Recap & Lab Assignment 4

CMPUT 328 Visual Recognition

Attention Mechanism

$$\text{Attention}(Q, K, V) = \text{softmax}(\frac{QK^T}{\sqrt{d_k}})V$$

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Key			
1	-0.2	0.1	-2
0.7	0.3	-1.1	0.2
-1.1	0.1	0.3	1.1

Value		
220	35	7
40	107	50
0	0	127

Attention Mechanism

$$\text{Attention}(Q, K, V) = \text{softmax}(\frac{QK^T}{\sqrt{d_k}})V$$

Query:

0.6	0.2	-0.7	0.3

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Query:

0.6	0.2	-0.7	0.3

“color of the environment”

Key			
1	-0.2	0.1	-2
0.7	0.3	-1.1	0.2
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0.6	0.2	-0.7	0.3

“color of the environment”

Key				
1	-0.2	0.1	-2	“dog”
0.7	0.3	-1.1	0.2	“forest”
-1.1	0.1	0.3	1.1	“sky”

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-1.1	0.1	0.3	1.1

QK^T
-0.11
1.31
-0.52

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0	0	127

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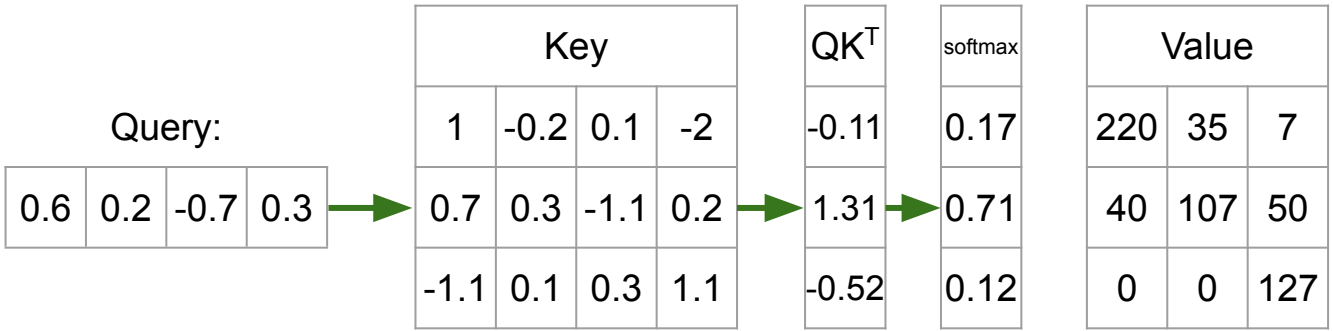

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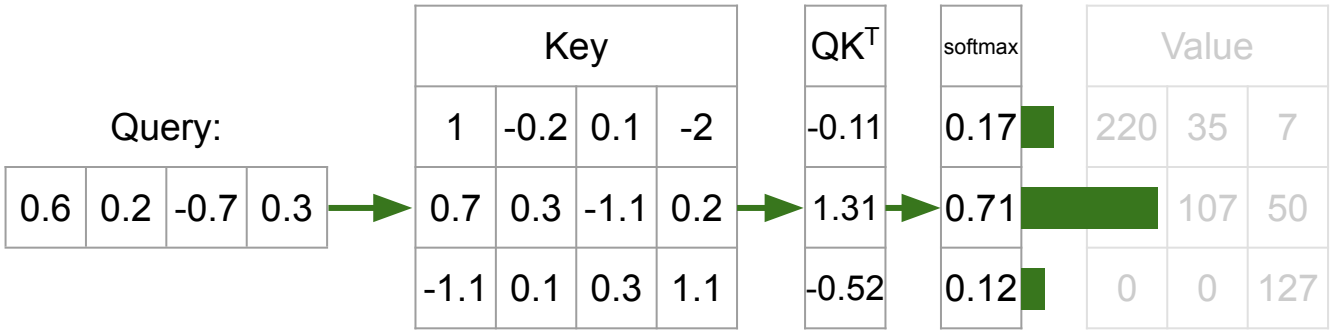

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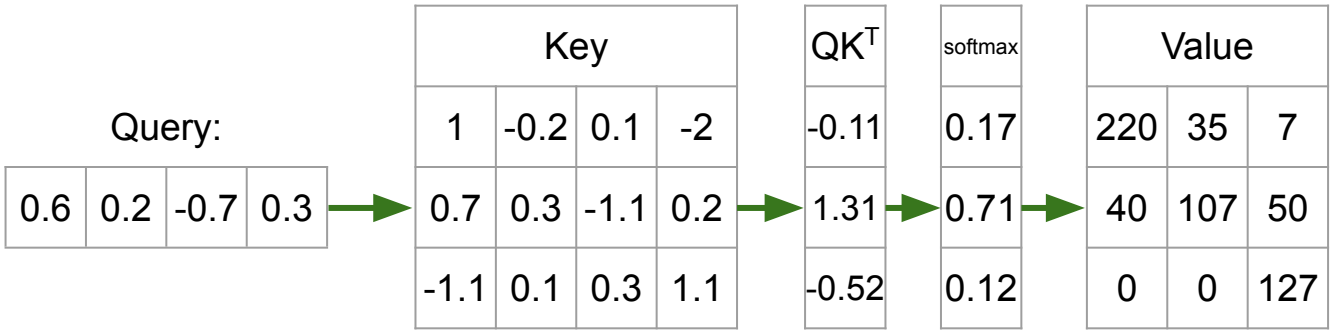

