VkPipelineInputAssemblyStateCreateInfo for VkGraphicsPipelineCreateInfo

```
typedef enum VkPrimitiveTopology {
    VK_PRIMITIVE_TOPOLOGY_POINT_LIST = 0,
    VK_PRIMITIVE_TOPOLOGY_LINE_LIST = 1,
    VK_PRIMITIVE_TOPOLOGY_LINE_STRIP = 2,
    VK_PRIMITIVE_TOPOLOGY_TRIANGLE_LIST = 3,
    VK_PRIMITIVE_TOPOLOGY_TRIANGLE_STRIP = 4,
    VK_PRIMITIVE_TOPOLOGY_TRIANGLE_FAN = 5,
    VK_PRIMITIVE_TOPOLOGY_LINE_LIST_WITH_ADJACENCY = 6,
    VK_PRIMITIVE_TOPOLOGY_LINE_STRIP_WITH_ADJACENCY = 7,
    VK_PRIMITIVE_TOPOLOGY_TRIANGLE_LIST_WITH_ADJACENCY = 8,
    VK_PRIMITIVE_TOPOLOGY_TRIANGLE_STRIP_WITH_ADJACENCY = 9,
    VK_PRIMITIVE_TOPOLOGY_PATCH_LIST = 10,
} VkPrimitiveTopology;
```

```
VkPipelineInputAssemblyStateCreateInfo
sType = VK_STRUCTURE_TYPE_PIPELINE_INPUT_ASSEMBLY_STATE_CREATE_INFO;
pNext = nullptr;
flags = 0;
topology;
primitiveRestartEnable = VK_FALSE; // used for triangle strips etc.
```

VkPipelineTessellationStateCreateInfo for VkGraphicsPipelineCreateInfo

```
VkPipelineTessellationStateCreateInfo
sType = VK_STRUCTURE_TYPE_PIPELINE_TESSELLATION_STATE_CREATE_INFO;
pNext = nullptr;
flags = 0;
patchControlPoints; // number of control points per patch
```

VkPipelineViewportStateCreateInfo for VkGraphicsPipelineCreateInfo

```
// Y-down coordinate system.
typedef struct VkViewport {
    float    x;// left
    float    y;// top
    float    width;
    float    height;
    float    minDepth = 0.0;
    float    maxDepth = 1.0;
} VkViewport;
```

```
VkPipelineViewportStateCreateInfo
sType = VK_STRUCTURE_TYPE_PIPELINE_VIEWPORT_STATE_CREATE_INFO;
pNext = nullptr;
flags = 0;
viewportCount = 1;
pViewports;
scissorCount = 1;
const VkRect2D* pScissors;
```

VkPipelineRasterizationStateCreateInfo for VkGraphicsPipelineCreateInfo

```
VkPipelineRasterizationStateCreateInfo
sType = VK_STRUCTURE_TYPE_PIPELINE_RASTERIZATION_STATE_CREATE_INFO;
pNext = nullptr;
flags = 0;
depthClampEnable; // usually VK_FALSE, for shadow mapping VK_TRUE
rasterizerDiscardEnable = VK_FALSE;
polygonMode = VK_POLYGON_MODE_FILL, VK_POLYGON_MODE_LINE, or VK_POLYGON_MODE_POINT.
cullMode VK_CULL_MODE_BACK_BIT;
frontFace = VK_FRONT_FACE_COUNTER_CLOCKWISE;
depthBiasEnable = VK_FALSE;
depthBiasConstantFactor = 0.0;
depthBiasClamp = 0.0;
depthBiasSlopeFactor = 0.0;
lineWidth = 1.0;
```