RocketLander!

HTML objects

HTMLImageElement
- Falcon9.png
- Falcon9Fire.png
- Falcon9Thrusters.png
- Smoke.png
- Loading.png
- Ocean.png
- OceanSlice.png
- Earth.png
- EarthSlice.png

HTMLCanvasElement
- canvas

Shape
- landingSite
- fillBar_fuel
- fillBar_mono

Bitmap
- eBackground
- eSlice
- oBackground
- oSlice

Sprite
- Smoke_sprite

Text
- endText
- physicsText
- fuelText
- helpText
- pausedText

Variables
- thrustLevel
- altitude
- level
- velocityX
- velocityY
- fuel
- mono
- landed
- gameover
- thrustChanged

CreateJS
- Ticker
- Stage
- Queue

HTML / Browser
- Window

Game Objects

Shape
- tinyPt
- smallPt
- mediumPt
- largePt
- thrusterPtL
- thrusterPtR
- Center of Mass

Container
- rocket

Sprite
- body
- legs
- fire
- thrusterL
- thrusterR

SpriteSheet
- Rocket_sheet
- Fire_sheet
- Thruster_sheet

Building Game Objects

- buildSpriteSheets()
- buildGameObjects()
- buildAndPlaceRocket()
- buildRocket(regX, regY, angle)
- buildBody()
- buildLegs()
- buildFire()
- buildThrusters()
- buildCenterOfMass(target, color, radius)
- buildThrusterPoints()
- buildFlamePoints()
- buildLandingSite()
- buildEarthBackground()
- buildOceanBackground()
- buildGUI()
- buildText(txt, style, color, alignment, x, y, visible, alpha)
- buildBar(x,y, type, fillColor)
- buildSmoke(x,y)

Update Game Objects

- updateRocket()
- calcNextRotation()
- calcNextPosition()
- getStandardAngle(rotation)
- getYThrust(angle)
- getXThrust(angle)
- degreesToRadians(degrees)
- radiansToDegrees(radians)
- detectCollision(pt)
- renderRocket()
- resetGameValues()
- updateAltitude()
- updateStats()
- updateFuelLevels()
- updateBars()
- reduceFuel()
- reduceMono()
- removeRocket()
- decreaseThrust()
- increaseThrust()
- changeLevel()

Sprite Animations

- updateAnimations()
- landedAnimations()
- crashAnimations()
- updateEngine()
- cutEngineAnimation()
- updateThrusters()
- cutThrustersAnimation()
- flareThrusters()
- thrusterSmoke()
- engineSmoke()
- Fadeout(e)
- smokeComplete()

Game Mechanics: loading, running, stopping, resetting

- Init()
- Load()
- Run(e)
- Pause()
- endingSequence()
- resetGame()

User Input

- detectKey()
- removeKey()

