package com.twitter.visibility.models

import com.twitter.spam.rtf.thriftscala.SafetyLabelSource

import com.twitter.spam.rtf.{thriftscala => s}

import com.twitter.util.Time

import com.twitter.visibility.util.NamingUtils

sealed trait TweetSafetyLabelType extends SafetyLabelType with Product with Serializable {

lazy val name: String = NamingUtils.getFriendlyName(this)

}

case class TweetSafetyLabel(

labelType: TweetSafetyLabelType,

source: Option[LabelSource] = None,

applicableUsers: Set[Long] = Set.empty,

modelMetadata: Option[TweetModelMetadata] = None,

score: Option[Double] = None,

safetyLabelSource: Option[SafetyLabelSource] = None)

object TweetSafetyLabelType extends SafetyLabelType {

val List: List[TweetSafetyLabelType] = s.SafetyLabelType.list.map(fromThrift)

val ActiveLabels: List[TweetSafetyLabelType] = List.filter { labelType =>

labelType != Unknown && labelType != Deprecated

}

private lazy val nameToValueMap: Map[String, TweetSafetyLabelType] =

List.map(l => l.name.toLowerCase -> l).toMap

def fromName(name: String): Option[TweetSafetyLabelType] = nameToValueMap.get(name.toLowerCase)

private val UnknownThriftSafetyLabelType =

s.SafetyLabelType.EnumUnknownSafetyLabelType(UnknownEnumValue)

private lazy val thriftToModelMap: Map[s.SafetyLabelType, TweetSafetyLabelType] = Map(

s.SafetyLabelType.Abusive -> Abusive,

s.SafetyLabelType.AbusiveBehavior -> AbusiveBehavior,

s.SafetyLabelType.AbusiveBehaviorInsults -> AbusiveBehaviorInsults,

s.SafetyLabelType.AbusiveBehaviorViolentThreat -> AbusiveBehaviorViolentThreat,

s.SafetyLabelType.AbusiveBehaviorMajorAbuse -> AbusiveBehaviorMajorAbuse,

s.SafetyLabelType.AbusiveHighRecall -> AbusiveHighRecall,

s.SafetyLabelType.AdsManagerDenyList -> AdsManagerDenyList,

s.SafetyLabelType.AgathaSpam -> AgathaSpam,

s.SafetyLabelType.Automation -> Automation,

s.SafetyLabelType.AutomationHighRecall -> AutomationHighRecall,

s.SafetyLabelType.Bounce -> Bounce,

s.SafetyLabelType.BounceEdits -> BounceEdits,

s.SafetyLabelType.BrandSafetyNsfaAggregate -> BrandSafetyNsfaAggregate,

s.SafetyLabelType.BrandSafetyExperimental1 -> BrandSafetyExperimental1,

s.SafetyLabelType.BrandSafetyExperimental2 -> BrandSafetyExperimental2,

s.SafetyLabelType.BrandSafetyExperimental3 -> BrandSafetyExperimental3,

s.SafetyLabelType.BrandSafetyExperimental4 -> BrandSafetyExperimental4,

s.SafetyLabelType.BystanderAbusive -> BystanderAbusive,

s.SafetyLabelType.CopypastaSpam -> CopypastaSpam,

s.SafetyLabelType.DoNotAmplify -> DoNotAmplify,

s.SafetyLabelType.DownrankSpamReply -> DownrankSpamReply,

s.SafetyLabelType.DuplicateContent -> DuplicateContent,

s.SafetyLabelType.DuplicateMention -> DuplicateMention,

s.SafetyLabelType.DynamicProductAd -> DynamicProductAd,

s.SafetyLabelType.EdiDevelopmentOnly -> EdiDevelopmentOnly,

s.SafetyLabelType.ExperimentalNudge -> ExperimentalNudge,

s.SafetyLabelType.ExperimentalSensitiveIllegal2 -> ExperimentalSensitiveIllegal2,

s.SafetyLabelType.ForEmergencyUseOnly -> ForEmergencyUseOnly,

s.SafetyLabelType.GoreAndViolence -> GoreAndViolence,

s.SafetyLabelType.GoreAndViolenceHighPrecision -> GoreAndViolenceHighPrecision,

s.SafetyLabelType.GoreAndViolenceHighRecall -> GoreAndViolenceHighRecall,

s.SafetyLabelType.GoreAndViolenceReportedHeuristics -> GoreAndViolenceReportedHeuristics,

