# **Lab 2**

* Work in pairs to develop a 3D game based on ideas from [Cosmic Crush](https://www.youtube.com/watch?v=5MB0rNU-4Ak), use the specification below.
* Each student writes an individual report (~400 words) summarising:

(1) contributions to the project

(2) new features learnt from developing the 3D game,

(3) current issues (e.g. bugs, errors).

* Upload before **TBD**

**Specifications**

1. Player and NPCs are spheres of varying sizes.
2. Game area should have boundaries.
3. Start game with player in the centre. Player can be moved around to absorb smaller spheres.
4. Populate the game with 15 NPC spheres. The spheres should all be moving slowly in random directions in one plane.
5. Player and other spheres are rigidbodies with sphere colliders.
6. When the spheres hit the wall, they should bounce back.

<https://docs.unity3d.com/Manual/class-PhysicMaterial.html>

1. When 2 spheres (e.g. NPC and player) collide, the smaller one disappears and the larger one proportionately grows in [mass](https://docs.unity3d.com/ScriptReference/Rigidbody-mass.html) and [size](https://docs.unity3d.com/ScriptReference/Transform-localScale.html).
2. Whenever player changes direction or speed (i.e. whenever a player control key is pressed), the player should lose a bit of mass and size.
3. Spheres of certain size range should have common colour or texture. Colour/texture changes according to size.
4. Score text is updated. Added score depends on the size of the absorbed sphere.
5. Player loses and game over if absorbed by another sphere.
6. Player wins and game over if it eats all spheres.
7. The gameplay should have medium difficulty i.e. not too easy, not impossible.

**Marking Scheme**

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| --- | --- | --- |
|  | **Score** |  |
| **Functional Features** | **75** | Game functionality based on the specification  Free from code errors or bugs |
| **Documentation and version control** | **15** | Lab report  Code structure and documentation  Organised directory structure of the project and github repository |
| **Collaboration** | **10** | Group communication, equal contribution, common problem solving. |
| **Total** | **100** | **……………………………** |