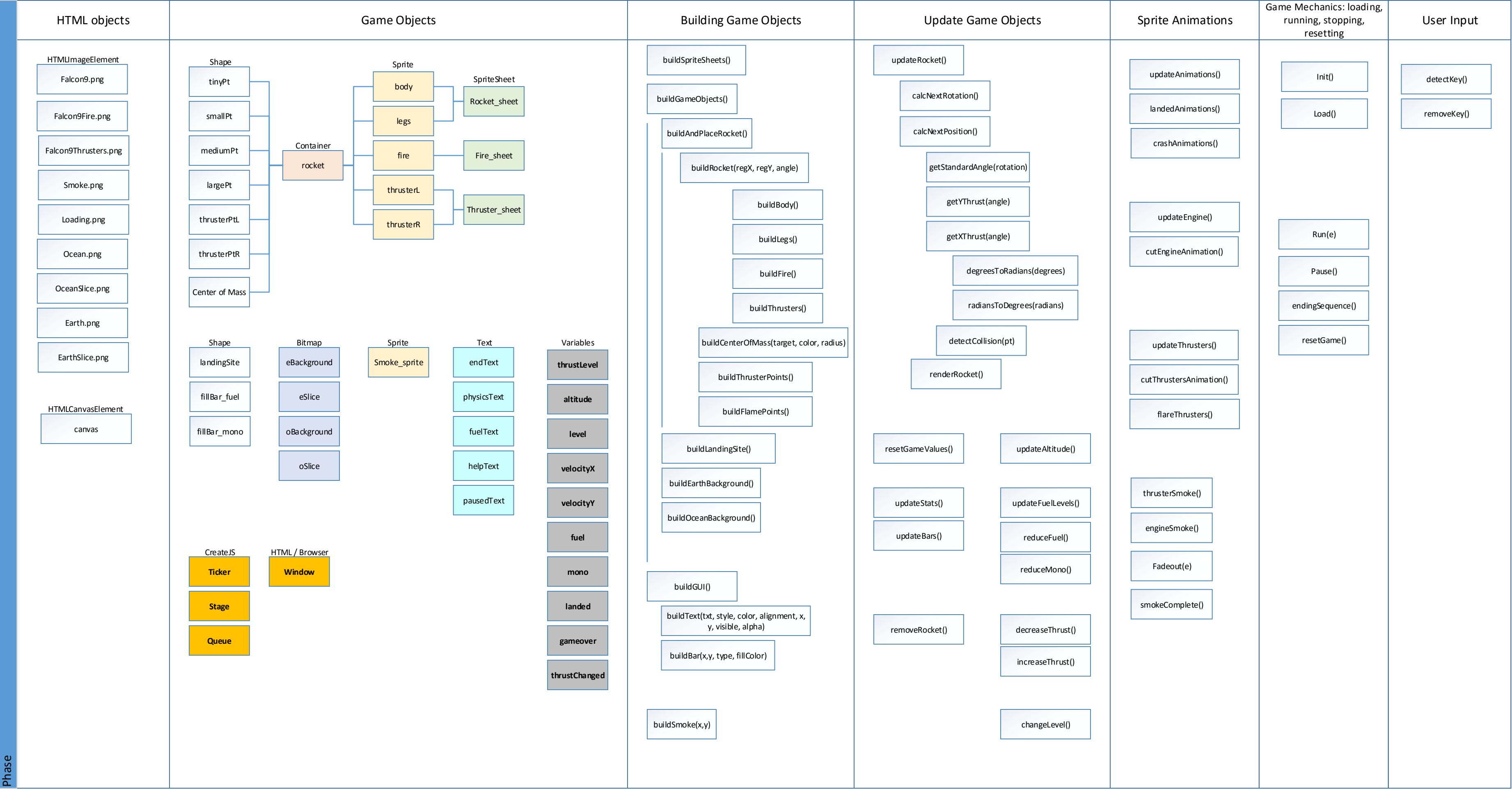## Notes:
- Separate adding keyboard input event from init()
- can't build Sprites inside rocket without spritesheets
- can't build spritesheets or bitmaps without loadingManifest() in init()
- can't build smoke sprite without loadingManifest()
- can't reset game values without building game objects first
- separate flagging which key was pressed from particular methods (pause, increase or decrease thruster, change level)

- run method has ties to update, render everything.
- way to reuse rocket without deleting and rebuilding?
- changeLevel coupled to endingSequence()
- resetGame coupled to endingSequence()
- endingSequence coupled to run(e)
- buildRocket depends on spritesheets existing
- buildRocket depends on this particular image of rocket for pixel dimensions
- buildRocket depends on eSlice existing

- text for fuel remaining is independent of text for fill bar
- updateBars() requires reference to graphics command object – replace with simple method to do this instead
- build Bar depends on particular type of fuel it is being constructed for, because of needing the reference to the graphics command object – may change this if change method

- updateThrusters, cutThrusterAnimation, flareThrusters, updateEngine, cutEngineAnimation could be improved, better designed? (for example, updateThrusters and updateEngine are coupled to run() so they are called multiple times – resulting in need for multiple checks and flags to ensure they occur only once per animation change; need a better flag for this, so they only need to check against that flag. "thrusterLAnimationChanged", "engineAnimationChanged", etc.