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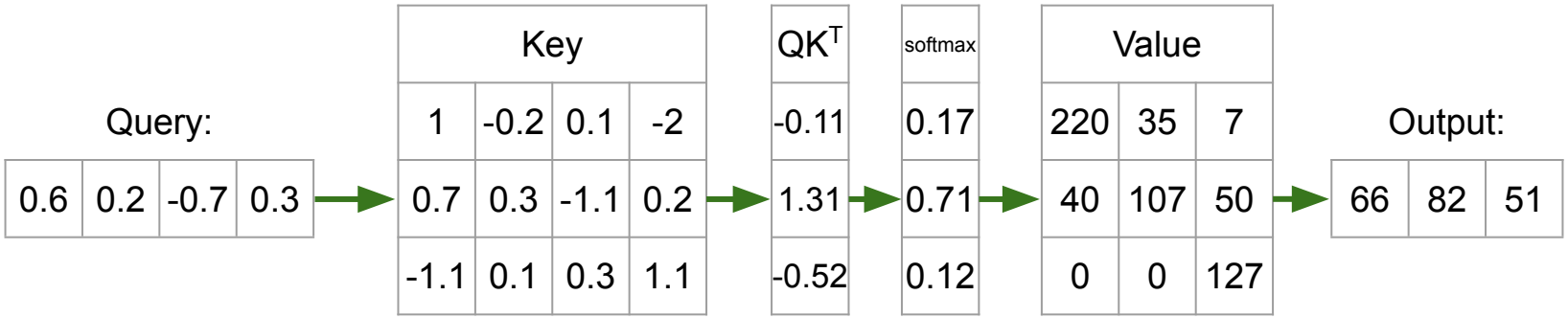

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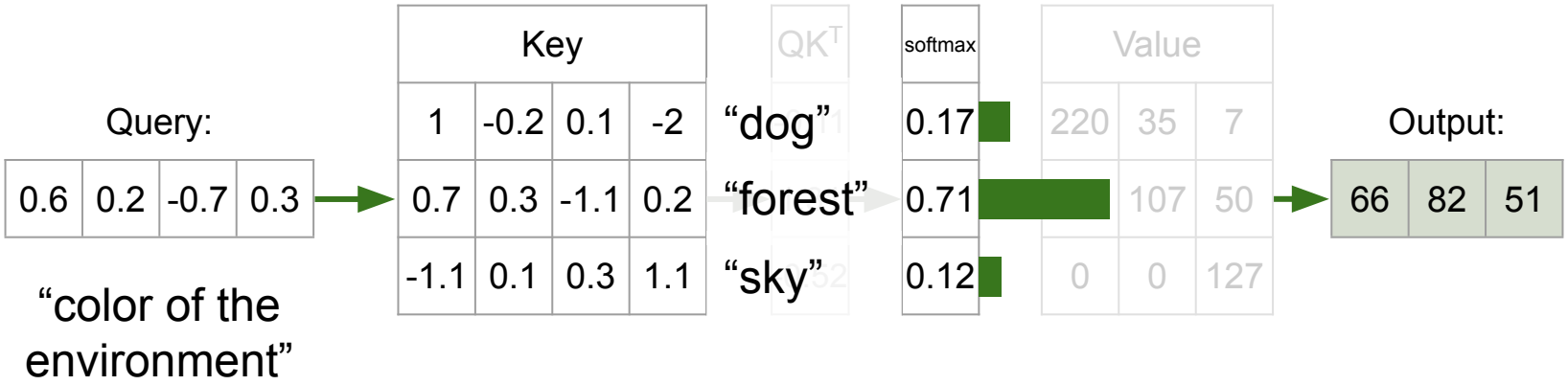

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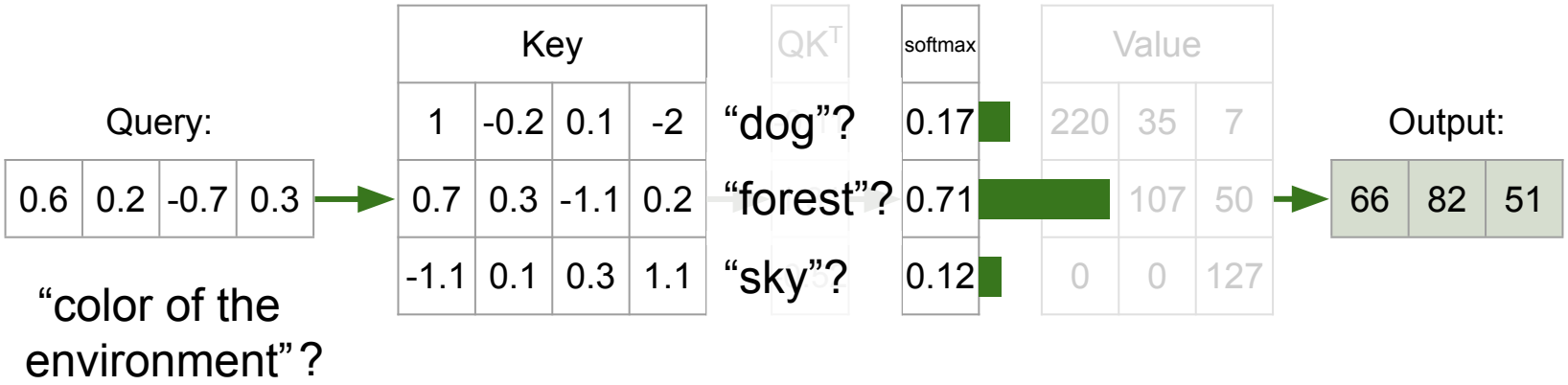

Lab Assignment 4

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- Implement and train a Vision Transformer

- LoRA finetuning