Raycasting implementations – Permadi tutorial

Joseph21, February 1, 2023

All source files on: https://github.com/Joseph21-6147/Raycasting-tutorial-series---Permadi-inspired

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Nr	Permadi tutorial	Source file name	Subject	Preview
1	Parts 03-09 (&15)	• main - part 09a (plain rendering, hor. motion, naive distance finding algo).cpp	Non-textured rendering, horizontal motion, naïve distance finding	
2	Parts 03-09 (&15)	• main - part 09b (plain rendering, hor. motion, DDA algo).cpp	DDA implementation (instead of naïve distance finding)	ET die PGE - MyRayCarter - Permadi Indicini - 5 (905, 800), P(1, 1) - FPS; 201 **C Parameter - 27, 00000000000000000000000000000000000

Nr	Permadi tutorial	Source file name	Subject	Preview III. olc PG + MyBy/Caster - Permadi Industrial - 5(96), 6001, P(1, 1) - FPG 86 X
3	Part 10	• main - part 10 (textured walls).cpp	Added: Wall texturing	IN oto PGZ - Maybuy Caster - Permadi Internal - 5(800, 1900, PCI, 1) - FPS 10
4	Parts 11-12	• main - part 12 (textured floor).cpp	Added: Floor texturing	Clo PGZ + MyRayCater - Permati Internal - 5(460, 600), P(1, 1) - FFG-48 X X X X X X X X X
5	Part 13	• main - part 13 (textured ceiling).cpp	Added: Ceiling texturing	El olo PEZ - MyRsyCaster - Permadi sharial - 5(96, 907), P.(1, 1) - FPS 34

Nr	Permadi tutorial	Source file name	Subject	Preview
6	Part 14a	• main - part 14a (variable height walls).cpp	Added: Variable height walls	E die Pd. Myflegeter - Personal Interior - 1990, (90), Pcl. () - PS-47
7	Part 14b	• main - part 14b (variable height walls - improved texturing).cpp	Added: Improved wall texturing for variable height walls	X of PO - 1-1/4 Page Center - Permand Indiciol - 5/09(90) P(1) - 1-PG 45
8	Part 16	main - part 16 (vertical motion - looking up and down).cpp	Added: Effect to simulate looking up or down	E de PG-Mylar, Cater - Permadi natorial - 5(40), 600, P.(1, 1) - 1PJ- 64 X PG-Mylar 2-2 2004 1 1 1 1 1 1 2 1 1 1

Nr	Permadi tutorial	Source file name	Subject	Preview
9	Part 17a	• main - part 17a (flying and crouching).cpp	Added: Code for flying and crouching of player, in combination with variable height walls.	#T clc PG - MyRy Caster - Permed Induced - 5 (M), 600, P(1), 17-PE 54 X
10	Part 17b	• main - part 17b (textured roofs, optional mouse control).cpp	Added: Roof texturing and optional mouse control	El de Rdf - Myllog-Cater - Permelli Indexed - 5(M), RDI, PCI, 1) - PES 36
11	Part 19	• main - part 19 (shading - night effect).cpp	Added: Simple form of distance shading	

Elaborations on the Permadi tutorial

Joseph21, April 22, 2023

I implemented and posted the Permadi based tutorial series in spring 2022. Currently I decided to elaborate on that series with some of my own creations:

