

```

1 E:\Desktop\000\0000\venv\Scripts\python.exe "D:\
  Bristol course\Data Science Dissertation\ExpBERT lab
  and thesis\BERT-IE-main\BERT-IE-main\fighting_818.py
  "
2 all_data_818
3 len test: 1606
4 len train*val 12042
5 len unxep 2409
6 len train 11199
7 len val 843
8 Downloading data files: 100%|██████████| 1/1 [00:00<
  00:00, 1990.65it/s]
9 Extracting data files: 100%|██████████| 1/1 [00:00<00
  :00, 105.27it/s]
10 Downloading and preparing dataset csv/default to C:/
  Users/admin/.cache/huggingface/datasets/csv/default-
  0b322288075ec4f5/0.0.0/
  6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
  bcc7ec513e1...
11 100%|██████████| 1/1 [00:00<00:00, 86.58it/s]
12 Dataset csv downloaded and prepared to C:/Users/admin
  /.cache/huggingface/datasets/csv/default-
  0b322288075ec4f5/0.0.0/
  6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
  bcc7ec513e1. Subsequent calls will reuse this data.
13 2409
14 torch.Size([2409, 27])
15 Downloading and preparing dataset csv/default to C:/
  Users/admin/.cache/huggingface/datasets/csv/default-
  d54b00f150db9f51/0.0.0/
  6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
  bcc7ec513e1...
16 Downloading data files: 100%|██████████| 1/1 [00:00
  <?, ?it/s]
17 Extracting data files: 100%|██████████| 1/1 [00:00<00
  :00, 124.95it/s]
18 100%|██████████| 1/1 [00:00<00:00, 86.38it/s]
19 Dataset csv downloaded and prepared to C:/Users/admin
  /.cache/huggingface/datasets/csv/default-
  d54b00f150db9f51/0.0.0/
  6954658bab30a358235fa864b05cf819af0e179325c740e4bc853

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19 bcc7ec513e1. Subsequent calls will reuse this data.
20 Downloading data files: 100%|██████████| 1/1 [00:00
   <?, ?it/s]
21 Downloading and preparing dataset csv/default to C:/
   Users/admin/.cache/huggingface/datasets/csv/default-
   e545bec8f0793a1b/0.0.0/
   6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
   bcc7ec513e1...
22 Extracting data files: 100%|██████████| 1/1 [00:00<00
   :00, 150.09it/s]
23 100%|██████████| 1/1 [00:00<00:00, 82.96it/s]
24 Saving the dataset (0/1 shards): 0%|          | 0/
   100440 [00:00<?, ? examples/s]Dataset csv downloaded
   and prepared to C:/Users/admin/.cache/huggingface/
   datasets/csv/default-e545bec8f0793a1b/0.0.0/
   6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
   bcc7ec513e1. Subsequent calls will reuse this data.
25 noexp_df.shape[0] last 2409
26 unexplained dataset length is:
27 2409
28 embedding begin
29 trian and val dataset length: 100440
30 all_data_818
31 all_data_818
32 all_data_818
33 all_data_818
34 all_data_818
35 all_data_818
36 all_data_818
37 all_data_818
38 1116.0
39 ./embeddings/NEW_bertie_embeddings_textattack/bert-
   base-uncased-MNLI_subset_1.pt
40 Downloading and preparing dataset csv/default to C:/
   Users/admin/.cache/huggingface/datasets/csv/default-
   4b7fd490a4c478a5/0.0.0/
   6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
   bcc7ec513e1...
41 Downloading data files: 100%|██████████| 1/1 [00:00
   <?, ?it/s]
42 Extracting data files: 100%|██████████| 1/1 [00:00<00

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42 :00, 999.36it/s]
43 100%|██████████| 1/1 [00:00<00:00, 76.88it/s]
44 Dataset csv downloaded and prepared to C:/Users/admin
/.cache/huggingface/datasets/csv/default-
4b7fd490a4c478a5/0.0.0/
6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
bcc7ec513e1. Subsequent calls will reuse this data.
