✅ Freeing up disk space...

✅ Loading Dataset...

✅ Loading Annotations JSON...

Generating train split: 180000 examples [00:00, 366938.43 examples/s]

Map: 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 180000/180000 [00:02<00:00, 65150.57 examples/s]

✅ Selecting 20k from category: credit\_card

Filter: 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 180000/180000 [00:00<00:00, 402641.16 examples/s]

✅ Selecting 20k from category: medical\_letter

Filter: 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 180000/180000 [00:00<00:00, 431270.94 examples/s]

✅ Selecting 20k from category: phone\_bills

Filter: 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 180000/180000 [00:00<00:00, 422181.38 examples/s]

✅ Selecting 20k from category: pin\_code

Filter: 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 180000/180000 [00:00<00:00, 435832.97 examples/s]

✅ Balanced Dataset Loaded. Training: 72000, Validation: 8000

✅ Loading BLIP Processor...

preprocessor\_config.json: 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 287/287 [00:00<?, ?B/s]

C:\Users\yuval\Desktop\Code\PyCharm Code Projects\synthetic-dataset-generator\.venv\Lib\site-packages\huggingface\_hub\file\_download.py:140: UserWarning: `huggingface\_hub` cache-system uses symlinks by default to efficiently store duplicated files but your machine does not support them in C:\Users\yuval\.cache\huggingface\hub\models--Salesforce--blip-image-captioning-base. Caching files will still work but in a degraded version that might require more space on your disk. This warning can be disabled by setting the `HF\_HUB\_DISABLE\_SYMLINKS\_WARNING` environment variable. For more details, see https://huggingface.co/docs/huggingface\_hub/how-to-cache#limitations.

To support symlinks on Windows, you either need to activate Developer Mode or to run Python as an administrator. In order to activate developer mode, see this article: https://docs.microsoft.com/en-us/windows/apps/get-started/enable-your-device-for-development

warnings.warn(message)

tokenizer\_config.json: 100%|███████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 506/506 [00:00<?, ?B/s]

vocab.txt: 100%|██████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 232k/232k [00:00<00:00, 903kB/s]

tokenizer.json: 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 711k/711k [00:00<00:00, 1.62MB/s]

special\_tokens\_map.json: 100%|█████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 125/125 [00:00<?, ?B/s]

✅ Preprocessing Dataset (This will take time once)...

Map: 100%|█████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 72000/72000 [16:49<00:00, 71.32 examples/s]

Map: 100%|███████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 8000/8000 [01:51<00:00, 71.90 examples/s]

Saving the dataset (256/256 shards): 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 72000/72000 [04:04<00:00, 294.44 examples/s]

Saving the dataset (29/29 shards): 100%|████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 8000/8000 [00:30<00:00, 266.38 examples/s]

✅ Preprocessed Dataset Saved for Future Runs.

✅ Loading BLIP Model & Applying LoRA...

config.json: 100%|█████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 4.56k/4.56k [00:00<?, ?B/s]

pytorch\_model.bin: 100%|█████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 990M/990M [00:33<00:00, 29.3MB/s]

The installed version of bitsandbytes was compiled without GPU support. 8-bit optimizers, 8-bit multiplication, and GPU quantization are unavailable.

trainable params: 737,280 || all params: 248,151,356 || trainable%: 0.2971

✅ Defining Training Arguments...

C:\Users\yuval\Desktop\Code\PyCharm Code Projects\synthetic-dataset-generator\.venv\Lib\site-packages\transformers\training\_args.py:1575: FutureWarning: `evaluation\_strategy` is deprecated and will be removed in version 4.46 of 🤗 Transformers. Use `eval\_strategy` instead

warnings.warn(

✅ Initializing Trainer...

C:\Users\yuval\Desktop\Code\PyCharm Code Projects\synthetic-dataset-generator\updated\_scripts\train\_BLIP\_with\_LoRA\_smaller\_batches.py:115: FutureWarning: `tokenizer` is deprecated and will be removed in version 5.0.0 for `Trainer.\_\_init\_\_`. Use `processing\_class` instead.

trainer = Trainer(

🚀 Starting Fine-Tuning...

0%| | 0/54000 [00:00<?, ?it/s]T

he cache for model files in Transformers v4.22.0 has been updated. Migrating your old cache. This is a one-time only operation. You can interrupt this and resume the migration later on by calling `transformers.utils.move\_cache()`.

0it [00:00, ?it/s]

model.safetensors: 100%|█████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 990M/990M [00:35<00:00, 27.7MB/s]

C:\Users\yuval\Desktop\Code\PyCharm Code Projects\synthetic-dataset-generator\.venv\Lib\site-packages\huggingface\_hub\file\_download.py:140: UserWarning: `huggingface\_hub` cache-system uses symlinks by

default to efficiently store duplicated files but your machine does not support them in C:\Users\yuval\.cache\huggingface\hub\models--Salesforce--blip-image-captioning-base. Caching files will still wo

rk but in a degraded version that might require more space on your disk. This warning can be disabled by setting the `HF\_HUB\_DISABLE\_SYMLINKS\_WARNING` environment variable. For more details, see https://huggingface.co/docs/huggingface\_hub/how-to-cache#limitations.

To support symlinks on Windows, you either need to activate Developer Mode or to run Python as an administrator. In order to activate developer mode, see this article: https://docs.microsoft.com/en-us/windows/apps/get-started/enable-your-device-for-development

warnings.warn(message)

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{'loss': 5.2815, 'grad\_norm': 13.603413581848145, 'learning\_rate': 4.675925925925926e-05, 'epoch': 0.19}

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{'loss': 4.2822, 'grad\_norm': 5.797400951385498, 'learning\_rate': 0.0, 'epoch': 3.0}

{'eval\_runtime': 3925.8331, 'eval\_samples\_per\_second': 2.038, 'eval\_steps\_per\_second': 0.509, 'epoch': 3.0}

{'train\_runtime': 183900.5992, 'train\_samples\_per\_second': 1.175, 'train\_steps\_per\_second': 0.294, 'train\_loss': 4.488479867440683, 'epoch': 3.0}

100%|██████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████████| 54000/54000 [51:05:00<00:00, 3.41s/it]