Nr	Source file name	Subject	Preview
12	• main - part 20 (fractional wall heights).cpp	Experiment with walls that are ¼, ½, ¾ high – it's trivial to create walls with other fractions as well	A Control Management (SCIR) TO PC (1) 197 10
13	 main - part 21a (sprites - basic rendering).cpp main - part 21b (sprites - with column based depth buffer).cpp main - part 21c (sprites - painters algo).cpp main - part 21d (sprites - looking and moving up and down).cpp main - part 21e (sprites - randomly initialized).cpp main - part 21f (demo version with 2D depthbuffer).cpp 	Introduction of objects (sprites) using the technique of billboarding. These parts build up the functionality so that looking and moving up and down are supported in combination with (scaled) billboard rendering	E) cl.:292-3-Mpg/care - Persol tutaria - 5/3/3/2/20 (P) (1-1993)
14	 main - part 22a (class RC_Map introduced).cpp main - part 22b (map representation adapted).cpp main - part 22c (working version, bugs in roof ceil texturing).cpp main - part 22d (texturing and CD fixed).cpp 	Introduction of gaps/holes in the walls, overhanging and floating blocks	E1 0.000 1/00/com Personal control (100 T0) E1 (11-10) 90

Nr	Source file name	Subject	Preview
15	• main - part 23a (class RC Objects introduced).cpp	See-through (transparent) texturing	El olc:PGE - MyRayCaster - Permadi butorial - Sc(1000, 600), Pc(1, 1) - FPS-32
	• map_demo - part 23a.h	(for windows and doors, holes in roofs,etc), animated textures (for doors	
	• main - part 23b (block and face differentiated texturing).cpp	etc), texturing differentiated per block	
	• map_10x10 - part 23b.h	face (east, north, west, south, top, bottom)	
	• main - part 23c (face hit detection added in DDA algo).cpp	Journ's	
	• map_16x16 - part 23c.h		
	• main - part 23d (see-through windows and doors).cpp		
	• map_16x16 - part 23d.h		
	• main - part 23e (door gate animation).cpp		
	• map_16x16 - part 23e.h		
	• main - part 23f (refactored block structure in classes).cpp		
	• main - part 23g (refactored blocks in faces as well).cpp		
	• map_16x16 - part 23g.h		
16	• part 24a (isolated RC_Misc)	Consider this a maintenance release.	
	• part 24b (isolated RC_Face)	The code is split up into smaller	
	• part 24c (isolated RC_MapCell)	modules to make it more manageable.	
	• part 24d (isolated RC_Map)	Some improvements were made in the	
	• part 24e (isolated blueprints data and functions)	process, very little functionality is	
	• part 24f (added DepthDrawer)	added.	
	• part 24g (isolated RC_Object)		
4-	• part 24h (refactoring finalized, small changes and improvements)		El olc:PGE -MyRayCaster - Permadi tutorial deborations - S(1000, 600, P(1, 1) - FPS-42 X
17	• part 25a (dynamic map cells)	Created a type of map cell (previously	(8) otcznic - ngraji, usta - remian tutoni elacoretoro - 3,1,00, 00,0, 7,1,1,1 - FF2-4C
		"block") that moves and shrinks	
		dynamically and periodically. It's just a	
		prototype, could be extended later on.	
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Nr	Source file name	Subject	Preview
18	• part 25b (multiple maps) • part 25c (portals - first version, no portal rendering yet) • part 25d (portals - recursive sub slice rendering)	These versions lead to the first / rudimentary portal rendering, where two different maps are visible in one view, and the player can move seamlessly from one map to the other through the portal. The user has no notion that under the hood another map is activated.	E dc:PGL -MpRay_cater - Permadi tutoual dalbourdism - \$ (1000, 600), Pr(1, 1) - PF2-23
19	• part 25e (extended input checking) • part 25f (objects organized per map)	Since the file with the map definition becomes increasingly important, I put some effort into checking on the correctness of the input data, and on the integrity of the maps that are created from it. Furthermore, I organized the objects per map.	El ciclist - hyling cater - Permedi tutorial elaboration - \$(1000, 000, P.C.) 7-195-33
20	• part 25g (face portals) • part 25h (portals - queued sub slice rendering)	To get the rendering fixed, I needed to give the portal characteristic to the faces (instead of the map cells). Furthermore I split off a filter function from the DDA algorithm, to get more grip on the DDA and how the results thereof are rendered. Finally, I rewrote the recursive sub slice renderer into a version that works with a queue.	