

## Tutorial - Serialization

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In this exercise you will learn more about C# XML Serialization and how to use it to save and load objects in your games. Note that serialization is part of your assessment.

### Introduction:

XML serialization provides with an easy and convenient way to save and load game data in our applications. XML file data is human readable and is very easy to edit with a text editor. There are many points in your game where you might like to serialize data, for example:

- Save Game Data:
  - Can your player reach certain points within the game? Consider saving to file all the required information to resume a saved game state
- Player profiles
  - User profile information can be saved to allow users to create their own profile and have their progress throughout the game tracked. It could be as something as simple as tracking what levels the player has completed and displaying a gold star on the UI
- Options data
  - Information such as sound levels, resolution and graphics options are a common thing to serialize out to a file
- Custom Level Editor
  - How is your data for levels stored? Consider making a level editor and storing out your level data so your players can easily make custom levels for your game

Think about what type of data you need for your assessment as you will be saving out to XML for that and begin to plan for it. There are a couple of things you need to remember about XML serialization:

1. The class needs to be public, otherwise it won't be able to be serialized
2. Only public members and properties will be serialized

### Exercise:

Create a test console application with only the relevant classes and structures required for saving and loading, using the code from the slides as an example. Populate your classes with dummy / testing information. Save and load from XML and check to see if your data is coming back in properly. Try editing some of the fields to confirm that you can edit them easily in a text editor. Next, begin to work on your assessment, creating the necessary classes that will need to be serialized.