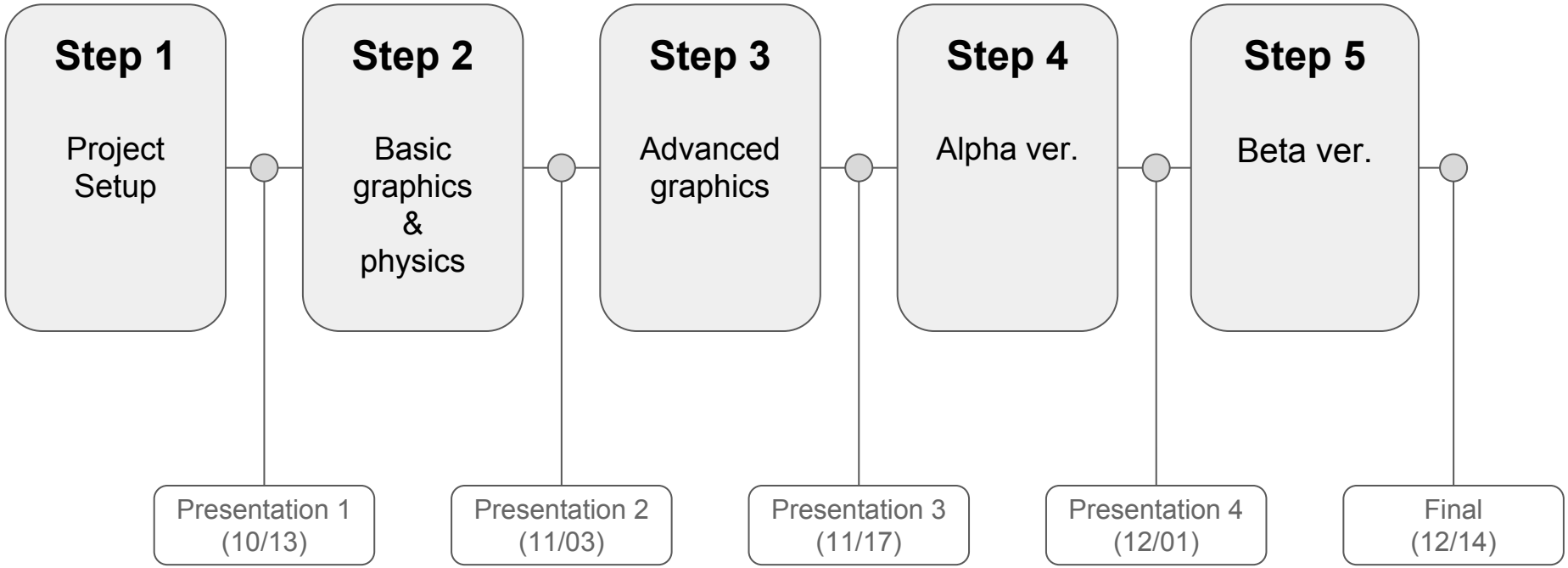
Bubble

Team 4 (Hun-Min Park, Sang-Gyun An, JongMin Jin)

Let’s blow a virtual bubble
as far as you can!

