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/Applications/Anaconda-Navigator.app/Contents/MacOS/python /Users/
kycchung/Desktop/Capstone-master/evaluation_easyocr.py
```

Character accuracy in EasyOCR/Annual_report

```
Characters predicted 199134.00
Errors             1078.00
Character accuracy  99.46
```

Throughput in EasyOCR/Annual_report

```
Characters predicted 199134.00
Errors             1078.00
OCR time           8977.54
Page              174.00
OCR time per page  51.60
```

	Penalty	Throughput
0	0	22.18
1	1	22.06
2	2	21.94
3	3	21.82
4	4	21.70
5	5	21.58
6	6	21.46
7	7	21.34
8	8	21.22
9	9	21.10

Accuracy by Character Class in EasyOCR/Annual_report

```
Characters predicted 199134
Errors 1078
```

	Class_type	Count_predicted	Count_error	Accuracy
0	Lowercase	180565	326	99.82
1	Uppercase	7122	30	99.58
2	Number	7785	72	99.08
3	Symbol	3662	650	82.25

Accuracy by frequency in EasyOCR/Annual_report

	Character	Count_predicted	Count_error	Accuracy_by_frequency
0	!	1	0	100.00
1	"	93	56	39.78
2	#	5	0	100.00
3	\$	477	219	54.09
4	%	127	41	67.72
5	&	73	1	98.63
6	'	172	29	83.14
7	(	439	111	74.72
8	)	440	68	84.55
9	*	4	3	25.00
10	+	24	1	95.83
11	,	1614	93	94.24
12	/	45	15	66.67
13	0	1855	7	99.62

14	1	1437	23	98.40
15	2	1495	8	99.46
16	3	440	1	99.77
17	4	401	2	99.50
18	5	514	14	97.28
19	6	459	6	98.69
20	7	385	7	98.18
21	8	388	2	99.48
22	9	411	2	99.51
23	:	37	3	91.89
24	;	95	0	100.00
25	@	6	4	33.33
26	A	505	3	99.41
27	B	254	0	100.00
28	C	413	0	100.00
29	D	265	0	100.00
30	E	325	0	100.00
31	F	342	0	100.00
32	G	352	0	100.00
33	H	538	0	100.00
34	I	621	22	96.46
35	J	22	0	100.00
36	K	414	0	100.00
37	L	143	0	100.00
38	M	289	0	100.00
39	N	109	1	99.08
40	O	164	3	98.17
41	P	382	0	100.00
42	Q	10	0	100.00
43	R	317	1	99.68
44	S	523	0	100.00
45	T	745	0	100.00
46	U	86	0	100.00
47	V	64	0	100.00
48	W	210	0	100.00
49	X	5	0	100.00
50	Y	21	0	100.00
51	Z	3	0	100.00
52	^	10	6	40.00
53	a	13327	0	100.00
54	b	2003	0	100.00
55	c	6646	18	99.73
56	d	6326	4	99.94
57	e	22792	5	99.98
58	f	3937	2	99.95
59	g	4135	1	99.98
60	h	6102	0	100.00
61	i	14648	13	99.91
62	j	229	0	100.00
63	k	633	0	100.00
64	l	8157	0	100.00
65	m	4673	0	100.00
66	n	15753	57	99.64
67	o	14645	83	99.43
68	p	4649	0	100.00
69	q	165	0	100.00
