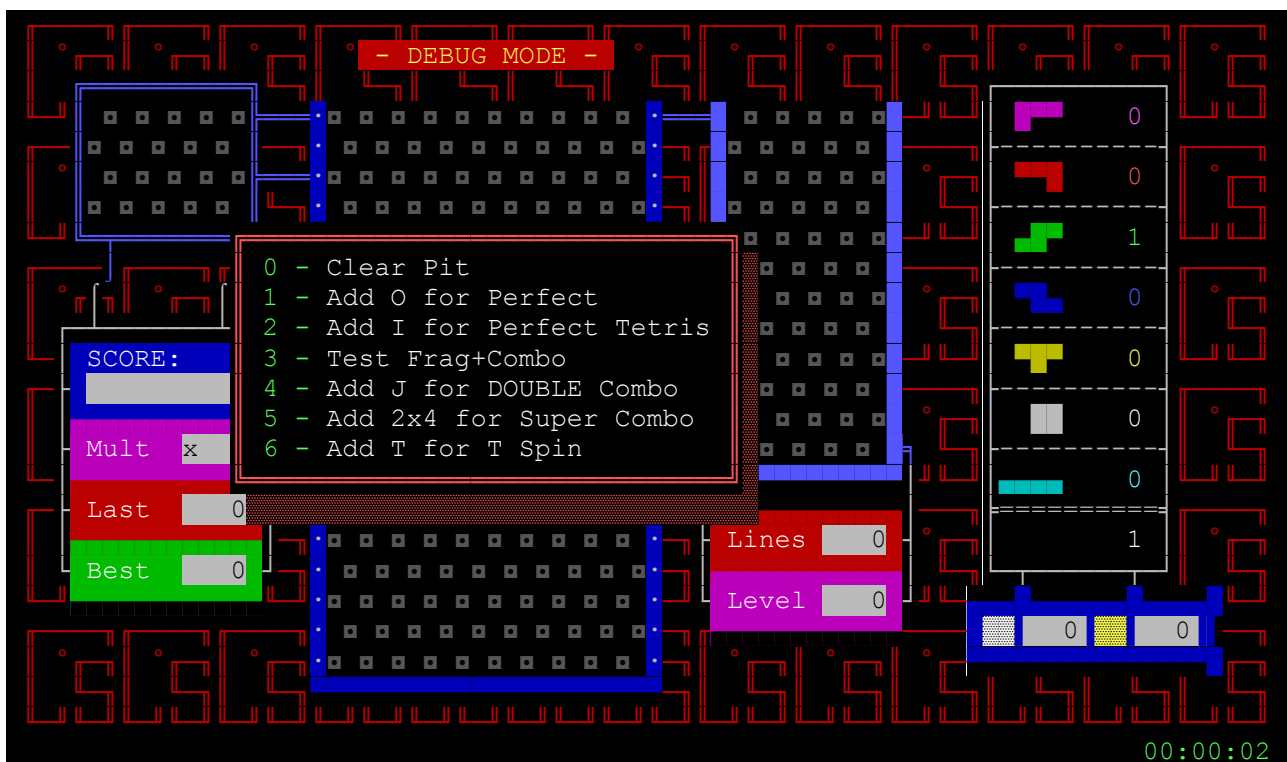
The grey \$ and % symbols are there for an Achievements system I ultimately didn't implement.

Ranking Initials Score	1st ≡βÇ 2,106	2nd ... 0	3rd ... 0
Lines	[55]	[0]	[0]
Best Mult.	[x 4]	[x 0]	[x 0]
Best Piece	[60]	[0]	[0]
Play Time	00:06:41	00:00:00	00:00:00
Silver	[0]	[0]	[0]
Gold	[0]	[0]	[0]
L-tets	21	0	0
J-tets	21	0	0
S-tets	22	0	0
Z-tets	20	0	0
T-tets	23	0	0
O-tets	21	0	0
I-tets	15	0	0
Total Tets	143	0	0
PRNG Seed	27350	0	0