Project schedule



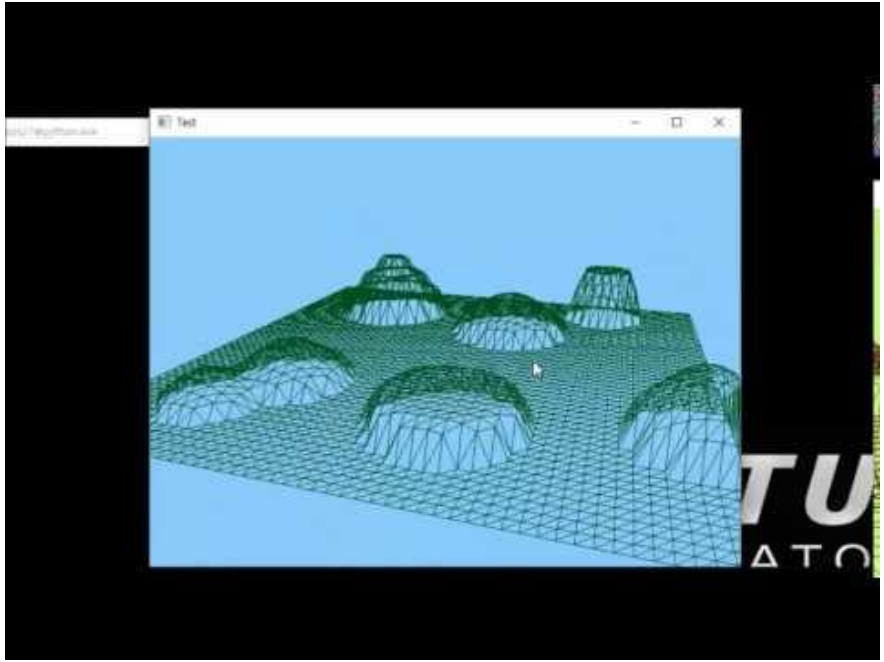
Step 1: Project setup (~ 10/12)

- Fundamental Android project
  - Basic modules
- Basic OpenGL 3D world

Fundamental Android project

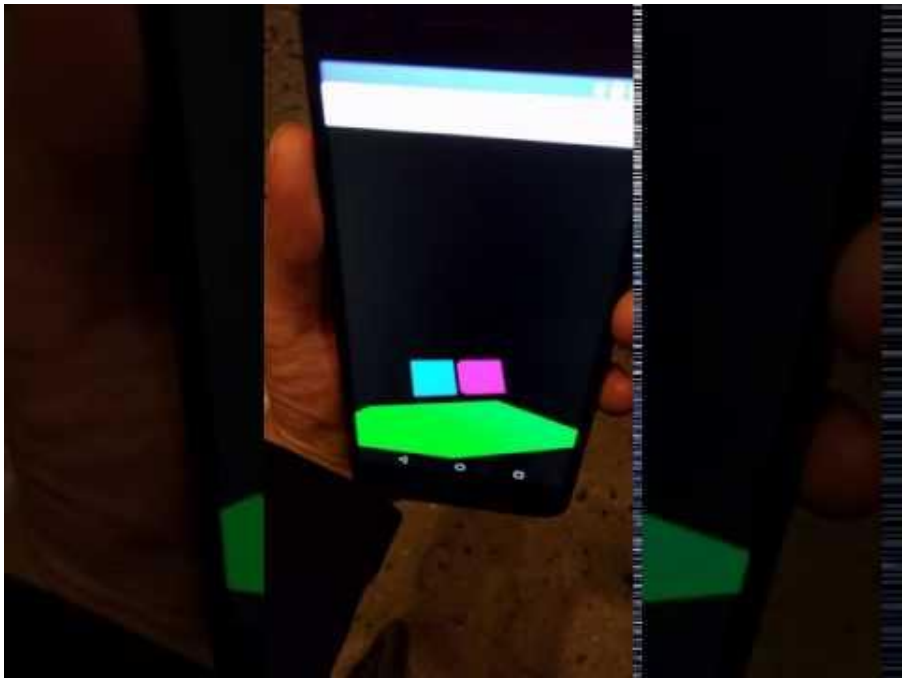
- Activities
  - IntroActivity
  - MainActivity
  - ScoreActivity
- Models
  - Drawable
  - Collider
  - Deformable
  - Bubble
  - Tree
  - Bird
  - Map
  - ...
- Views
  - MyGLSurfaceView
  - Button
  - …
- Event
  - EventHandler
  - SoundHandler
  - GyroHandler
- Utils
  - Matrix
  - …
- ...

GL 3D world + Map generator



- Draw a large square first.
- Divide it into evenly-spaced small squares.
- Pick a point P among the vertices. Let h and r height and radius of the ‘hill’.
- For the points X = (x, y, z) such that |X-P| ≤ r, replace the value of y to
  y_new = max(h*exp(-(|X-P|/r)^2), y)
- This makes a ‘hill’ on the map.
- Modifying the formula gives us different kinds of hills. ex) ‘stairs’, ‘cliffs’, etc.

