Text

Description automatically generated

-original

Text

Description automatically generated

-remove unnecessary work from render()

A computer screen capture

Description automatically generated with medium confidence

-remove unnecessary work from trace() by introducing reflection and transparency check.

A computer screen capture

Description automatically generated with medium confidence

-attempt to optimize through a memory pool – dereferencing pointers and calling deconstructors is slowing the program down. Change implementation so that the memory pool holds a std::vector, and instead of deconstructing the object, it will change their pointer to nullptr.

Text

Description automatically generated

-after deconstructors were removed, better but still slower.