

Memory Layout

1. Introduction

This tutorial introduces the considerations that are required for the layout of data in memory.

The best memory layout must be used in your ACW and documented in the appropriate ACW report.

2. Setting up the Windows project

Download the accompanying file '600098-Memory_Layout.zip' and unzip it into a convenient area on your file store. Double click on the solution file to start Visual Studio and load the solution file.

3. How it works: Program.cs

The **Program** class contains all of the source code. This class defines a **struct** that contains different types.

4. Exercises

1. Review the code until you understand what is happening.
2. Optimize the memory layout for the given **struct**.
3. Add a **Vector3** to the struct and make sure that you place it to optimize the memory layout (you may want to find out the size of **Vector3** first). Also add an appropriate **Console.WriteLine()** for the output of this **Vector3**.
4. Add a **Matrix4** to the **struct** and make sure that you place it to optimize the memory layout (you may want to find out the size of **Matrix4** first). Also add an appropriate **Console.WriteLine()** for the output of this **Matrix4**.
5. Try adding different data types and optimise the memory layout.
6. Discuss your findings with Darren.