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DESIGN AS A KEY ELEMENT IN CREATION OF 3D CHARACTERS FOR COMPUTER GAMES

The design is an important part of creation of the 3D character for any game. This is a field where the production depends on art, program, anatomy skills, and they all intertwined. There are two possible variants of making the character: using the already drawn 2D-concept or making your own model referring to the references.

The common thing for 2D stylized character concepts is exaggeration, as it helps to give more relevance to parts of the character. Increasing the arms can give us an idea about the muscle and strength. After choosing the concept, 3D artists start modelling the character from the first step – blocking. 3D-characters are consisted of polygons (squares) making the topology. On the blocking stage artists create the block of basic shape of the body, face, clothes and weapon if it is needed. It is principal to have at least an art knowledge to create the character proportional and all elements will be compatible.

Finished the draft of character, we will be increasing the details of all elements and make it more realistic. This process named sculpting or high-poly, as it requires the usage of big number of polygons, and it is similar to real clay. It is necessary to use a graphic tablet in the 3D program for best results and fast work. The most famous program for this stage – Zbrush.

Going throws the modelling processes, next one is optimising the topology of high-poly character. As the file weight of the main sculpt is might be enormous, it can lead to a crash of any program. So, it is compulsory to make a retopology – remake the topology of previous character by organising polygons logically, thereby

it will be qualified for animation. The complete matching of the mesh with the high-poly is the key for qualitative results for the next part of creation. Using the low-poly we need to color the model, so the next step is the UV-mapping – process of placing a 2D texture on a 3D mesh. We make UV-coordinate cutting the model into separate shells accurately. As it does not consist of any details after retopology baking maps are transferring features from high-poly to low-poly via Normal Map. Texturing is the last and the most interesting part of modelling processes. At this stage 3D artist adding colours to the mesh using special programs: Substance Painter/Designer, 3DCoat, Zbrush, Mari, Photoshop etc. Some details can be added on the texture except of modelling it.

Created the 3D character the model goes to the rigging stage – adding a skeletal structure for the future animation, and it is obligatory to follow real body mechanisms. There are ways to create automatically, but the manual rigging will have better quality and fewer problems. The animation is the final step in the character creation process. At this stage animators making characters moving and getting facial expressions using rigged mesh.

The creation of 3D character for games can take from 1 till 6 months depending on the complexity and the pending results. The knowledge of art is an advantage of learning 3D-modelling of characters and making textures.

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