Of all the things I was pleased with, the 7-segment display probably still wins ...And all this code is adaptive, so if I add a new game mode (eg. Network Play) the act of adding a high score list for the new mode will cause it to magically appear here :)



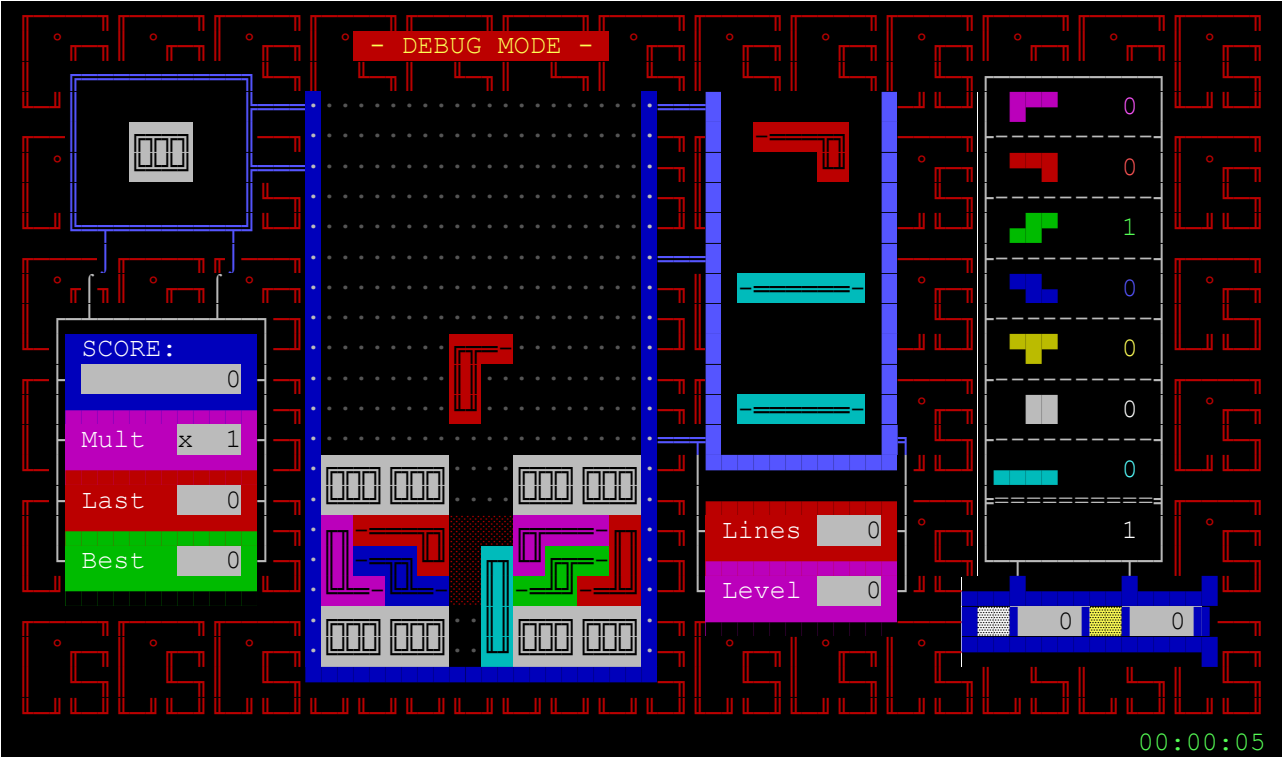
Lest we forget debug mode which adds all the features you could ever need as a developer ...or a cheat :)