45 test len 14454
46 Downloading data files: 100%|██████████| 1/1 [00:00
<?, ?it/s]
47 Extracting data files: 100%|██████████| 1/1 [00:00<00
:00, 142.90it/s]
48 Generating train split: 0 examples [00:00, ? examples
/s]Downloading and preparing dataset csv/default to C
:/Users/admin/.cache/huggingface/datasets/csv/default
-2b195236c87ee1ab/0.0.0/
6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
bcc7ec513e1...
49 100%|██████████| 1/1 [00:00<00:00, 66.66it/s]
50 Dataset csv downloaded and prepared to C:/Users/admin
/.cache/huggingface/datasets/csv/default-
2b195236c87ee1ab/0.0.0/
6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
bcc7ec513e1. Subsequent calls will reuse this data.
51 preprocess_samples begin ...
52 uncertainty shape: 1530
53 ./test_embeddings/NEW_bertie_embeddings_textattack/
bert-base-uncased-MNLI_subset_1.pt
54 Downloading and preparing dataset csv/default to C:/
Users/admin/.cache/huggingface/datasets/csv/default-
c9cc4f52981ee210/0.0.0/
6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
bcc7ec513e1...
55 Downloading data files: 100%|██████████| 1/1 [00:00
<?, ?it/s]
56 Extracting data files: 100%|██████████| 1/1 [00:00<00
:00, 500.22it/s]
57 0%|          | 0/1 [00:00<?, ?it/s]Dataset csv
downloaded and prepared to C:/Users/admin/.cache/
huggingface/datasets/csv/default-c9cc4f52981ee210/0.0
.0/

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57 6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
   bcc7ec513e1. Subsequent calls will reuse this data.
58 100%|██████████| 1/1 [00:00<00:00, 41.65it/s]
59 val len 7587
60 Downloading and preparing dataset csv/default to C:/
   Users/admin/.cache/huggingface/datasets/csv/default-
   c260aec5afa8472/0.0.0/
   6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
   bcc7ec513e1...
61 Downloading data files: 100%|██████████| 1/1 [00:00
   <?, ?it/s]
62 Extracting data files: 100%|██████████| 1/1 [00:00<00
   :00, 141.61it/s]
63 100%|██████████| 1/1 [00:00<00:00, 99.57it/s]
64 Dataset csv downloaded and prepared to C:/Users/admin
   /.cache/huggingface/datasets/csv/default-
   c260aec5afa8472/0.0.0/
   6954658bab30a358235fa864b05cf819af0e179325c740e4bc853
   bcc7ec513e1. Subsequent calls will reuse this data.
65 preprocess_samples begin ...
66 uncertainty shape: 810
67 ./val_embeddings/NEW_bertie_embeddings_textattack/
   bert-base-uncased-MNLI_subset_1.pt
68 classify begin
69 11199
70 0%|          | 0/20 [00:00<?, ?it/s]all_data_818
71 all_data_818
72 1354it [00:11, 512.44it/s]all_data_818
73 all_data_818
74 all_data_818
75 all_data_818
76 2756it [00:28, 513.55it/s]all_data_818
77 all_data_818
78 all_data_818
79 2790it [00:38, 513.55it/s]all_data_818
80 4159it [00:45, 543.99it/s]all_data_818
81 all_data_818
82 all_data_818
83 4185it [00:58, 543.99it/s]all_data_818
84 5557it [01:01, 518.78it/s]all_data_818

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85 all_data_818
86 all_data_818
87 all_data_818
88 6932it [01:18, 505.75it/s]all_data_818
89 all_data_818
90 all_data_818
91 6975it [01:28, 505.75it/s]all_data_818
92 8327it [01:35, 531.21it/s]all_data_818
93 all_data_818
