Game engine

Name:

Jacket Engine

# Engine

library

Setup

* Factory between DirectX 11 and 12

window creation

* Windows

Useful items-

* Object pools
* Threading
* Linked list

ECS-

* Components
* All-
* Id component
  + Name
  + Id (unique)
* Systems

Save/load functions-

* Load folder
* Single file load
* Load file

File loading/creation-

* JSON
* CSV
* Text file
* Raw file
* Image file types

Event

* Event system
* Custom events

Animation-

* Skelton – 2D/3D
* Forward kinematics
* Invers kinematics
* Sprite animation

Terrain generation-

* Noise
* Fault line
* Voxel generation

Object loading-

* Assimp
  + Obj
  + Fbx

3d Objects-

* collision component (one- many)
  + name
  + offset
  + circler:
    - radius
  + rectangle:
    - size (x,y,z)
* action component (one – many)
  + control type (one,repeat…)
  + control (button)
  + action (command)
* object component (one)
* render component (one)
  + shadow enabled
  + toRender
  + bump mapping/ parallax mapping
* texture component (one-many)
  + texture
  + normal map
  + displacement map
* position component
  + rotation
  + position
  + scale

UI-

* UI component

Graphics-

* 3D rendering
  + render Objects lists
  + Transformation
  + look
  + physics
* 2D rendering - ui
* Postprocessing
  + Blur
  + Fade
  + Bloom
  + Colour
  + Ambient occlusion
* Lighting
  + Global illumination
  + Local illumination
* Shadows
* Billboarding
* Fog
* Bump mapping
* Parallax mapping
* Occlusion culling
* Shader reflection

UI items-

* Text
* Components to built ui

Maths/Utilts-

* Random functions
  + RandInt
  + RandFloat
  + RandPointInSquare
  + RandPointIncircle
  + RandPointInSphere
  + RandPointInCube
* Vectors
  + Vec3
  + Vec2
  + Inverse
  + Cross
  + Dot
  + Add
  + Normalise
  + Length
  + Minus
* Quaternions
* String

Input system

* Factory between different input receivers – ie windows and xinput
* Controller
* Mouse
* Keyboard
* Key binding

Particle system

* Lines
* Springs
* Effect particles

Physics

* Collisions
  + Point in area
  + Point in circle
  + Line collision

# Tools

Debug tool-

# Editor

UI builder

Object creation-

Animation editor-

* Sprite Animation creation

Terrain creation-

* Direct deformation
* Menu setup

## File structure

## UI Design