GOOD

Unity

→ Unity is a cross-platform game development system.

→ It consists of a game engine and an IDE

Basic Concepts (Very important)

project : It consists of all the models, game objects, assets, scripts, scenes and so on.

Scene :- It consists of the game objects that constitute the world the player sees

Packages :- It's an aggregation of the game objects and their associated metadata.

prefabs :- It's a template of grouping various assets under a single header.

→ It's used for creating multiple resources of the same object

Ex: trees, leaves

→ prefabs can be instantiated during runtime.

Game objects :- These are the thing that constitute the scene

→ light sources

→ Audio sources

→ cameras

→ game play logic

→ UI, etc.

Scene graph :- Its a graph/tree based hierachial structuring of the nodes

→ all tree nodes will have a single parent but can have multiple children.

→ operations applied to parents are applied to children also but vice-versa doesn't happen.

Components :- These are functional pieces of every game object.

→ These contain properties which can be edited and used to define the behaviour of the game object.

Example :- mesh filter, mesh renderer, Rigidbody, colliders, videoplayer, etc.

Scripts :- many inbuilt components already exist but if you want to build a new component we can use scripts.

→ These scripts inherit from MonoBehaviour

Assets :- It's a resource that will be used as a part of an object's component

(or)

It's an item that can be used in a unity project

ex :- scenes, prefabs, scripts, textures, animations.

Shaders :- Unity has several builtin shaders

(i) standard shader

A shader is used to render real world objects such as wood, glass, plastic and metal.

It supports wide range of shader types and combinations.

Lighting :- It describes abt the light property

→ point lights → ex lamps, candles

→ spot lights → ex, flash, torch, car headlights

→ directional lights → ex, sun, tubelights

→ Area lights

Scripting in Unity :-

→ Its done using C#

→ Scripts are an example of a component associated with a game object.

MonoBehaviour (Fundamental class)

→ Every script created in unity extends this monoBehaviour class.

→ It contains some prebuilt methods which are available to game objects

such as Awake(), Start(), Update(), Destroy(), Instantiate(), etc.

GameObject (Fundamental class)

→ Its a generic type from which all the game objects are created.

→ GameObjects have an associated name and tag.

ex: how to find main camera reference by its name

```
GameObject camera = GameObject.Find("Main Camera");
```

Transform (Fundamental class)

→ every game object in a scene has this Transform.

→ Its used to store and manipulate the position, rotation and scale of the object.

position → transform.position

rotation → transform.eulerAngles