

# Assignment 1 -- Ballboy UML

2021/9/12

MISSING

5 Possible Points

Attempt 1



REVIEW FEEDBACK

Offline Score:  
N/A



View Feedback

## Unlimited Attempts Allowed

2021/8/19

### Details

#### Problem Overview

You are required to design and implement an application model for a classic shoot 'em up video game **Ballboy** in three stages. The video game consists of a character on the screen that bounces up and down, can move left and right, and has the ability to modify how high they bounce. There will also be a json configuration file that will be read to specify initial behaviour.

**In later stages**, the character will interact with the world. There will be a floor to bounce on, obstacles to interact with (bounce, hit, etc), enemies to avoid, and a way to maintain a score. The levels of the game may have different behaviours such as allowing Ballboy to temporarily be able to hover rather than bounce, or have a companion ball that can damage enemies. **These features from the later stages are not part of Assignment 1, but you should consider whether your design could be extended to allow them, or would it need to be completely rewritten.**

You will need to ensure that your application is configurable with a JSON text file, allowing configuration of at least the main character's size, start position, and background cloud velocity. You are given an example JSON file format [here \(https://canvas.svdnev.edu.au/courses/36379/files/19057268/download\)](https://canvas.svdnev.edu.au/courses/36379/files/19057268/download) that

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Q: What is a classic "shoot 'em up" video game?

A: The most relevant example: <https://www.youtube.com/watch?v=n4Vpeoaw6g4> (<https://youtu.be/xxhP6vD3unY>)

## **Assignment 1 Requirement**

In assignment 1, your Ballboy game is very simple, and is only expected to support the following features during your design:

- Background objects (clouds) must move at a constant speed and your Ballboy must be able to bounce around the stage.
- The Ballboy can be created in three sizes which are defined within your configuration file. The size of the Ballboy is specified as a string whose options are small, medium. and large.
- Ballboy's starting position is specified as an x and y coordinate

Produce the Ballboy game UML class diagram to visualise the design of your application and provide a rationale to your design decisions according to OO theory (e.g., Abstraction, Encapsulation, Inheritance and Polymorphism) and design principles (e.g., SOLID and GRASP). In the diagram, you are required to show important attributes, methods, classes, interfaces and associations. A codebase is provided to you [here](#)

(<https://canvas.sydney.edu.au/courses/36379/files/19057240/download>), based on which you can start your UML design.

*How to get started?*

- Review the code you have been given. Understand how it fits together, and in particular look at the *interfaces* you have been given in the package ballboy.model. Your primary job will be to design classes (that handle the data behind the GUI) that implement these interfaces. You are not required to change anything in the view package at this stage.

In case any of you are interested in more resources, a sample [build.gradle file](#) (<https://canvas.sydney.edu.au/courses/36379/files/19057255/download>) has also been provided here. However you are not required to do any code

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## Submission Details

You are required to submit all three assessment items by the due date listed on Canvas.

- **UML class diagram.** Submit your UML class diagram as a single pdf document on this portal. You can use any UML tool of your choice to create the required UML diagrams. You may utilise UML notations (e.g., UML note, stereotypes) to clarify some of the important implicit decisions you have made into your models.
- **Report.** You are allowed a maximum of 1000 words in your report which must concisely provide a rationale to your design according to OO theory and design principles.
- **Presentation video.** [Submitted separately](https://canvas.sydney.edu.au/courses/36379/assignments/317024) (<https://canvas.sydney.edu.au/courses/36379/assignments/317024>). You will summarise and present your design decision on your UML class diagram in a video. The maximum video length is 5 minutes.
- This video is used for you to summarise and present **your design decision on your UML class diagram**
- The **maximum video length is 5 minutes** and no specific requirement on the video resolution. All content beyond 5 minutes will be ignored by your marker.
- The video **must show the face of the presenter** while the presentation content is delivered.

## Academic honesty

While the University is aware that the vast majority of students and staff act ethically and honestly, it is opposed to and will not tolerate academic dishonesty or plagiarism and will treat all allegations of dishonesty seriously.

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Further information on academic honesty, academic dishonesty, and the resources available to all students can be found on the academic integrity pages on the current students website: <https://sydney.edu.au/students/academic-integrity.html> (<https://sydney.edu.au/students/academic-integrity.html>).

Further information for on research integrity and ethics for postgraduate research students and students undertaking research-focussed coursework such as Honours and capstone research projects can be also be found on the current students website: <https://sydney.edu.au/students/research-integrity-ethics.html> (<https://sydney.edu.au/students/research-integrity-ethics.html>).

## Compliance statement

In submitting this work, I acknowledge I have understood the following:

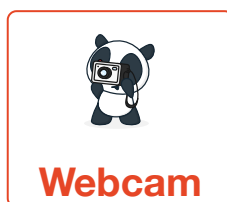
- I have read and understood the University of Sydney's [Academic Honesty in Coursework Policy 2015](https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0) (<https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0>).
- The work is substantially my own and where any parts of this work are not my own I have indicated this by acknowledging the source of those parts of the work and enclosed any quoted text in quotation marks.
- The work has not previously been submitted in part or in full for assessment in another unit unless I have been given permission by my unit of study coordinator to do so.
- The work will be submitted to similarity detection software (Turnitin) and a copy of the work will be retained in Turnitin's paper repository for future similarity checking. Note: work submitted by postgraduate research students for research purposes is not added to Turnitin's paper repository.
- Engaging in plagiarism or academic dishonesty in coursework will, if detected, lead to the University commencing proceedings under the [Academic Honesty in Coursework Policy 2015](https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0) (<https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0>) and the [Academic Honesty Procedures 2016](http://sydney.edu.au/policies/default.aspx?) (<http://sydney.edu.au/policies/default.aspx?>

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- Engaging in plagiarism or academic dishonesty in research-focussed work will lead to the University commencing proceedings under the [Research Code of Conduct 2013](https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2013/321&RendNum=0) (<https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2013/321&RendNum=0>) and the [Academic Honesty Procedures 2016](http://sydney.edu.au/policies/default.aspx?mode=glossary&word=Academic+honesty) (<http://sydney.edu.au/policies/default.aspx?mode=glossary&word=Academic+honesty>)\_.
- Engaging another person to complete part or all of the submitted work will, if detected, lead to the University commencing proceedings against me for potential student misconduct under the [University of Sydney \(Student Discipline\) Rule 2016](http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2017/441&RendNum=0) (<http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2017/441&RendNum=0>)\_.

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