

Skills and Obstacles Analysis

Frogger

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Overview

Frogger is an arcade game originally released in 1981. The main goal is to navigate through the obstacles of each level to bring your frog to its home on the other side of the map. To complete each level, all five spaces need to be filled by frogs. How well the player is able to complete this task is reflected in the player's total score.

Obstacle Chart

The first table lists all of the obstacles found in Frogger and are comprised of navigation-based obstacles which require the player to traverse, and avoidance-based obstacles which require the player to avoid colliding with.

Challenge Level Easy	Challenge Type	Speed	Direction	Description
Sidewalk	Navigation	N/A	N/A	Purple space that is one unit thick where there are no dangers or obstacles.
Road	Navigation	N/A	N/A	Black space that poses no danger itself but has dangerous obstacles passing over it.
Time Bar	Speed, Score	N/A	N/A	Bar illustrating the remaining time the player has to get the current frog home.
Challenge Level Medium	Challenge Type	Speed	Direction	Description
Water	Avoidance	N/A	N/A	Blue space that will kill the player if the player lands on it.
Slow Car	Avoidance	Slow	Left, Right	Slow moving car that kills the player if the car collides with the player.
3 Turtles	Navigation	Medium	Left	Medium moving platform that the player can safely walk on.
2 Turtles	Navigation	Medium	Left	Small moving platform that the player can safely walk on.
Slow Short Logs	Navigation	Slow	Right	Slow moving short platform that the player can safely walk on.
Medium Medium Logs	Navigation	Medium	Right	Medium moving medium sized platform that the player can safely walk on.
Grass	Avoidance	N/A	N/A	Green space that will kill the player if they collide with it.
Central Safe Space	Goal	N/A	N/A	3 blue spaces in between grass spaces in the middle of the screen where the player must land to complete the level.
Log Crocodiles	Navigation	Medium	Right	Crocodiles that take the place of logs that the player can walk on.
Safe Space Crocodiles	Avoidance	N/A	N/A	Crocodiles that appear in the safe spaces meaning the player cannot land at that space until the crocodile is gone.
Medium Long Logs	Navigation	Medium	Right	Medium moving long platform that the player can safely walk on.
Water Snake	Avoidance	Fast	Left, Right	Snake moving fast along the water that kills the player upon collision.
Challenge Level Hard	Challenge Type	Speed	Direction	Description

Fast Car	Avoidance	Fast	Right	Fast moving car that kills the player if the car collides with the player.
3 Sinking Turtles	Navigation	Medium	Left	Medium moving platform that sinks into the water on occasion. The platform is only safe for the player when it is above the water.
2 Sinking Turtles	Navigation	Medium	Left	Medium moving platform that sinks into the water on occasion. The platform is only safe for the player when it is above the water.
Fast Long Logs	Navigation	Fast	Right	Fast moving long platform that the player can safely walk on.
Edge Safe Space	Goal	N/A	N/A	2 blue spaces on the outer edges of the screen where the player must land to complete the level.
Fast Turtles	Navigation	Fast	Left	Fast moving turtles that the player can safely walk on.
Sidewalk Snake	Avoidance	Medium	Left, Right	Snake moving along the middle sidewalk that kills the player upon collision.
Log Snake	Avoidance	Slow	Left, Right	Snake moving along a log that kills the player upon collision.
High Score	Score	N/A	N/A	Complete the levels quickly and gain bonus points to achieve the high score.

Table 1: List of Obstacles found in Frogger

Obstacle Distribution Chart

The second table illustrates how the obstacles listed in the first Table are distributed throughout the game. The first 10 levels represent unique obstacles patterns and once these first levels are completed, these patterns repeat infinitely until the player runs out of lives.

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Sidewalk	X	X	X	X	X	X	X	X	X	X
Road	X	X	X	X	X	X	X	X	X	X
Time Bar	X	X	X	X	X	X	X	X	X	X
Water	X	X	X	X	X	X	X	X	X	X
Slow Car	X	X	X	X	X	X	X	X	X	X
3 Turtles	X									
2 Turtles	X	X	X	X	X	X	X	X	X	X
Slow Short Logs	X	X	X	X	X	X	X	X	X	X
Medium Medium Logs	X	X	X	X		X	X	X	X	
Grass	X	X	X	X	X	X	X	X	X	X
Central Safe Space	X	X	X	X	X	X	X	X	X	X
Log Crocodiles		X	X	X	X	X	X	X	X	X
Safe Space Crocodiles		X	X	X		X	X	X	X	
Medium Long Logs			X	X	X	X	X	X	X	X
Water Snake			X	X	X	X	X	X	X	X
Fast Car		X	X	X	X	X	X	X	X	X
3 Sinking Turtles	X	X	X	X	X	X	X	X	X	X
2 Sinking Turtles	X	X	X	X	X	X	X	X	X	X
Fast Long Logs	X	X								
Edge Safe Space	X	X	X	X	X	X	X	X	X	X
3 Fast Turtles		X	X	X	X	X	X	X	X	X
Sidewalk Snake			X	X	X	X	X	X	X	X
Log Snake			X	X	X	X	X	X	X	X

Table 2: Distribution of Obstacles found in Frogger

Skill Chart

The third table lists the movement and score enhancing skills that the player uses to play the game.

Skill	Associated Obstacles	Game Function	Technical Description
Move Forward	All	You can move forward.	Frog moves a unit forward at a constant speed as long as the joystick is in the forward position
Move Left	All	You can move to the left.	Frog moves a unit to the left at a constant speed as long as the joystick is in the forward position
Move Right	All	You can move to the right.	Frog moves a unit to the right at a constant speed as long as the joystick is in the forward position
Move Back	All	You can move backward.	Frog moves a unit backwards at a constant speed as long as the joystick is in the forward position
Ride	All Log types, Log Crocodiles	You can ride on logs and log crocodiles.	Frog moves onto log/log crocodile and is moved with the log/log crocodile until frog moves off.
Purple Frog	High Score	You can collect the purple frog and bring it to the safe space for bonus points.	The purple frog hops on the player frog's back upon collision and results in 200 bonus points if the player reaches a safe space with the purple frog.
Fly	High Score	You can collect the fly at the safe space for bonus points.	The fly results in 200 bonus points if the player lands at a safe space while there is a fly in that space.
Speed	Time, High Score	You can complete the levels quickly to earn more points	The player will be awarded 10 times the number of remaining seconds in the time bar as bonus points upon completing a level.

Table 3: List of Player Skills found in Frogger

Skill Distribution Chart

The fourth table illustrates that the skills outlined in the previous table are used and applicable in every level of Frogger.

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
Move Forward	X	X	X	X	X	X	X	X	X	X
Move Left	X	X	X	X	X	X	X	X	X	X
Move Right	X	X	X	X	X	X	X	X	X	X
Move Back	X	X	X	X	X	X	X	X	X	X
Ride	X	X	X	X	X	X	X	X	X	X
Toad	X	X	X	X	X	X	X	X	X	X
Fly	X	X	X	X	X	X	X	X	X	X
Speed	X	X	X	X	X	X	X	X	X	X

Table 4: Distribution of Player Skills found in Frogger