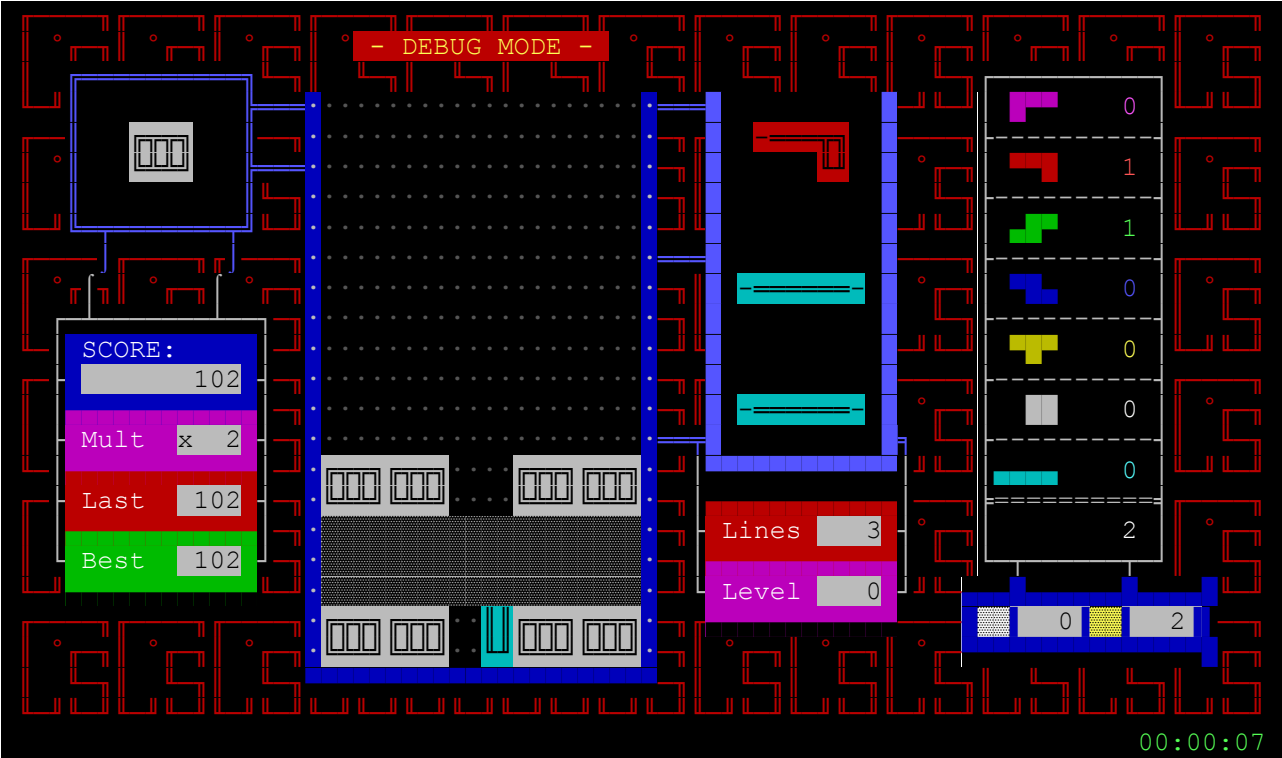
Adding a new array to the "rigging" script will put it in this dynamic menu hidden behind F12 ...it was written for debugging the more advanced mechanics ...but the examples here make for a good tutorial!

New rigs can be created in debug mode and cut'n'pasted from the debug monitor.

