Question 1

图形用户界面, 文本

描述已自动生成

Answer

According to the format above

AInterpolatorVec3 //base class

ALinearInterpolatorVec3 //ChildClass1

ACubicInterpolatorVec3 //ChildClass2

ABernsteinInterpolatorVec3 //GrandchildClass1

ACasteljauInterpolatorVec3 //GrandchildClass2

AMatrixInterpolatorVec3 //GrandchildClass3

AHermiteInterpolatorVec3 //GrandchildClass4

ABSplineInterpolatorVec3 //GrandchildClass5

AEulerCubicInterpolatorVec3 //GrandchildClass6

AEulerLinearInterpolatorVec3 //ChildClass3

Question 2



The function initially inherits from the virtual function of

AInterpolatorVec3::interpolateSegment (

const std::vector<ASplineVec3::Key>& keys,

const std::vector<vec3>& ctrlPoints,

int segment, double u)

which using given keys, control points, current segment start index, and the time, compute an interpolated value. Then it passes to the child class ACubicInterpolatorVec3 and to its grandchild class ABernsteinInterpolatorVec3.

In the specific case of a child class defined function, ABernsteinInterpolatorVec3:: interpolateSegment(), it uses the input elements defined above to

1. Get 4 control points from the ctrlPoints vector
2. Then compute the interpolated value f(u) point using Bernstein polynomials, and return the result as a vec3 datatype