	F1-score	number of	Fit time	Predict time
	(accuracy)	features	(in Second)	(in Second)
Bernoulli	0.84879	67708	1020	5520
Naive Bayes			(17 min)	(92 min)
BOW (bag of words)				
1 gram				
LR(logistic	0.88561	27254	10	2
regression)				
BOW-				
Only letter input				
(without numbers and				
etc.)				
1gram				
LR	0.88961	104211	106	7
BOW				
Only letter input				
(1, 4) gram				
LR	0.89061	27254	7	2
tf-idf				
Only letter input				
1 gram				
LR	0.89481	104211	95	6
tf-idf				
Only letter input				
1,4 gram				
LR	0.88541	27745	29	4
BOW				
Raw input				
1 gram				
LR	0.89521	166041	54	9
BOW				
Raw input				
1,2 gram				
LR	0.89601	290118	114	14
BOW				
Raw input				
1,3 gram	0.00521	242006	220	220
LR	0.89521	342886	230	230
BOW				
Raw input				
1,4 gram				

LR	0.89181	27745	20	6
tf-idf	0.07101	21173	20	
Raw input				
1 gram				
LR	0.90881	166041	55	8
tf-idf	0.30001	100041	33	O
Raw input				
1,2 gram				
LR	0.91161	290118	110	10
tf-idf	0.91101	290118	110	10
Raw input				
1,3 gram				
	0.91301	242006	100	20
LR tf-idf	0.91301	342886	199	20
Raw input				
1,4 gram	0.91301	358250	211	13
LR tf-idf	0.91301	338230	∠11	13
Raw input				
1,5 gram	0.01201	294402	116	12
LR	0.91381	284493	116	12
tf-idf				
input with cleanup				
1,3 gram	0.01501	224012	1.00	10
LR	0.91581	334012	169	18
tf-idf				
input with cleanup				
1,4 gram	0.01441	204055	117	10
LR	0.91441	284955	117	10
tf-idf				
input with cleanup &				
SWP (separate word				
from punctuation)				
1,3 gram	0.01561	222672	166	20
LR	0.91561	333673	166	20
tf-idf				
input with cleanup &				
SWP				
1,4 gram				

LR	0.01161	202062	100	11
tf-idf	0.91161	283063	108	11
input with cleanup &				
lemmatize				
1,3 gram	0.01201	224000	170	12
LR tf-idf	0.91281	334089	178	12
input with cleanup & lemmatize				
1,4 gram LR	0.91381	264522	89	9
tf-idf	0.91381	204322	89	9
input with cleanup & NWN (next word				
negation)				
1,3 gram				
LR	0.91441	297461	147	11
tf-idf	0.71441	291701	17/	11
input with cleanup &				
NWN				
1,4 gram				
LR	0.91201	283682	85	8
tf-idf	0.91201	283082	83	O
input with cleanup &				
lemmatize & SWP				
1,3 gram				
LR	0.91241	333997	141	11
tf-idf	0.71241	333771	171	11
input with cleanup &				
lemmatize & SWP				
1,4 gram				
LR	0.91281	263993	90	9
tf-idf	1			-
input with cleanup &				
lemmatize & SWP &				
NWN				
1,3 gram				
LR	0.91261	298356	132	10
tf-idf				
input with cleanup &				
lemmatize & SWP &				
NWN				
1,4 gram				
l	1	I .	1	t

	0.91521	1010594	167	13
SVM				
tf-idf				
Raw input				
1,4 gram				
SVM	0.91501	987640	155	15
tf-idf				
input with cleanup				
1,4 gram				
SVM	0.91401	899187	156	12
tf-idf				
input with cleanup &				
NWN				
1,4 gram				
SVM	0.91321	987519	171	12
tf-idf				
input with cleanup &				
lemmatize				
1,4 gram				
SVM	0.91481	988012	161	16
tf-idf				
input with cleanup &				
SWP				
1,4 gram				
SVM	0.91541	901848	164	13
tf-idf				
input with cleanup &				
lemmatize & SWP &				
NWN				
1,4 gram				