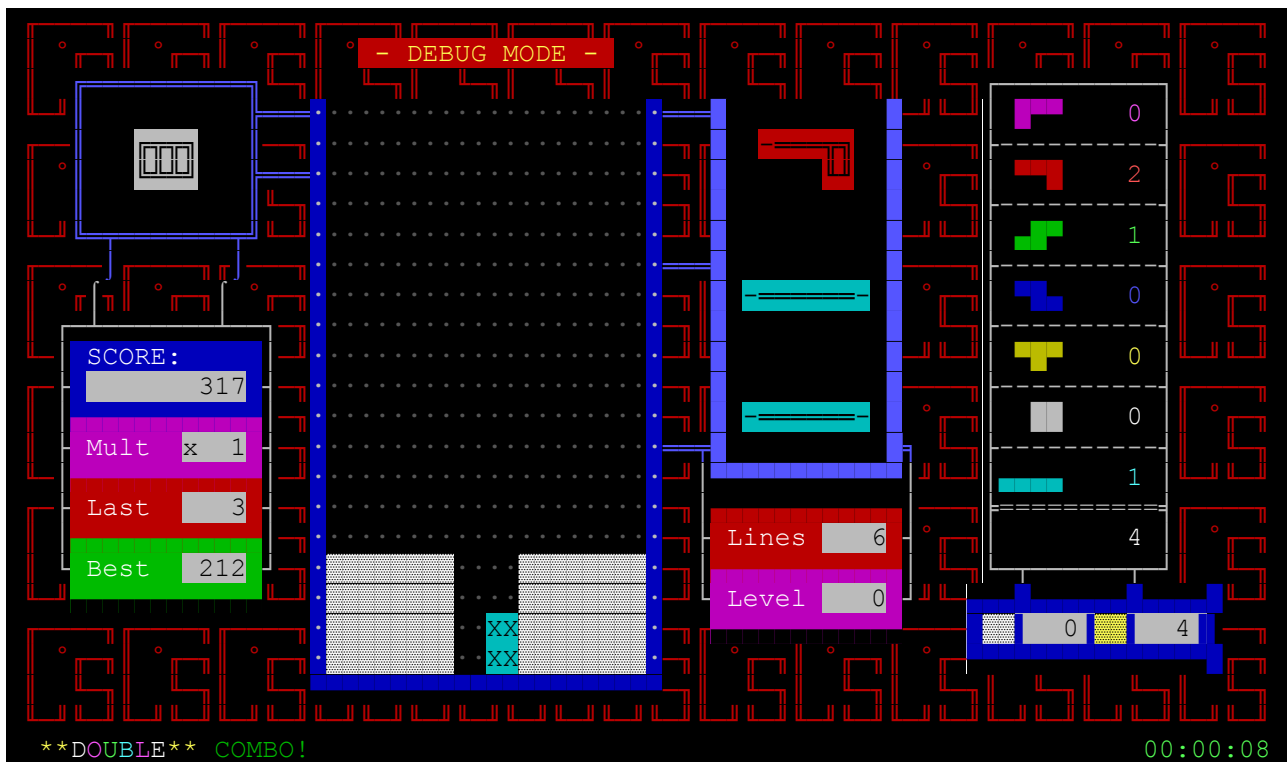
Now we are in debug mode, we can see the internal geometry of the pieces.



