# Technical Solution

## Programming Techniques Table

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| **Technique** | | | **Group** | **Example Code Snippet** | **File** | **Line Number** | **Page number** |
| Inheritance | | | A | Public Class Corner  Inherits Block  ...  End Class | Corner.vb |  |  |
| Aggregation | | | A | Public MustInherit Class Block  ...  Private \_position As New Vector3x1()  ...  End Class | Block.vb |  |  |
| Overriding Polymorphism | | | A | Public MustInherit Class Block  ...  Public MustOverride Function HasColour(ByVal colour As FaceColour) As Boolean  ...  End Class  Public Class Corner  Inherits Block  ...  Public Overrides Function HasColour(colour As FaceColour) As Boolean  For col = 0 To 2  If Colours(col) = colour Then Return True  Next  Return False  End Function  ...  End Class | Corner.vb |  |  |
| Overloading Polymorphism | | | A | Public Function Copy(Of T)(ByVal array() As T) As T()  Dim copyArray(array.Length - 1) As T  For i = 0 To array.Length - 1  copyArray(i) = array(i)  Next  Return copyArray  End Function  Public Function Copy(Of T)(ByVal queue As Queue(Of T)) As Queue(Of T)  Dim copyQueue As New Queue(Of T)  Dim numberOfElements As Integer = queue.Count  For i = 0 To numberOfElements - 1  copyQueue.Enqueue(queue.ElementAt(i))  Next  Return copyQueue  End Function | Array Methods.vb |  |  |
| Binary Serialisation | | | ? |  |  |  |  |
| Matrix Operations | | | A |  |  |  |  |
| Vector Operations | | | ? |  |  |  |  |
| Quaternion Arithmetic | | | ? |  |  |  |  |
| Shader Based Open GL | | | A |  |  |  |  |
| Custom Exception Types | | | ? |  |  |  |  |
| Complex User Defined Algorithms: | | | A |  |  |  |  |
| * Top Layer Solver | | |  |  |  |  |
| * Middle Layer Solver | | |  |  |  |  |
| * Bottom Layer Solver | | |  |  |  |  |
| * Rotating the whole cube (when solving) | | |  |  |  |  |
| * Rotating one face of the cube (when solving) | | |  |  |  |  |
| Simple User Defined Algorithms: | | B | |  |  |  |  |
| * Optimising Instructions |  | |  |  |  |  |
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