94 all_data_818
95 8370it [01:48, 531.21it/s]all_data_818
96 9748it [01:54, 474.12it/s]all_data_818
97 all_data_818
98 all_data_818
99 9766it [02:09, 8.65it/s] all_data_818
100 11137it [02:11, 520.76it/s]all_data_818
101 all_data_818
102 all_data_818
103 all_data_818
104 12512it [02:28, 487.03it/s]all_data_818
105 all_data_818
106 12555it [02:39, 487.03it/s]all_data_818
107 all_data_818
108 13909it [02:47, 415.13it/s]all_data_818
109 all_data_818
110 13950it [02:59, 415.13it/s]all_data_818
111 all_data_818
112 15334it [03:08, 376.01it/s]all_data_818
113 all_data_818
114 15345it [03:19, 376.01it/s]all_data_818
115 all_data_818
116 16740it [03:26, 500.98it/s]all_data_818
117 all_data_818
118 all_data_818
119 16740it [03:39, 500.98it/s]all_data_818
120 18091it [03:44, 478.57it/s]all_data_818
121 all_data_818
122 all_data_818
123 all_data_818
124 19503it [04:01, 492.41it/s]all_data_818
125 all_data_818
```

```
126 all_data_818
127 all_data_818
128 20910it [04:19, 483.54it/s]all_data_818
129 all_data_818
130 all_data_818
131 all_data_818
132 22285it [04:36, 413.67it/s]all_data_818
133 all_data_818
134 22320it [04:49, 413.67it/s]all_data_818
135 all_data_818
136 23663it [04:56, 548.80it/s]all_data_818
137 all_data_818
138 all_data_818
139 23715it [05:09, 548.80it/s]all_data_818
140 25104it [05:13, 444.87it/s]all_data_818
141 all_data_818
142 all_data_818
143 all_data_818
144 26463it [05:30, 628.23it/s]all_data_818
145 all_data_818
146 all_data_818
147 all_data_818
148 27873it [05:47, 630.40it/s]all_data_818
149 all_data_818
150 epoch number 19
151 all_data_818
152 all_data_818
153 27900it [05:59, 630.40it/s]all_data_818
154 all_data_818
155 global t is : 0
156 test epoch results {'accuracy': 0.6052287581699346
, 'f1_weighted': 0.5836865342524855, 'f1_macro': 0.
48274553090803834, 'f1': array([0.86848635, 0.
05128205, 0.43298969, 0.40223464, 0.54450262,
157      0.20472441, 0.6167147 , 0.65377532, 0.57
      ]), 'precision': array([0.85365854, 0.25
      , 0.4375      , 0.66666667, 0.61538462,
158      0.35135135, 0.61142857, 0.56082148, 0.
55609756]), 'recall': array([0.88383838, 0.02857143
, 0.42857143, 0.288      , 0.48826291,
159      0.14444444, 0.62209302, 0.78366446, 0.
```

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159 58461538]))}
160 val epoch results {'accuracy': 0.6012345679012345, '
    f1_weighted': 0.5789404141206336, 'f1_macro': 0.
    48656840949513636, 'f1': array([0.8245614 , 0
    .           , 0.61818182, 0.40449438, 0.45925926,
161     0.2962963 , 0.55128205, 0.64705882, 0.
    57798165]), 'precision': array([0.7768595 , 0
    .           , 0.62962963, 0.62068966, 0.54385965,
162     0.6           , 0.59722222, 0.55733333, 0.
    58333333]), 'recall': array([0.87850467, 0
    .           , 0.60714286, 0.3           , 0.3974359 ,
163     0.19672131, 0.51190476, 0.77121771, 0.
    57272727]))}
164 27900it [06:04, 76.55it/s]
165 []
166 Downloading and preparing dataset csv/default to C:/
    Users/admin/.cache/huggingface/datasets/csv/default-
    23a7f1ffb348da15/0.0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1...
