C4X - 4Sight Unreal Developer: Coding Test

Brief:

The goal of this test is to demonstrate the applicant's coding skill in both blueprints and c++ by meeting the specifications set out in this document to create a rudimentary molecule viewer. The resulting code will then be assessed and discussed as part of the interview process.

Timescale:

The candidate will have two weeks from the date of issue (22/10/21) to complete this test.

Specificions:

- C++ project with blueprints in UE4.26.
- A basic UMG interface to browse a content folder containing the provided SDF files.
- Ability to Select and Read the SDF files provided from the PC file system, then load data of the sample molecule from the selected file.
  (SDF reading **must** be handled by a C++ function)
- Use loaded SDF data to spawn a molecule in the world.
- Add meshes for the atoms in the correct location for the atoms in relation to the created molecule.
- Colour the atom meshes in relation to the atom's atom type.
- Loading a new SDF will delete any existing loaded molecules in the world.
- Have the ability to interact with atoms spawned on the molecule.
- Camera must be free to explore the world.
- Project must be packaged as a standalone windows application.
- All code and relevant Unreal project files should be submitted to be reviewed and allow the project to be rebuilt at C4X

Note: this is a coding test - interface design/artistic skill are not vital to the test, clear legible code and blueprints along with stability are the criteria that the submission will be judged on.

Notes:

SDF file format specification
https://en.wikipedia.org/wiki/Chemical_table_file

2 SDF file examples:
Paracetamol.sdf, AdenosineTriphosphate.sdf