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GENERALE**

BRAINWAVES 2019 ML

PROBLEM STATEMENT

Extracting information from ISDA Master Agreements using Machine Learning

BRAINWAVES

2019 ML

HACKATHON

PROBLEM STATEMENT

WHAT IS ISDA?

An ISDA Master Agreement is the standard document that is regularly used to govern over-the-counter derivatives transactions. The Agreement, which is published by the International Swaps and Derivatives Association (ISDA), outlines the terms to be applied to a derivatives transaction between two parties, typically a derivatives dealer and a counterparty. The Master Agreement itself is standard, but it is accompanied by a customized schedule and sometimes a credit support annex, both of which are signed by the two parties in a given transaction.

Societe Generale being multinational bank have ISDAs in place with other banks, and these usually cover all branches that are active in foreign exchange, interest rate or options trading. We require corporate counterparties to sign an ISDA to enter into swaps, and some also require them for foreign-exchange transactions. While the Master is standard, some of its terms and conditions are amended and defined in the accompanying schedule, which is negotiated to cover either (a) the requirements of a specific hedging transaction or (b) an ongoing trading relationship.

WHAT WE WANT TO DO?

Currently Lawyers go through each of these ISDA document, understand clauses and key-in essential information into a software application. We want to automate this process using Machine Learning. In future, we are looking to scale up the solution to many other legal documents that we handle in our diverse business processes.

Whole document comprises of up to 40 clauses with up to 250 fields, however for hackathon we are considering 8 clauses which hold 29 essential fields.

KEY INFO

Clauses: 8

Fields: 29

Training Set: At start of hackathon

Public Test Set: 2 hours post start of hackathon

Private Test Set: 1 hour before Coding Freeze

Data Set: PDF Documents and their XML extracts using OCR

Labeled Data:

CSV file with all target fields tagged

EVALUATION

CRITERIA

1. Leader Board Score
2. Feasibility
3. Novelty
4. Design and Scalability
5. Presentation

S no	Clause Name	field	value	valid responses	no. of responses possible	Metric	Score
1	Date	date	date of agreement (Can be extracted from pre printed version too)	YYYYMMDD, NotFound	1	Accuracy (0.3,0.3,0.4)	2 * (DayPoints + MonthPoints + YearPoints)
2	Party Name	party_A	entity named as party A in document	String containing name ('ABC BANK',...),NotFound	1	String Similarity Score (0 to 1)	3*score
3	Party Name	party_B	entity named as party B in document	String containing name ('ABC BANK',...),NotFound	1	String Similarity Score (0 to 1)	3*score
4	Termination Currency(part1)	TC_currency	currency agreed in document	currency responses to be mapped to valid ISO 4217 currency codes (USD, AUD,...),NotFound	1	Accuracy(0to1)	1*score
5		TC_Bespoke	currency bespoke to be selected by non defaulting or non affected party	To be selected by the Non-defaulting party or non-affected party,NotFound	1	Accuracy(0to1)	1*score
6	Calculation Agent(part 4)	calulation_agent	who is calculation agent	Party A, Party B, other,NotFound	1	Accuracy(0to1)	2*score
7		CA_fallback_default_dispute	fallbacks present for default and dispute	non defaulting party in case of default , substitution calculation agent in case of default , third party in case of default , non defaulting party in case of dispute , substitution calculation agent in case of dispute , other in case of dispute , NotFound	0 or more	Accuracy(0to1)	2*score
8		CA_dispute_resolution	whether dipsute resolution is present or not	yes, no, NotFound	1	Accuracy(0to1)	1*score
9	AdditionalTermination Events (part1)	RD_method_party_A	number of credit ratings reached bcoz of and and or	1,2,3,NotFound	1	Accuracy(0to1)	3*score
10		RD_party_A_short_term_debt_classification	what all debt classificatiosn are present for party A moody's short term ratings	Financial Strength, Subordinated, Senior Subordinated, Senior Secured, Senior Unsecured, Unsecured, Unguaranteed, Unsubordinated, NotFound	0 or more	Accuracy(0to1)	1*score
11		RD_party_A_moody_short_term_trigger_method	at or below what is trigger method	at, below, NotFound	1	Accuracy(0to1)	2*score
12		RD_party_A_moody_short_term_threshold	rating	as per valid ratings attached	1	Accuracy(0to1)	2*score
13		RD_party_A_SnP_short_term_trigger_method	at or below what is trigger method	at, below, NotFound	1	Accuracy(0to1)	2*score
14		RD_party_A_SnP_short_term_threshold	rating	as per valid ratings attached	1	Accuracy(0to1)	2*score
15		RD_party_A_Fitch_short_term_trigger_method	at or below what is trigger method	at, below, NotFound	1	Accuracy(0to1)	2*score
16		RD_party_A_Fitch_short_term_threshold	rating	as per valid ratings attached	1	Accuracy(0to1)	2*score
17		RD_party_A_moody_long_term_trigger_method	at or below what is trigger method	at, below, NotFound	1	Accuracy(0to1)	2*score
18		RD_party_A_long_term_debt_classification	what all debt classificatiosn are present for party A moody's long term ratings	Financial Strength, SubordiNotFounded, Senior Subordinated, Senior Secured, Senior Unsecured, Unsecured, Unguaranteed, Unsubordinated, NotFound	0 or more	Accuracy(0to1)	1*score
19		RD_party_A_moody_long_term_threshold	rating	as per valid ratings attached	1	Accuracy(0to1)	2*score
20		RD_party_A_SnP_long_term_trigger_method	at or below what is trigger method	at, below, NotFound	1	Accuracy(0to1)	2*score
21		RD_party_A_SnP_long_term_threshold	rating	as per valid ratings attached	1	Accuracy(0to1)	2*score
22		RD_party_A_Fitch_long_term_trigger_method	at or below what is trigger method	at, below, NotFound	1	Accuracy(0to1)	2*score
23		RD_party_A_Fitch_long_term_threshold	rating	as per valid ratings attached	1	Accuracy(0to1)	2*score
24	Cross Default (Part1)	Cross_default_threshold_type	threshold type for cross default	Fixed Amount, The greater of a fixed amount or a Percentage formula, The lesser of a fixed amount and a Percentage formula, PercentageFormula, Equal to a fixed amount or a Percentage formula, other, NotFound	0 or more	Accuracy(0to1)	2*score
25		Cross_default_percentage/amount	what percentage/amount is specified	integers, NotFound	0 or more	Accuracy(0to1)	2*score
26		Cross_default_measure	meausre provided	Net Asset Value, Shareholder's Equity, Other, NotFound	0 or more	Accuracy(0to1)	2*score
27	Multibranch Party (part 4)	multibranch_party_A	multiple branches of party A	No(if it is not a multibranch party),new york, ..., worldwide,NotFound	0 or more	String Similarity Score (0 to 1)	2*score
28		multibranch_party_B	multiple branches of party A	No(if it is not a multibranch party),new york, ..., worldwide,NotFound	0 or more	String Similarity Score (0 to 1)	2*score
29	Governing Law (part 4)	governing law	which governing law is agreed		0 or more	String Similarity Score (0 to 1)	2*score
						Leader Board Score (0 to 100)	(Sum of scores*1.7856)/Total Samples