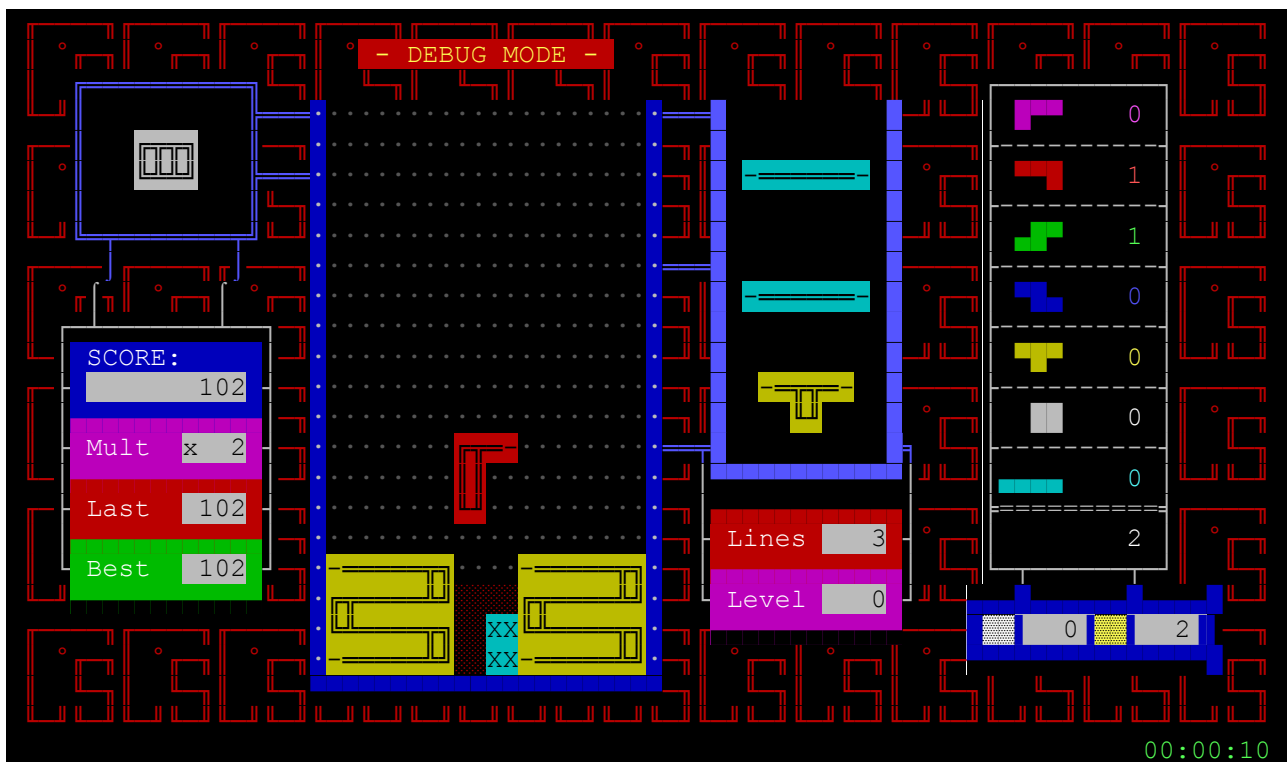
Having chosen Rig-4, we are about to create TWO Gold Combos in a single drop.



Completed lines are removed.



Double Combo event is triggered.



The cubes turn Gold, ready to deal out lots of points when they are destroyed.


```

,-----,
==(  Index  )=====
\-----/

# BASHTris
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# COMMAND LINE OPTIONS
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#   Debug
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#   Play with PuTTY over SSH
#   Kali terminal window
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#   Normal (aka Marathon or A-Type)
#   Invisible [Marathon]
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#   Controller Screen
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,-----,
==(  BASHTris  )=====
\-----/

```

Autumn 2020. Boredom has set in. Never written a Tetris clone before. BASH skillz could do with a work-out. Enjoy!

```
== ( ,-----.
      LICENCE )=====
      `-----'
```

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```
== ( ,-----.
      BIBLIOGRAPHY )=====
      `-----'
```

This probably isn't complete, but it's a list of handy references:

- * https://en.wikipedia.org/wiki/Code_page_437
- * <http://ascii-table.com/ansi-escape-sequences.php>
- * <https://www.linuxquestions.org/questions/programming-9/bash-case-with-arrow-keys-and-del-backspace-etc-523441/>
- * <http://asciqr.com/>
- * <https://www.utf8-chartable.de/unicode-utf8-table.pl?start=00&utf8=oct>
- * <https://www.artificialworlds.net/blog/2012/10/17/bash-associative-array-examples/>
- * https://docs.google.com/spreadsheets/d/17f0dQawb-s_Fd7DHgmVvJoEGDMH_yoSd8EYigrb0zmM/edit#gid=296134756

```
== ( ,-----.
      ROADMAP )=====
      `-----'
```

Wall kick (option)

Network play

OSX support (BASH v3 - no sub-second timer!)