70	r	12407	23	99.81

71	s	10831	90	99.17
72	t	15607	0	100.00
73	u	5216	12	99.77
74	v	2795	5	99.82
75	w	2032	11	99.46
76	x	618	1	99.84
77	y	2190	1	99.95
78	z	49	0	100.00

Grouped error in EasyOCR/Annual_report

Count_error

Character Predicted

"	%	1
	'	12
	)	1
	*	7
	>	1
	?	3
	c	4
	{ }	26
	~	1
\$	8	12
	S	189
	{ }	18
%	9	36
	{ }	5
&	e	1
'	"	2
	{ }	26
	~	1
(	)	1
	I	1
	{ }	109
)	,	1
	>	1
	F	1
	{ }	65
*	:	1
	{ }	2
+	{ }	1
,	)	1
	;	22
	{ }	70
/	l	12
	{ }	3
0	0	4
	{ }	3
1	9	1
	D	1
	I	2
	L	7
	l	3
	{ }	9
2	5	2
	{ }	6
3	{ }	1

4	{}	2
5	3	1
	S	8
	{}	5
6	;	1
	{}	5
7	{}	7
8	1	1
	7	1
9	5	1
	{}	1
:	%	1
	{}	2
@	:	1
	=	1
	{}	2
A	{}	3
I	1	2
	L	9
	T	3
	[	2
	{}	6
N	{}	1
O	0	3
R	{}	1
^	4	5
	{}	1
c	C	2
	{}	16
d	{}	4
e	{}	5
f	{}	2
g	{}	1
i	1	2
	j	1
	{}	10
n	{}	57
o	0	24
	0	55
	{}	4
r	1	1
	I	2
	T	10
	m	1
	{}	9
s	\$	32
	S	58
u	U	12
v	{}	5
w	W	11
x	{}	1
y	v	1

Note: {} indicates no prediction made by the OCR engine
Number of missed prediction: 494

Error table with prediction confidence for EasyOCR/Annual_report

	Character	Predicted	OCR confidence	
0		8	1	4.5
1		2	5	7.7
2		I	L	8.9
3		I	L	9.6
4		I	L	16.8
5		)	F	17.6
6		)	>	20.8
7		"	'	22.5
8		5	3	23.9
9		I	L	24.5
10		I	L	24.9
11		@	=	24.9
12		"	)	25.2
13		'	~	25.8
14		1	L	26.1
15		%	9	28.7
16		9	5	30.3
17		o	0	30.5
18		"	'	30.5
19		s	S	30.5
20		"	'	30.9
21		s	\$	33.7
22		I	1	35.5
23		\$	S	37.6
24		0	0	38.4
25		I	1	38.7
26		\$	8	38.9
27		s	\$	39.0
28		\$	S	39.6
29		1	D	39.6
30		"	'	39.6
31		o	0	40.7
32		\$	S	41.5
33		\$	S	41.5
34		\$	S	41.7
35		\$	S	42.4
36		s	\$	43.1
37		"	*	43.4
38		o	0	43.5
39		o	0	43.5
40		"	'	44.1
41		"	c	44.5
42		s	\$	44.8
43		5	S	45.2
44		0	0	45.2
45		o	0	45.2
46		u	U	45.2
47		r	T	45.2
48		)	,	45.4
49		"	'	45.6
50		c	C	45.7
51		s	S	46.0
52		(	)	46.2
53		I	[	46.2
54		:	%	46.2

55	\$	8	46.4
56	\$	S	46.7
57	s	\$	47.0
58	s	\$	47.5
59	&	e	47.7
60	s	\$	47.9
61	%	9	47.9
62	"	c	48.2
63	i	l	48.8
64	i	j	49.2
65	\$	S	49.2
66	o	0	49.3
67	s	S	49.3
68	l	l	49.4
69	s	\$	49.5
70	o	0	49.7
71	"	'	49.9
72	o	0	50.1
73	%	9	50.2
74	o	0	50.2
75	\$	S	50.3
76	o	0	50.7
77	\$	S	50.8
78	\$	S	50.9
79	s	\$	50.9
80	y	v	51.0
81	,	)	51.2
82	\$	S	51.2
83	s	\$	51.5
84	s	\$	51.8
85	\$	8	51.8
86	o	0	51.8
87	"	%	51.9
88	"	?	51.9
89	s	\$	52.5
90	l	L	52.5
91	\$	S	52.7
92	\$	S	52.9
