CREST CAChE: Everglades Educational Virtual Reality Experience

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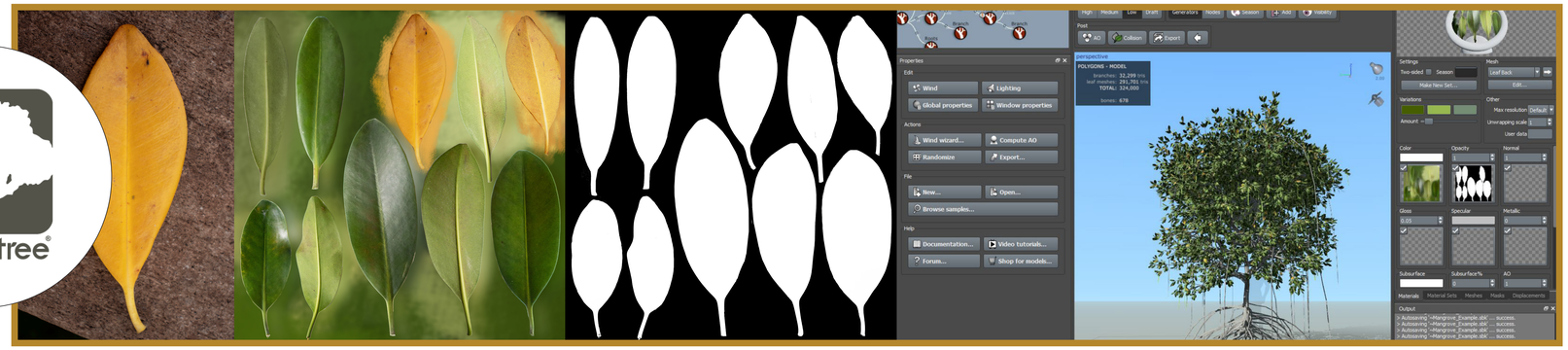
Goals:

Develop an educational virtual reality application utilizing collected data and turning it into a fully immersive VR experience:

-This VR experience will serve as an educational medium that will offer knowledge through interactive media.
-The application will host information on mangroves and their influence on the Everglades.
-Showing what is not normally seen by the human eye, the Everglades throughout the years and what goes on underground.
-The application will also display variances of mangroves from east to west, showing why and how they differ.

Research Methodology:

-This requires utilizing dynamic and procedurally generated vegetation models for use within the application and creating a user-friendly procedurally generated environment.
-Using photo textures from real mangrove trees to UV map and model them. Then readying these assets with wind displacements, and level of detail (LODs) variants.
-Within Unreal Engine HDRI textures, dynamic lighting, procedural foliage instancing and custom blueprints are used to generate the environment.
-A virtual reality UI is then used to allow user interaction during the experience.



Results:

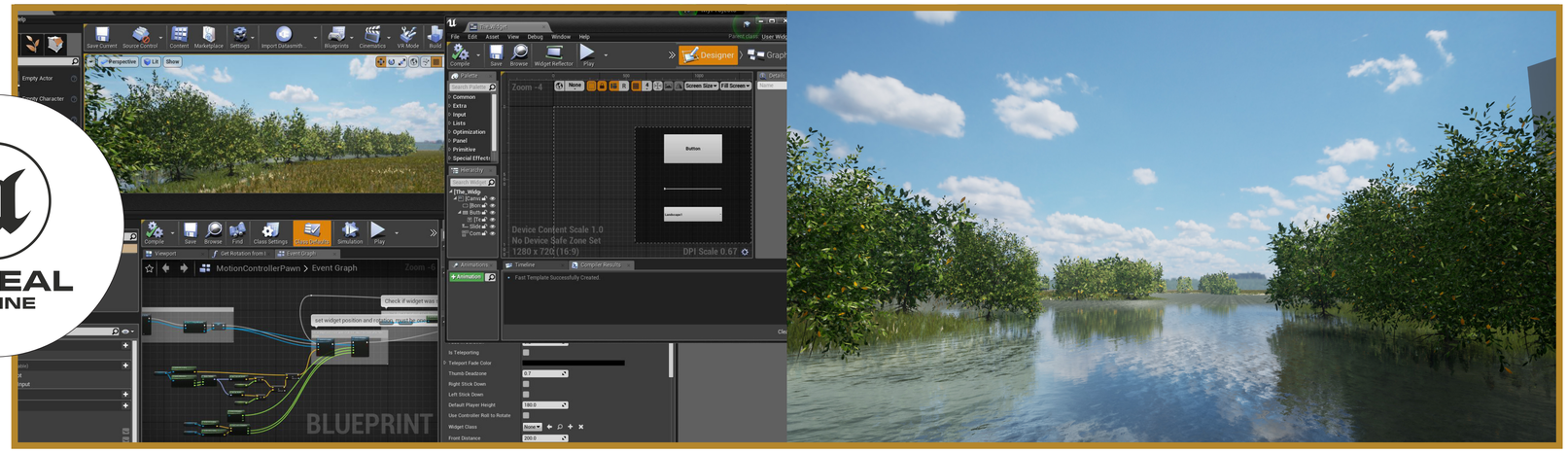
-Currently the procedural environment has been created and can be manipulated based on user input.

-Several assets and materials used within the application have also been created.

-The collected data needs to be assessed to maintain a level of accuracy.

-Other modes and information still need to be applied/created.

-The user interface needs to work better and smoother based on users input.



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