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GROUP 14 – P7S

// FLOOR  
const HEIGHT\_FLOOR > is the height of floor tiles.

// MOVEMENT  
const TANK\_OFFSET > is how much the thank moves with each arrowUp/Down.

let distanceMoved > is how much the tank moved from origin, accumulative.  
// TANK MEASUREMENTS  
const TORUS\_RADIUS > the radio of the torus used in the wheels.  
const TANK\_WHEEL\_RADIUS > wheel radius;  
const TANK\_WHEELS\_CROSS\_LENGTH > wheel décor length.  
const TANK\_WHEELS\_CROSS\_WIDTH\_HEIGHT > wheel décor height.

const TANK\_LENGTH > tank length.  
const TANK\_HEIGHT > tank height.  
const TANK\_WIDTH > tank width.

// BUMPER (pointy front and back)

function bumper (*upordown*, *frontorback*, *rx*, *ry*, *rz*, *color*)

> upordown = 1 or -1 for top or bottom prisms.

> frontorback 1 or -1 for front or back prisms.

> rx, ry, rz are the rotations needed to get them in respective place.

> color is simple the color they are, bottom ones are darker.

const BUMPER\_HEIGHT > bumper height, which is half of the tank cube height.  
const BUMPER\_LENGTH > the length of the bumper/prism.  
const BUMPER\_TRANSLATION\_LENGTH > how much the thank needs to move in the x axis.   
const BUMPER\_FLOATING\_HEIGHT > how much the thank needs to move in the y axis.   
// WHEEL COVERS/SIDESKIRT

function sideSkirt (*upordown*, *rightorleft*, *color*)

> upordown = 1 or -1 for top or bottom flattened cubes.

> rightorleft 1 or -1 right or left flattened cubes.

> rx, ry, rz are the rotations needed to get them in respective place.

> color is simple the color they are, bottom ones are darker.

const SIDE\_SKIRT\_GAP > gap between wheels and covers/skirts.  
const SIDE\_SKIRT\_FLOATING\_HEIGHT > covers/skirts length, is dependent on the tank´s main cube.  
const SIDE\_SKIRT\_DISTANCE\_FROM\_TANK > distance from tank plus gap.

// STLANTED TOP EDGES

const SLANTED\_EDGES\_HEIGHT > body pyramid height.  
const SLANTED\_EDGES\_FLOATING\_HEIGHT > body pyramid height from floor.  
const SLANTED\_EDGES\_WIDTH > width of body’s pyramid, depends on tank and side skirt.  
// WHEELS  
const WHEELS\_ROTATION\_ANGLE > the angle of wheel rotation for each arrowUp/Down.  
constants WHEELS\_RIGHT\_OF\_TANK, LEFT\_OF\_TANK > distance of wheels relative to tank.   
const WHEELS\_ORDER > array with the positions of the wheels to place, in the x axis.  
let rotateWheels > how much the rotated, restarts at 360.  
// CABIN/TOP CYLINDER  
const CABIN\_HEIGHT > top cylinder height;  
const CABIN\_LENGTH\_RADIUS > top cylinder radius lengthwise.  
const CABIN\_WIDTH\_RADIUS > top cylinder radius widthwise.

// PLATFROM/CUBE UNDER CYLINDER)  
const PLATFORM\_LENGTH > the length of the platform.  
const PLATFORM\_HEIGHT > the height of the platform.

const PLATFORM\_WIDTH > the width of the platform.  
const PLATFORM\_FLOATING\_HEIGHT > y coordinates of the platform’s top surface.  
// LIGHT RIM UNDER SHOOTER CABIN  
const SHOOTER\_RIM\_RADIUS > the radius of the rim.  
const SHOOTER\_RIM\_HEIGHT > the height of the rim  
const SHOOTER\_RIM\_FLOATING\_HEIGHT > y coordinates of the top surface of that cylinder.  
const CABIN\_FLOATING\_HEIGHT = > y coordinates of the top surface of the cabin (depends on the rim).

// HEART  
const HEART\_RADIUS > heart’s cylinder/cube radius/sides.  
const HEART\_HEIGHT > heart height.  
const HEART\_FLOATING\_HEIGHT > y coordinate of the top of the heart.  
const HEART\_DISTANCE\_APART > distance between primitives.  
// CANNON ROTATION  
const CANNON\_ROTATION\_ANGLE\_HORIZONTAL > angle per horizontal rotation(a/d).  
const CANNON\_ROTATION\_ANGLE\_VERTICAL > angle per vertical rotation(w/s).

// CANNON – BASE (1st CYLINDER)  
const CANNON\_BASE\_LENGTH > base length.

const CANNON\_BASE\_RADIUS > base radius.  
const CANNON\_BASE\_FLOATING\_HEIGHT > center y coordinate.

// CANNON – PIPE (2nd CYLINDER)  
const CANNON\_PIPE\_LENGTH > pipe length.  
const CANNON\_PIPE\_RADIUS > pipe radius.  
const CANNON\_PIPE\_DISTANCE\_FROM\_CABIN > mid pipe to cabin distance.

// CANNON – MUZZLE (3rd CYLINDER)  
const CANNON\_MUZZLE\_LENGTH > muzzle length.

const CANNON\_MUZZLE\_RADIUS > muzzle radius.  
const CANNON\_MUZZLE\_DISTANCE\_FROM\_CABIN > distance from mid muzzle to cabin.  
// CANNON – HOLE (4th CYLINDER)

const CANNON\_HOLE\_LENGTH > hole length.

const CANNON\_HOLE\_RADIUS > hole radius.

const CANNON\_HOLE\_DISTANCE\_FROM\_CABIN > distance from mid hole to cabin.  
// CANNON MOVEMENT

let rotateCannonHorizontal > current horizontal rotation of cannon.  
let rotateCannonVertical > current vertical rotation of cannon.  
const MAX\_ANGLE > maximum vertical angle.  
const MIN\_ANGLE > minimum vertical angle.  
// COLORS  
constants DARK\_PINK\_COLOR, LIGHTER\_PINK, EVEN\_LIGHTER\_PINK, ACTUAL\_PINK, IDONTKNOW\_PINK > are simply colors attributed to certain parts of the tank.

// BULLET  
const DELTATIME > delta time (set at 1/60).   
const BULLET\_SPEED > bullet’s speed (set at 20).  
let bullets = [];  
let bulletKey > if bullet shooting is activated (starts as false).

(There are other colors/constants in app.js that we did not include here, because their only purpose is creating a better effect of light/shadow, and are dependent on already explained constants)