Advanced CNN Design Questions

Q1 Find the number of trainable and non trainable parameters

Sr	Layer/Block	Repeat
1	Input Layer: 224x224x3	
2	Conv Layer: 32 Kernels 11x11 Kernel size Strides 2 Padding same Activation Relu	1
3	Maxpooling: Size 3x3 Strides 2 Padding same	1
4	Inception Module 1x1 Filters: 64 3x3 Reduce Filters: 96 3x3 Filters: 128 5x5 Reduce Filters: 16 5x5 Filters: 32 Pooling Projection Filters: 32	1
5	Inception Module 1x1 Filters: 364 3x3 Reduce Filters: 192 3x3 Filters: 364 5x5 Reduce Filters: 48 5x5 Filters: 128 Pooling Projection Filters: 128	1
6	Global Average Pooling	1
7	Output Layer 10 Neurons Softmax	1

Q2 Find the number of trainable and non trainable parameters

Sr	Layer/Block	Repeat
1	Input Layer: 227x227x3	
2	Conv Layer: 32 Kernels 7x7 Kernel size Strides 1 Padding same Activation Relu	1
3	Maxpooling: Size 3x3 Strides 2 Padding same	1
4	Inception Module 1x1 Filters: 64 3x3 Reduce Filters: 96 3x3 Filters: 128 5x5 Reduce Filters: 16 5x5 Filters: 32 Pooling Projection Filters: 32	2
5	Residual Block Kernel Size: 3x3 Filters: [64,64,128] Strides: 1	2
6	Flatten	1
7	Dense 1024 Activation ReLU	1
8	Dense 512 Activation Relu	1
9	Output Layer 10 Neurons Softmax	1

Q3 Find the number of trainable and non trainable parameters

Sr	Layer/Block	Repeat
1	Input Layer: 227x227x3	
2	Conv Layer: 32 Kernels 7x7 Kernel size Strides 1 Padding same	1

	Activation Relu	
3	Maxpooling: Size 3x3 Strides 2 Padding same	1
4	Residual Block Kernel Size: 3x3 Filters: [64,64,128] Strides: 1	2
5	Inception Module 1x1 Filters: 64 3x3 Reduce Filters: 96 3x3 Filters: 128 5x5 Reduce Filters: 16 5x5 Filters: 32 Pooling Projection Filters: 32	2
6	Flatten	1
7	Dense 512 Activation ReLU	1
8	Dense 1024 Activation Relu	1
9	Output Layer 10 Neurons Softmax	1

Q4 Find the number of trainable and non trainable parameters

Sr	**Layer/Block**	**Repeat**
1	Input Layer: 227x227x3	
2	Conv Layer: 32 Kernels 3x3 Kernel size Strides 2 Padding same BatchNormalization Activation Relu	1
3	Mobilenet Block 64 Kernels 3x3 Kernel Size Strides 1	1
4	Mobilenet Block	1

	64 Kernels 3x3 Kernel Size Strides 1	
5	Inception Module 1x1 Filters: 160 3x3 Reduce Filters: 112 3x3 Filters: 224 5x5 Reduce Filters: 24 5x5 Filters: 64 Pooling Projection Filters: 64	1
6	Inception Module 1x1 Filters: 128 3x3 Reduce Filters: 128 3x3 Filters: 256 5x5 Reduce Filters: 24 5x5 Filters: 64 Pooling Projection Filters: 64	1
7	Aux GlobalAveragePooling	1
8	Aux Dropout 0.4	1
9	Aux output: 10 Softmax	1
8	Inception Module 1x1 Filters: 256 3x3 Reduce Filters: 160 3x3 Filters: 320 5x5 Reduce Filters: 32 5x5 Filters: 128 Pooling Projection Filters: 128	1
9	Inception Module 1x1 Filters: 384 3x3 Reduce Filters: 192 3x3 Filters: 384 5x5 Reduce Filters: 48 5x5 Filters: 128 Pooling Projection Filters: 128	1
10	GlobalAveragePooling	1
11	Dropout 0.4	1
12	Output 10 Softmax	1