Rotate view by rotating Android device



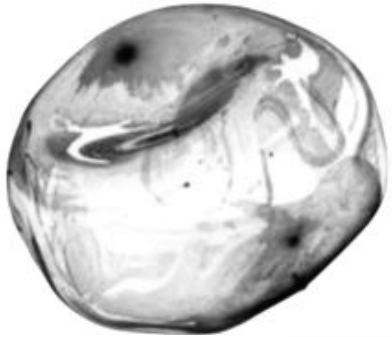
- Gyroscope sensor

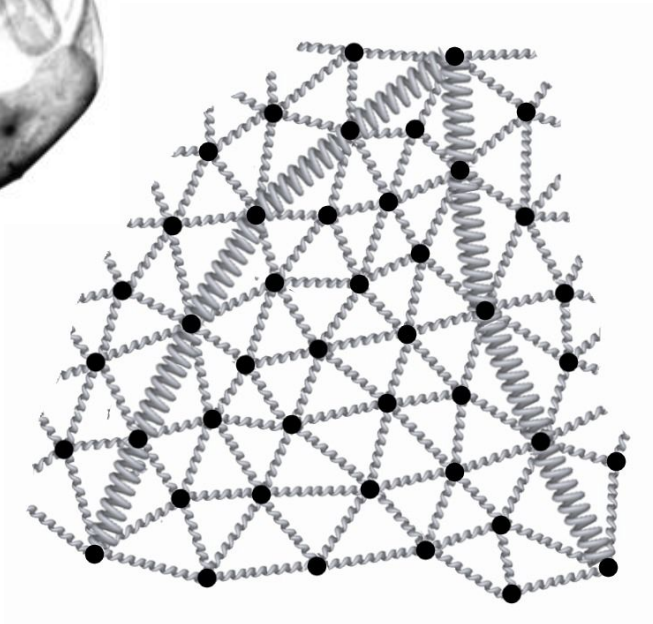
Move object by blowing

- Android microphone → sound level → translation matrix

Step 2: basic graphics & physics (10/14 ~ 11/02)

- Models
  - Bubble
  - Obstacles (e.g., tree)
- Physics simulation
  - Gravity
  - Hook’s law for spring-mass model
  - Collision



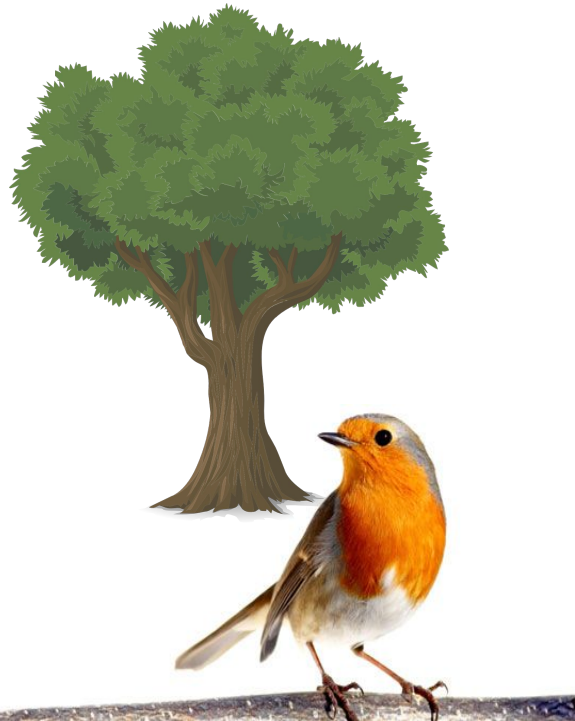


Step 3: Advanced graphics (11/04 ~ 11/16)

- Shader
  - Lighting for better atmosphere
  - Texture for a realistic background

Step 4: alpha ver. (11/18 ~ 11/30)

- Game logic
  - Level design
    - Different map
    - Obstacles
- UI graphic



Step 5: Beta ver. (12/02 ~ 12/13)

- Validation by user test
  - Final improvement
- Prepare final presentation

Thank U