167 Downloading data files: 100%|██████████| 1/1 [00:00
    <?, ?it/s]
168 Extracting data files: 100%|██████████| 1/1 [00:00<
    00:00, 125.04it/s]
169 0%|██████████| 0/1 [00:00<?, ?it/s]Dataset csv
    downloaded and prepared to C:/Users/admin/.cache/
    huggingface/datasets/csv/default-23a7f1ffb348da15/0.
    0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1. Subsequent calls will reuse this data.
170 100%|██████████| 1/1 [00:00<00:00, 55.56it/s]
171 Downloading data files: 100%|██████████| 1/1 [00:00
    <?, ?it/s]
172 Extracting data files: 100%|██████████| 1/1 [00:00<
    00:00, 127.08it/s]
173 Downloading and preparing dataset csv/default to C:/
    Users/admin/.cache/huggingface/datasets/csv/default-
    2ca332e234cc676e/0.0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1...
174 100%|██████████| 1/1 [00:00<00:00, 76.59it/s]

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175 Dataset csv downloaded and prepared to C:/Users/
    admin/.cache/huggingface/datasets/csv/default-
    2ca332e234cc676e/0.0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1. Subsequent calls will reuse this data.
176 Downloading data files: 100%|██████████| 1/1 [00:00
    <?, ?it/s]
177 Downloading and preparing dataset csv/default to C:/
    Users/admin/.cache/huggingface/datasets/csv/default-
    2d5889315788df99/0.0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1...
178 Extracting data files: 100%|██████████| 1/1 [00:00<
    00:00, 30.31it/s]
179 100%|██████████| 1/1 [00:00<00:00, 90.44it/s]
180 Dataset csv downloaded and prepared to C:/Users/
    admin/.cache/huggingface/datasets/csv/default-
    2d5889315788df99/0.0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1. Subsequent calls will reuse this data.
181 Downloading data files: 100%|██████████| 1/1 [00:00
    <?, ?it/s]
182 Downloading and preparing dataset csv/default to C:/
    Users/admin/.cache/huggingface/datasets/csv/default-
    f8641e5bd5f3237c/0.0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1...
183 Extracting data files: 100%|██████████| 1/1 [00:00<
    00:00, 100.01it/s]
184 100%|██████████| 1/1 [00:00<00:00, 83.04it/s]
185 Dataset csv downloaded and prepared to C:/Users/
    admin/.cache/huggingface/datasets/csv/default-
    f8641e5bd5f3237c/0.0.0/
    6954658bab30a358235fa864b05cf819af0e179325c740e4bc85
    3bcc7ec513e1. Subsequent calls will reuse this data.
186 t is : 1
187 addlen is: 500
188 noexp_df.shape[0] last 1909
189 unexplained dataset length is:
190 1909
191 embedding begin
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192 trian and val dataset length: 104490
193 all_data_818
194 all_data_818
195 all_data_818
196 all_data_818
197 all_data_818
198 all_data_818
199 all_data_818
200 all_data_818
201 Process SpawnPoolWorker-98:
202 Process SpawnPoolWorker-97:
203 Process SpawnPoolWorker-100:
204 Process SpawnPoolWorker-99:
205 Process SpawnPoolWorker-96:
206 Process SpawnPoolWorker-94:
207 Process SpawnPoolWorker-93:
208 Process SpawnPoolWorker-95:
209 Traceback (most recent call last):
210   File "E:\python\lib\multiprocessing\process.py",
      line 315, in _bootstrap
211     self.run()
212   File "E:\python\lib\multiprocessing\process.py",
      line 108, in run
213     self._target(*self._args, **self._kwargs)
214   File "E:\python\lib\multiprocessing\pool.py", line
      125, in worker
215     result = (True, func(*args, **kwds))
216   File "D:\Bristol course\Data Science Dissertation\
      ExpBERT lab and thesis\BERT-IE-main\BERT-IE-main\
      fighting_818.py", line 765, in process_batch
217     model_outputs = model(**tokenized_train)
218   File "E:\Desktop\000\0000\venv\lib\site-packages\