```
==('-----'.
  COMMAND LINE OPTIONS )=====
  '-----'
```

Standard Options

=====

```
-h --help      : this info
-H --man       : full documentation
-v --version   : show version number

-k1 --kbdv1    : force v1 keyboard driver (supports WSL)
-k2 --kbdv2    : force v2 keyboard driver (improved driver)
  --id         : generate id.out for this linux install [debug/porting]

-r --records   : show hi score records
-x --rexpport  : eXport hi score records [filename] <-- optional
-i --rimport   : Import hi score records <filename> <-- required
-m --rmerge    : merGe hi score records <filename> <-- required
+N            : seed(N) - repeat a specific game
```

Debug Options

=====

```
-d --debug     : debug mode (extra keys - see controller help screen)
-s --skip      : skip intro sequence
-f --fast      : fast startup
-c --ctrlc     : Enable [do not disable] ^C
-n --monitor   : monitor debug messages
-b --break     : break code in to components - use MAKE.sh to rebuild
-B --brkovr    : break code in to components - overwrite existing files
```

```
==('-----'.
  CONSOLE SETTINGS )=====
  '-----'
```

Required terminal settings

=====

```
# Terminal size: {80 x 25} (24 + 1 status line)
```

Choice of Font & Colour Scheme are outside my control, and can be the difference between "nice job" and "pass the bucket".

If the graphics are misaligned, try a slightly bigger or smaller font size.

Make sure you have UTF8 support enabled!

Play with PuTTY over SSH

=====

```
# Font          : Courier New
PuTTY -> Settings -> Window -> Appearance -> Font -> Change = Courier New

# Character Set: UTF-8
PuTTY -> Settings -> Window -> Translation -> Remote Charset = UTF-8
```

Kali terminal window looks good with

=====

```
[File->Preferences]
# Font          : Bitstream Vera Sans Mono
# Colour Scheme: Linux
```

Windows Subsystem Linux (WSL)

=====

```
# Font          : Courier New
# Command line  : $0 -k1          <-- this should auto-detect now!
```

```

== (  GAME MODES  ) =====

```

Drop Rate
=====

In all modes, the drop rate is:

Drop Rate = (1000 - (Level *46)) milliseconds

Level	Rate	drops/sec	
=====	=====	=====	
0	1000	1	Yawn
..
5	770	1.3	Playable
..
10	540	1.85	Game on
11	496	2	..
..
15	310	3.2	Stay focussed
..
20	80	12.5	Faster than I can play!

By comparison, these are the speeds for the Gameboy:

[https://harddrop.com/wiki/Tetris_\(Game_Boy\)](https://harddrop.com/wiki/Tetris_(Game_Boy))

Level	BAShTris Rate	drops/S	Gameboy Rate	drops/S
=====	=====	=====	=====	=====
0	1000	1.00	887	1.13
1	954	1.05	820	1.22
2	908	1.10	753	1.33
3	862	1.16	686	1.46
4	816	1.23	619	1.62
5	770	1.30	552	1.81
6	724	1.38	469	2.13
7	678	1.47	368	2.72
8	632	1.58	285	3.51
9	586	1.71	184	5.43
10	540	1.85	167	5.99
11	494	2.02	151	6.62
12	448	2.23	134	7.46
13	402	2.49	117	8.55
14	356	2.81	100	10.00
15	310	3.23	100	10.00
16	264	3.79	84	11.90
17	218	4.59	84	11.90
18	172	5.81	67	14.93
19	126	7.94	67	14.93
20	80	12.50	50	20.00


```
==('-----'.
  STUFF TO TRY )=====
```

CS Logo

=====

Animations that run in threads, so can be concurrent

Start Screen

=====

F1 - Review controller keys
F2 - Show combo block table
F4 - System details (multiple 'pages')
F10 - Review high-score statistics

Select "Sound" and press Rotate-Left: Audio test

Select Russian [qv lang.s]

During Gameplay

=====

If the screen becomes corrupt:
1. Press "`" / "backtick" / "grave accent" to redraw the screen
2. If it's a bug - report it!

Play on level 0, 1, or 2 to see the piece 'introduction' animation

F1 or F2 for the help screens

P to Pause the game

...with random animations & 'easter egg' messages
Random graphical events do NOT effect the piece distribution!

Complete a challenge for an animation run

Clear the pit for a "PERFECT" bonus and +100 points

Work out a strategy for maximising the score multiplier

Try and create all 11 GOLD and 106 SILVER combinations
...I hope to add "Achievements" to a future version

End of Game

=====

Watch out for easter-egg messages

Get your name/initials on the High Score Table

Use <shoulder> to change the input language

In any game mode, on any Level 10-or-above:

Play three games and enter your initials for all three wins
On the fourth play, get position #1 on the table
...for a surprise

Repeating a Game

=====

Use `bashtris +N` to force the seed to N, where $0 \leq N \leq 65535$
...This will be the same for every game until BASHTris is restarted

This allows you to challenge a friend on a specific game :)

...Work out how to get the same pieces on a different level!