93	o	0	53.3
94	o	0	53.3
95	s	S	53.7
96	o	0	53.7
97	u	U	53.8
98	o	0	53.8
99	\$	S	53.9
100	"	~	53.9
101	,	;	54.0
102	r	T	54.0
103	o	0	54.0
104	\$	S	54.2
105	,	;	54.4
106	,	;	54.5
107	2	5	54.9
108	%	9	55.1
109	\$	S	55.2
110	o	0	55.4
111	o	0	55.6

112	s	S	55.7
113	"	c	55.8
114	,	;	55.8
115	,	;	56.0
116	u	U	56.0
117	o	O	56.0
118	r	T	56.0
119	%	9	56.2
120	\$	8	56.4
121	w	W	56.6
122	%	9	56.9
123	\$	S	57.2
124	\$	S	57.3
125	\$	S	57.3
126	\$	S	57.3
127	s	\$	57.6
128	\$	8	57.6
129	\$	S	57.9
130	s	\$	57.9
131	\$	S	58.3
132	s	\$	58.3
133	%	9	58.5
134	o	O	58.5
135	s	\$	58.5
136	,	;	58.7
137	\$	S	58.9
138	%	9	59.1
139	s	\$	59.2
140	s	\$	59.2
141	s	S	59.4
142	\$	S	59.4
143	o	O	59.4
144	l	L	59.5
145	0	O	59.5
146	l	L	59.5
147	I	L	59.6
148	,	;	59.7
149	s	S	59.7
150	\$	S	60.0
151	\$	S	60.3
152	I	T	60.3
153	w	W	60.4
154	%	9	60.6
155	r	T	60.8
156	o	O	60.8
157	r	T	60.9
158	%	9	61.2
159	\$	S	61.2
160	l	L	61.2
161	"	c	61.3
162	5	S	61.3
163	o	O	61.5
164	u	U	61.5
165	r	T	61.5
166	\$	S	61.5
167	\$	S	61.6
168	s	S	61.7

169	\$	S	62.0
170	u	U	62.2
171	o	O	62.2
172	\$	S	62.2
173	r	T	62.2
174	s	\$	62.3
175	\$	S	62.3
176	\$	S	62.3
177	\$	S	62.4
178	l	I	62.4
179	l	L	62.4
180	w	W	62.4
181	,	;	62.5
182	o	O	62.5
183	\$	S	62.9
184	\$	S	63.0
185	\$	S	63.1
186	o	O	63.2
187	u	U	63.2
188	\$	S	63.4
189	o	O	63.7
190	o	O	63.7
191	\$	S	63.7
192	5	S	63.9
193	\$	S	63.9
194	s	S	63.9
195	\$	S	64.0
196	\$	S	64.0
197	=	'	64.1
198	\$	S	64.1
199	I	T	64.1
200	u	U	64.2
201	r	I	64.2
202	o	O	64.2
203	\$	8	64.3
204	s	\$	64.5
205	\$	S	64.6
206	\$	S	64.7
207	s	\$	64.7
208	s	S	65.0
209	0	O	65.0
210	\$	S	65.1
211	\$	S	65.1
212	\$	S	65.2
213	o	O	65.3
214	o	O	65.5
215	s	\$	65.5
216	,	;	65.6
217	\$	S	65.7
218	\$	S	65.8
219	\$	S	65.9
220	\$	S	65.9
221	\$	S	65.9
222	,	;	66.3
223	\$	S	66.4
224	\$	S	66.4
225	r	T	66.8

226	I	L	66.9
227	I	L	66.9
228	"	?	67.1
229	"	*	67.1
230	\$	S	67.1
231	"	*	67.2
232	w	W	67.3
233	\$	S	67.4
234	\$	S	67.5
235	\$	S	67.5
236	I	L	67.6
237	\$	S	67.6
238	%	9	67.6
239	\$	S	67.8
240	,	;	67.8
241	%	9	67.9
242	o	0	68.0
243	%	9	68.2
244	\$	S	68.2
245	\$	S	68.4
246	\$	S	68.4
247	\$	S	68.4
248	\$	S	68.5
249	s	S	68.5
250	\$	S	68.6
251	o	0	68.6
252	o	0	68.6
253	,	;	68.7
254	\$	S	69.1
255	u	U	69.1
256	r	T	69.1
257	o	0	69.1