      torch\nn\modules\module.py", line 1501, in
      _call_impl
219     return forward_call(*args, **kwargs)
220   File "E:\Desktop\000\0000\venv\lib\site-packages\
      transformers\models\bert\modeling_bert.py", line
      1562, in forward
221     outputs = self.bert(
222   File "E:\Desktop\000\0000\venv\lib\site-packages\
      torch\nn\modules\module.py", line 1501, in

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222 _call_impl
223     return forward_call(*args, **kwargs)
224 File "E:\Desktop\000\0000\venv\lib\site-packages\
transformers\models\bert\modeling_bert.py", line
1020, in forward
225     encoder_outputs = self.encoder(
226 File "E:\Desktop\000\0000\venv\lib\site-packages\
torch\nn\modules\module.py", line 1501, in
_call_impl
227     return forward_call(*args, **kwargs)
228 File "E:\Desktop\000\0000\venv\lib\site-packages\
transformers\models\bert\modeling_bert.py", line 610
, in forward
229     layer_outputs = layer_module(
230 File "E:\Desktop\000\0000\venv\lib\site-packages\
torch\nn\modules\module.py", line 1501, in
_call_impl
231     return forward_call(*args, **kwargs)
232 File "E:\Desktop\000\0000\venv\lib\site-packages\
transformers\models\bert\modeling_bert.py", line 537
, in forward
233     layer_output = apply_chunking_to_forward(
234 File "E:\Desktop\000\0000\venv\lib\site-packages\
transformers\pytorch_utils.py", line 236, in
apply_chunking_to_forward
235     return forward_fn(*input_tensors)
236 File "E:\Desktop\000\0000\venv\lib\site-packages\
transformers\models\bert\modeling_bert.py", line 549
, in feed_forward_chunk
237     intermediate_output = self.intermediate(
attention_output)
238 File "E:\Desktop\000\0000\venv\lib\site-packages\
torch\nn\modules\module.py", line 1501, in
_call_impl
239     return forward_call(*args, **kwargs)
240 File "E:\Desktop\000\0000\venv\lib\site-packages\
transformers\models\bert\modeling_bert.py", line 449
, in forward
241     hidden_states = self.dense(hidden_states)
242 File "E:\Desktop\000\0000\venv\lib\site-packages\
torch\nn\modules\module.py", line 1501, in

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242 _call_impl
243     return forward_call(*args, **kwargs)
244     File "E:\Desktop\000\0000\venv\lib\site-packages\
    torch\nn\modules\linear.py", line 114, in forward
245         return F.linear(input, self.weight, self.bias)
246 KeyboardInterrupt
247 Traceback (most recent call last):
248 Traceback (most recent call last):
249 Traceback (most recent call last):
250     File "E:\python\lib\multiprocessing\process.py",
        line 315, in _bootstrap
251         self.run()
252     File "E:\python\lib\multiprocessing\process.py",
        line 315, in _bootstrap
253         self.run()
254     File "E:\python\lib\multiprocessing\process.py",
        line 108, in run
255         self._target(*self._args, **self._kwargs)
256     File "E:\python\lib\multiprocessing\pool.py", line
        114, in worker
257         task = get()
258     File "E:\python\lib\multiprocessing\queues.py",
        line 365, in get
259         with self._rlock:
260     File "E:\python\lib\multiprocessing\process.py",
        line 108, in run
261         self._target(*self._args, **self._kwargs)
262     File "E:\python\lib\multiprocessing\synchronize.py
        ", line 95, in __enter__
263         return self._semlock.__enter__()
264     File "E:\python\lib\multiprocessing\pool.py", line
        114, in worker
265         task = get()
266     File "E:\python\lib\multiprocessing\queues.py",
        line 365, in get
267         with self._rlock:
268     File "E:\python\lib\multiprocessing\synchronize.py
        ", line 95, in __enter__
269         return self._semlock.__enter__()