```
== ( -----  
    HIGH SCORES ) =====  
    -----
```

Review

=====

You can view the in-game high score records table
by pressing F10 on the in-game menu page. Or...

Review any set of high score records with:

```
`bashtris -r [filename]`
```

...A filename of a [friend's] exported table MAY be specified

...If NO filename is given, the internal records will be shown

** The following features do NOT work in 'developer' mode **

In 'developer' mode, the high score table is: hiscore.dat

and it does NOT contain the markers required for sharing

Export

=====

Export your high scores with:

```
`bashtris -x [filename]`
```

...will use stdout if no filename is supplied

Save your scores before upgrading

Or send them to a friend for challenges

Import

=====

Import a complete set of high scores with:

```
`bashtris -i <filename>`
```

You can run `bashtris -r` to confirm the records have imported

Merge

=====

Merge a [friend's] high score table in to your game with:

```
`bashtris -m <filename>`
```

...Basic statistics will be given about what was imported

You can run `bashtris -r` to view the newly merged records

Upgrade

=====

If you upgrade to a new version of BASHTris, you will (probably) want
to keep your high score records.

I was going to automate this, but "automatically download and install
unsigned scripts off github" just seems like an unreasonable security risk.
...Maybe I will consider signed updates at some point in the future :/

1. Run `bashtris -x records.dat` to save your records as 'records.dat'
2. Download the new version
`wget https://raw.githubusercontent.com/csBlueChip/BASHTris/main/bashtris.sh`
3. Move the current 'bashtris.sh' to your trashcan
4. Replace it with the new 'bashtris.sh' file you just downloaded
5. Run `bashtris -i records.dat` to re-import your exported records

```
==('-----'.
  DEBUG MODE )=====
  '-----'
```

Command line options

=====

- d to enable debug mode
- s to skip the intros
- f to skip the board draw
- c allow ^C to exit the program

Debug Console

=====

Open another session and run ``bashtris -n`` for a debug monitor console

The main code can use DBG and DBGF to send debug console messages.

Extra keys during play

=====

0 : Disable auto-drop - aka Realtime Pause
Pressing UP in this mode will cause a piece to lock immediately

F5 : Toggle invisible mode on/off
Useful for debugging invivisble mode!

F6 : Draw tetrominoes normally
Debug mode usually show the piece geometry during play
Enabling "NormalDRAW" has an easter-egg side-effect!

F12 : Rig the game
A number of test pits exist for exercising certain features
To create another: See the instructions in rig.dat

PgUp : Level up
Add enough lines to push you up 1 level

6 ^ : Move up!
Piece dropped too far? ...Move it back up the screen!

Ins : Place piece
Lock the active tetromino in to place where it is now

End : Ditch piece
Discard the active tetromino
...and get the next one out of the basket, as normal

```
==('-----'.
  DEVELOPER MODE )=====
  '-----'
```

Run ``bashtris -b`` to break the code in to manageable components
...including a notepad++ workspace
You can use ``bashtris -B`` [capital B] to force file-overwrite

Run ``MAKE.sh`` to re-"compile" it in to a single file

Once "broken" the game may be run with ``tris.sh``

Run ``bashtris --id`` to create an ``id.out`` file to identify this distro
When broken out, ``ID.sh`` is the standalone version of ``bashtris --id``

Some of this information can be seen by pressing F4 on the start menu
The various outputs will rotate with each press of F4

== [EOF] ==