258	r	1	69.1
259	o	0	69.1
260	\$	S	69.2
261	\$	S	69.2
262	\$	S	69.2
263	o	0	69.2
264	\$	S	69.2
265	\$	S	69.2
266	o	0	69.3
267	\$	S	69.4
268	s	S	69.7
269	\$	S	69.8
270	s	\$	69.8
271	s	S	69.8
272	\$	S	69.9
273	o	0	69.9
274	\$	S	70.0
275	\$	S	70.0
276	5	S	70.2
277	\$	S	70.2
278	s	\$	70.3
279	%	9	70.3
280	\$	S	70.6
281	\$	S	70.7
282	\$	S	70.7

283	o	0	70.8
284	\$	S	71.0
285	\$	S	71.1
286	%	9	71.1
287	o	0	71.2
288	o	0	71.2
289	%	9	71.2
290	o	0	71.3
291	\$	8	71.4
292	s	\$	71.4
293	s	S	71.4
294	\$	S	71.5
295	^	4	71.6
296	1	I	71.8
297	\$	S	71.8
298	8	7	72.0
299	5	S	72.0
300	\$	S	72.4
301	,	;	72.5
302	s	\$	72.6
303	,	;	72.8
304	s	\$	72.9
305	"	*	73.0
306	5	S	73.0
307	\$	S	73.0
308	"	>	73.0
309	o	0	73.1
310	"	'	73.1
311	s	S	73.1
312	\$	S	73.1
313	\$	S	73.2
314	\$	S	73.2
315	s	\$	73.3
316	o	0	73.4
317	\$	S	73.4
318	u	U	73.5
319	s	S	73.5
320	s	\$	73.5
321	s	S	73.5
322	\$	S	73.6
323	6	;	73.7
324	%	9	73.8
325	\$	S	73.9
326	\$	8	73.9
327	o	0	74.0
328	\$	S	74.1
329	\$	S	74.3
330	\$	S	74.3
331	1	9	74.4
332	\$	S	74.4
333	\$	S	74.4
334	%	9	74.5
335	s	\$	74.6
336	\$	S	74.6
337	o	0	74.9
338	\$	S	74.9
339	i	1	74.9

340	S	S	75.0
341	O	O	75.1
342	"	*	75.3
343	"	'	75.6
344	\$	S	75.6
345	O	O	75.9
346	\$	S	76.0
347	W	W	76.2
348	,	;	76.2
349	S	S	76.2
350	O	O	76.2
351	\$	S	76.3
352	S	\$	76.4
353	\$	S	76.9
354	O	O	76.9
355	\$	S	77.0
356	I	T	77.0
357	\$	S	77.0
358	%	9	77.1
359	,	;	77.2
360	S	S	77.3
361	\$	S	77.7
362	S	S	77.8
363	\$	S	77.8
364	%	9	77.9
365	%	9	77.9
366	\$	S	78.1
367	%	9	78.2
368	S	S	78.2
369	\$	S	78.2
370	\$	S	78.2
371	%	9	78.4
372	\$	S	78.5
373	\$	S	78.6
374	S	S	78.8
375	^	4	79.0
376	\$	S	79.2
377	r	I	79.2
378	U	U	79.2
379	O	O	79.2
380	S	S	79.2
381	\$	S	79.3
382	\$	S	79.4
383	\$	S	79.5
384	O	O	79.5
385	\$	S	79.6
386	5	S	79.6
387	O	O	79.8
388	\$	8	79.9
389	W	W	80.0
390	\$	S	80.0
391	S	\$	80.0
392	\$	S	80.1
393	\$	S	80.1
394	O	O	80.3
395	\$	S	80.6
396	O	O	80.6

397	\$	S	80.6
398	%	9	80.7
399	s	S	80.7
400	o	0	81.0
401	o	0	81.1
402	%	9	81.1
403	s	S	81.1
404	\$	S	81.2
405	\$	S	81.2
406	%	9	81.4
407	\$	S	81.4
408	0	0	81.5
409	,	;	81.5
410	\$	S	81.5
411	'	"	81.6
412	,	;	81.7
413	\$	S	81.8
414	^	4	82.0
415	\$	8	82.2
416	"	'	82.2
417	,	;	82.3
418	o	0	82.3
419	\$	S	82.6
420	o	0	82.6
421	o	0	82.6
422	o	0	82.6
