Tetris - Basic Implementation Practice for Android

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Contents

1 Upgrading versions, pretty good

1.1 3d tetris

1.1.1 Game Requirement

- Layout: the main activity game view allow NO buttons; If there are too many gestures applied, could include a instruction view for gesture guide. Could have slightly interesting layout for scores, or any effects that I could come up with later on (so far has not worried or do any research about this part yet).

- Threads/Runnable: As you can feel once my mind is not clear I would make mistakes here or there. Threads/Runnables are useful but for opengl rendering because it is hardware accelerated rendering, unfortunately Threads/Runnables won't help too much for redering here. But I will try to pack these Threads/Runnables into my 2d tetris when this one is done. (think about it: if the thread calling opengl calls setCurrentContext. need to search more on opengl redering and thread for this module a little bit more. While concepts/ideas are right though. App developped in this age without threads applied I would feel shamed to call it a mobile app.) Need think about this part.

- Gestures: includes MotionEvent for single finger, double or three fingers, use pointers, pack different gestures tasks into different runnables. gestures should be easy to use and apply. Look back on DrawingFun fun app developped during Fall 2014, fragments, threads, view/invalidates were all so easy, don't Understand why during those days I could only make them work without really/deeply understood how they works that way.
  - In total about 15 gestions that I could think so far
  - 4 gestures for frame rotation around Z and x || (y = 2.5, z = 5) axis clockwise && anti- for single finger touch (left, right, up, down).
  - 4 gestures for single finger active block moves up/dow x / y directions (left, right, up, down).
  - 6 gestures for double or triple fingers touch for acitve block rotates around x / y / z clock/anti-clockwise (left, right, up, down, 2 scrolls).
  - Double tap for fast dropping, but don't limited to double tap, could apply velocities detection if I could figure them out.

- Model: So far draw, rotating has no issues. Just one more step to think after active block has rotated (90, 180, 270, 360 or whatever), after I droped, how as I going to put the correct element into board[i][j][k] matrix. I need rotation matrix calculation functions here for me to update my board. Data structure design I think it will work.

- So far the only part that I want more research is on (Frame + Grid) vs current active block rotations, so that I could rotate them according when needed, (do I really need to use ray picking for identifying them) will do more online research on this part. I could implement ray picking, just feel 2d point doesn't necessarily fall into 3d frame. (which means outside 5*5*10 gestures to rotate frame, inside 5*5*10 frame rotate current active block, but I want more research to confirm if this is the best solution).

- minors features that I could skip if I don't have time:
  - After the bridgeing Cube app, texture is not any problems for me (just need to figure out a simple easier way to build an App manager (or simplier shaders) of my own, and manager the resources). Would borrow textures (with sounds) materials from glar3d and apply textures on my 3d game after majority functionalities are finished.
  - Come back to Cube app to make the mediaplayer for video work first, and then apply technic on Mediaplayer back to 3d for sounds besides the background sound, if I feel I have such a need with plants && zombies Unity game waiting for me.

- Expect the 3d game (videoable version) to be uploaded onto youtube by 5/17/2016. Considering debugging time and all other minor difficulties that I might meet later on, I will have to work hard on this one.

1.1.2 Status Update

- Data stucture design almost done with minor current active block rotate together with frame needs to be fixed. will work on ray picking now & in the afternoon.

- My app is not stable yet ever since Wednesday evening rotating around block center, tried to debug, but it came back alive so I just continued with simple gesture tests. But will work on debugging next time when it happens.

- Will continue with some search online for confirm if ray picking or not, and will at least try ray-pickign on the app in the evening.

- Will update at in the afternoon and in the late evening.