270     File "E:\python\lib\multiprocessing\process.py",
        line 315, in _bootstrap
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271     self.run()
272 KeyboardInterrupt
273   File "E:\python\lib\multiprocessing\process.py",
    line 108, in run
274     self._target(*self._args, **self._kwargs)
275 KeyboardInterrupt
276 Traceback (most recent call last):
277   File "E:\python\lib\multiprocessing\pool.py", line
    114, in worker
278     task = get()
279   File "E:\python\lib\multiprocessing\queues.py",
    line 365, in get
280     with self._rlock:
281   File "E:\python\lib\multiprocessing\synchronize.py
    ", line 95, in __enter__
282     return self._semlock.__enter__()
283 KeyboardInterrupt
284   File "E:\python\lib\multiprocessing\process.py",
    line 315, in _bootstrap
285     self.run()
286   File "E:\python\lib\multiprocessing\process.py",
    line 108, in run
287     self._target(*self._args, **self._kwargs)
288   File "E:\python\lib\multiprocessing\pool.py", line
    114, in worker
289     task = get()
290   File "E:\python\lib\multiprocessing\queues.py",
    line 365, in get
291     with self._rlock:
292   File "E:\python\lib\multiprocessing\synchronize.py
    ", line 95, in __enter__
293     return self._semlock.__enter__()
294 KeyboardInterrupt
295 Traceback (most recent call last):
296   File "E:\python\lib\multiprocessing\process.py",
    line 315, in _bootstrap
297     self.run()
298   File "E:\python\lib\multiprocessing\process.py",
    line 108, in run
299     self._target(*self._args, **self._kwargs)
300   File "E:\python\lib\multiprocessing\pool.py", line
```

```
300     114, in worker
301         task = get()
302     File "E:\python\lib\multiprocessing\queues.py",
      line 365, in get
303         with self._rlock:
304     File "E:\python\lib\multiprocessing\synchronize.py",
      line 95, in __enter__
305         return self._semlock.__enter__()
306 KeyboardInterrupt
307 Traceback (most recent call last):
308     File "E:\python\lib\multiprocessing\process.py",
      line 315, in _bootstrap
309         self.run()
310     File "E:\python\lib\multiprocessing\process.py",
      line 108, in run
311         self._target(*self._args, **self._kwargs)
312     File "E:\python\lib\multiprocessing\pool.py", line
      114, in worker
313         task = get()
314     File "E:\python\lib\multiprocessing\queues.py",
      line 366, in get
315         res = self._reader.recv_bytes()
316     File "E:\python\lib\multiprocessing\connection.py",
      line 221, in recv_bytes
317         buf = self._recv_bytes(maxlength)
318     File "E:\python\lib\multiprocessing\connection.py",
      line 310, in _recv_bytes
319         waitres = _winapi.WaitForMultipleObjects(
320 KeyboardInterrupt
321 Traceback (most recent call last):
322     File "E:\python\lib\multiprocessing\process.py",
      line 315, in _bootstrap
323         self.run()
324     File "E:\python\lib\multiprocessing\process.py",
      line 108, in run
325         self._target(*self._args, **self._kwargs)
326     File "E:\python\lib\multiprocessing\pool.py", line
      114, in worker
327         task = get()
328     File "E:\python\lib\multiprocessing\queues.py",
      line 366, in get
```

```
329     res = self._reader.recv_bytes()
330     File "E:\python\lib\multiprocessing\connection.py
      ", line 221, in recv_bytes
331     buf = self._recv_bytes(maxlength)
332     File "E:\python\lib\multiprocessing\connection.py
      ", line 310, in _recv_bytes
333     waitres = _winapi.WaitForMultipleObjects(
334 KeyboardInterrupt
335 all_data_818
336 all_data_818
337 all_data_818
338 all_data_818
339 all_data_818
340 all_data_818
341 all_data_818
342 all_data_818
343
```