423	"	*	82.7
424	\$	S	83.1
425	\$	8	83.2
426	\$	S	83.2
427	s	S	83.3
428	s	S	83.3
429	u	U	83.7
430	r	T	83.7
431	\$	S	83.7
432	u	U	83.8
433	s	S	83.8
434	o	0	84.2
435	^	4	84.2
436	\$	S	84.2
437	\$	S	84.4
438	s	S	84.5
439	s	S	84.5
440	o	0	84.6
441	,	;	84.6
442	\$	S	84.8
443	\$	S	84.8
444	"	*	84.8
445	s	S	85.0
446	@	:	85.0
447	s	S	85.2
448	\$	S	85.2
449	\$	S	85.3
450	\$	8	85.4
451	s	S	85.5
452	(	I	85.7
453	\$	S	85.7

454	\$	S	85.9
455	\$	S	86.1
456	s	S	86.3
457	s	S	86.4
458	s	S	86.4
459	o	O	86.4
460	o	O	86.4
461	\$	S	86.6
462	\$	S	86.7
463	\$	S	86.8
464	\$	S	86.9
465	w	W	86.9
466	\$	S	87.0
467	s	S	87.0
468	\$	S	87.2
469	o	O	87.3
470	s	S	87.4
471	*	:	87.4
472	\$	S	88.1
473	\$	S	88.2
474	o	O	88.2
475	s	S	88.2
476	w	W	88.4
477	\$	S	88.7
478	\$	S	88.8
479	o	O	88.9
480	s	S	88.9
481	o	O	89.0
482	,	;	89.0
483	I	[	89.4
484	%	9	89.5
485	o	O	89.5
486	c	C	89.5
487	%	9	89.8
488	%	9	89.8
489	5	S	90.2
490	o	O	90.3
491	s	S	90.4
492	\$	S	90.5
493	\$	S	90.6
494	s	S	90.8
495	o	O	90.8
496	^	4	90.9
497	"	?	91.3
498	'	"	91.7
499	s	S	91.7
500	\$	S	91.9
501	o	O	92.4
502	\$	S	92.5
503	\$	S	92.5
504	\$	S	92.8
505	\$	S	92.9
506	O	O	93.0
507	%	9	93.3
508	\$	S	93.4
509	%	9	93.7
510	%	9	93.7

511	%	9	93.7
512	\$	S	93.9
513	o	0	93.9
514	s	S	94.0
515	\$	S	94.2
516	o	0	94.2
517	\$	S	94.3
518	\$	S	94.5
519	\$	S	94.7
520	o	0	94.8
521	s	S	94.8
522	%	9	95.0
523	\$	S	95.0
524	/	L	95.2
525	\$	S	95.4
526	s	S	95.9
527	o	0	95.9
528	"	'	96.1
529	\$	S	96.1
530	%	9	96.2
531	,	;	96.4
532	\$	S	96.7
533	\$	S	97.0
534	\$	S	97.1
535	%	9	97.2
536	\$	S	97.2
537	\$	S	97.2
538	s	S	97.7
539	\$	S	97.7
540	\$	S	97.7
541	s	S	97.8
542	s	S	97.8
543	\$	S	97.9
544	s	S	97.9
545	\$	S	98.0
546	\$	S	98.2
547	s	S	98.4
548	\$	S	98.4
549	\$	S	98.5
550	0	0	98.5
551	s	S	98.6
552	r	m	98.7
553	s	S	98.9
554	\$	S	98.9
555	s	S	99.1
556	/	L	99.2
557	w	W	99.3
558	s	S	99.3
559	o	0	99.3
560	w	W	99.3
561	w	W	99.3
562	/	L	99.4
563	s	S	99.4
564	/	L	99.5
565	\$	S	99.5
566	1	L	99.6
567	/	L	99.6

568	s	S	99.6
569	1	L	99.6
570	/	l	99.6
571	\$	S	99.6
572	1	L	99.6
573	\$	S	99.6
574	/	l	99.7
575	/	l	99.7
576	\$	S	99.7
577	/	l	99.7
578	/	l	99.7
579	/	l	99.7
580	\$	S	99.8
581	\$	S	99.9
582	/	l	100.0
583	\$	S	100.0

Average confidence: 70.8

Process finished with exit code 0