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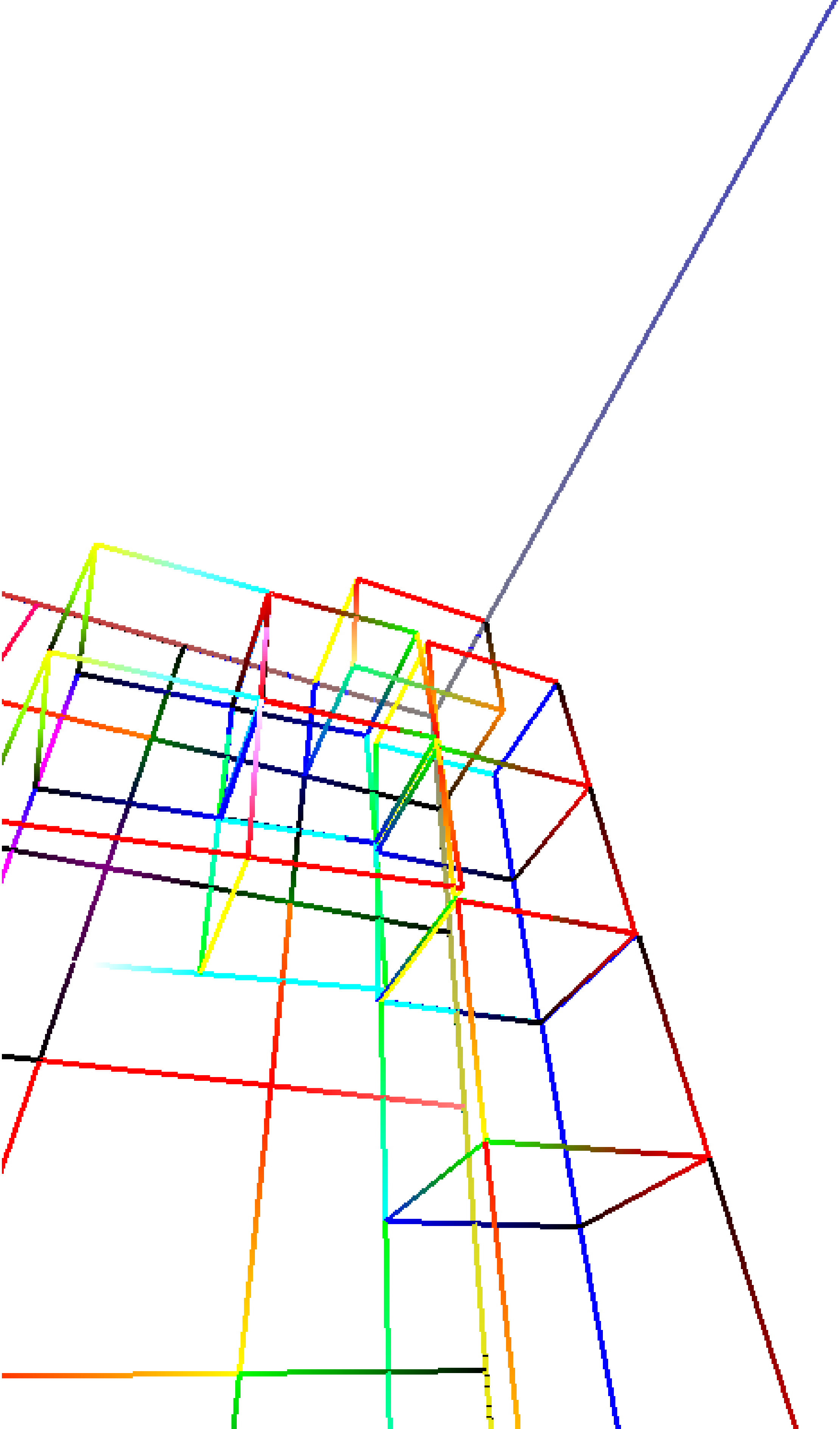
- need to set eye position better so that the (Frame + Grid) layout can be at the position that I want for the 3d game.

- I want yellow grids, together with white background, red-x yellow-y, but I fail get such effect. Currently using black grid, but I will change it to be better looking.

- Emacs is such a powerful tool for me for coding considering and accepting the facts that occasional it would produce some minor troubles for me so that I would have to google for solutions. This morning the parenthesis don't autopair for () [] {} for java-mode, after having googled for few minutes, I have used and trust autopair for so long and realized actually sometimes he gets tired, and once I close and restart it, he works perfectly. I am looking forward to the day that my beloved cousin would be able to help and guide me with emacs debugging.

- 3d tetris layout structure:



- a video for this Tetris game can be directly watched at https://www.youtube.com/watch?v=Ht4NOrEUtFk
- A video for the previous DrawingFun Android App can be watched at https://www.youtube.com/watch?v=YV78Tk , or by searching deepwaterooo Wang.

1.2 folders

- lame2d: the very first version of the game.
- 2d: SurfaceView redering 2d Implementation.
- 3d: will work on a simple opengl 3d version first. Currently working on this one, will spend a few of following days on this one as well.
- glar3d: upgraded opengl 3d version adapted from tetrisglar app with textures and music, and real 3d instead of any pseudo one, will implement this one when simple 3d version is done. (After having understood texture and lights better, tried to debug this one for a while, but still complicated design and layout still make this one to some extend difficult for me for now.)

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