Research and Design

Task 1

2D Game Engines

Unity

- 2D physics.
- Supports sprites
- Free
- Cross platform
- Uses C++

Construct

- Uses more Graphics than code
- JavaScript
- Specific conditions
- More complicated behaviors possible
- Free

3D Game Engines

RE Engine

- Uses ‘Subsurface Scatters’; it is a method of shading that makes a game character’s skin look really real.
- Is able to output to 4K Resolution by using certain rendering techniques.
- Has dynamic shadows.
- Can be used to make VR games.
- Scans things using a 3D photoshoot to put in the game.

Unreal Engine

- Detects collisions.
- Lighting in different colors.
- Skeletal animation system.
- Uses particle systems.
- Cinematic editing tool.

Source

- Uses Phong shading.
- Supports split screen multiplayer.
- Highly-dynamic AI Director
- Event Scripting
- Color Correction

Gamebryo

- Multi-Platform
- Can combine and extend libraries.
- Uses C++
- Design emphasises a rapid prototyping approach aimed at an iterative development process.

Task 2

Gaming Programming Languages

C++

- Mostly used for writing game engines
- Is object orientated

Java

- Runs on everything
- Very dynamic language

HTML5

- Used in web
- Can be used instead of JavaScript sometimes

CSS3

- Also used in web
- Makes things look nice

JavaScript

- Used to make things move
- Cannot work without HTML5 and CSS3

SQL

- Not visible to normal people
- Saves your stuff on a server

Task 3

Importance of Compression

Depending on the multimedia, space and sizes can be very daunting in the sense of some things being way bigger than others. Depending on resolution and color depth and such thing can make an image take 5mb of space or 2mb. This is why compression is used. It makes things easier because everything takes up less space. Images tend to use different compression schemes. Some formats use lossy and some use lossless. Lossy compression will compress your image more but by doing so will be losing the quality of the image. Lossless is the opposite. It will not lose quality but it will take more space.

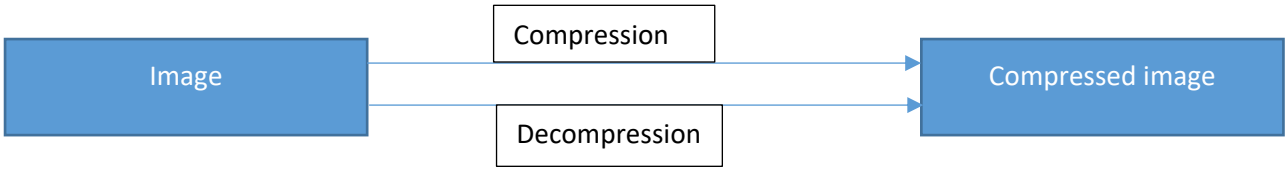
Image
Compression
Decompression
Compressed image