s.SafetyLabelType.GoreAndViolenceTopicHighRecall -> GoreAndViolenceTopicHighRecall,

s.SafetyLabelType.HatefulConduct -> HatefulConduct,

s.SafetyLabelType.HatefulConductViolentThreat -> HatefulConductViolentThreat,

s.SafetyLabelType.HighCryptospamScore -> HighCryptospamScore,

s.SafetyLabelType.HighPReportedTweetScore -> HighPReportedTweetScore,

s.SafetyLabelType.HighPSpammyTweetScore -> HighPSpammyTweetScore,

s.SafetyLabelType.HighPblockScore -> HighPblockScore,

s.SafetyLabelType.HighProactiveTosScore -> HighProactiveTosScore,

s.SafetyLabelType.HighSpammyTweetContentScore -> HighSpammyTweetContentScore,

s.SafetyLabelType.HighToxicityScore -> HighToxicityScore,

s.SafetyLabelType.HighlyReportedAndMidhighToxicityScore -> HighlyReportedAndMidhighToxicityScore,

s.SafetyLabelType.HighlyReportedTweet -> HighlyReportedTweet,

s.SafetyLabelType.InterstitialDevelopmentOnly -> InterstitialDevelopmentOnly,

s.SafetyLabelType.IpiDevelopmentOnly -> IpiDevelopmentOnly,

s.SafetyLabelType.LiveLowQuality -> LiveLowQuality,

s.SafetyLabelType.LowQuality -> LowQuality,

s.SafetyLabelType.LowQualityMention -> LowQualityMention,

s.SafetyLabelType.MisinfoCivic -> MisinfoCivic,

s.SafetyLabelType.MisinfoCrisis -> MisinfoCrisis,

s.SafetyLabelType.MisinfoGeneric -> MisinfoGeneric,

s.SafetyLabelType.MisinfoMedical -> MisinfoMedical,

s.SafetyLabelType.NsfaHighPrecision -> NsfaHighPrecision,

s.SafetyLabelType.NsfaHighRecall -> NsfaHighRecall,

s.SafetyLabelType.NsfwCardImage -> NsfwCardImage,

s.SafetyLabelType.NsfwHighPrecision -> NsfwHighPrecision,

s.SafetyLabelType.NsfwHighRecall -> NsfwHighRecall,

s.SafetyLabelType.NsfwReportedHeuristics -> NsfwReportedHeuristics,

s.SafetyLabelType.NsfwText -> NsfwText,

s.SafetyLabelType.NsfwTextHighPrecision -> NsfwTextHighPrecision,

s.SafetyLabelType.NsfwVideo -> NsfwVideo,

s.SafetyLabelType.PNegMultimodalHighPrecision -> PNegMultimodalHighPrecision,

s.SafetyLabelType.PNegMultimodalHighRecall -> PNegMultimodalHighRecall,

s.SafetyLabelType.Pdna -> Pdna,

s.SafetyLabelType.RecommendationsLowQuality -> RecommendationsLowQuality,

s.SafetyLabelType.RitoActionedTweet -> RitoActionedTweet,

s.SafetyLabelType.SafetyCrisis -> SafetyCrisis,

s.SafetyLabelType.SearchBlacklist -> SearchBlacklist,

s.SafetyLabelType.SearchBlacklistHighRecall -> SearchBlacklistHighRecall,

s.SafetyLabelType.SemanticCoreMisinformation -> SemanticCoreMisinformation,

s.SafetyLabelType.SmyteSpamTweet -> SmyteSpamTweet,

s.SafetyLabelType.Spam -> Spam,

s.SafetyLabelType.SpamHighRecall -> SpamHighRecall,

s.SafetyLabelType.TombstoneDevelopmentOnly -> TombstoneDevelopmentOnly,

s.SafetyLabelType.TweetContainsHatefulConductSlurHighSeverity -> TweetContainsHatefulConductSlurHighSeverity,

s.SafetyLabelType.TweetContainsHatefulConductSlurMediumSeverity -> TweetContainsHatefulConductSlurMediumSeverity,

s.SafetyLabelType.TweetContainsHatefulConductSlurLowSeverity -> TweetContainsHatefulConductSlurLowSeverity,

s.SafetyLabelType.UnsafeUrl -> UnsafeUrl,

s.SafetyLabelType.UntrustedUrl -> UntrustedUrl,

s.SafetyLabelType.FosnrHatefulConduct -> FosnrHatefulConduct,

s.SafetyLabelType.FosnrHatefulConductLowSeveritySlur -> FosnrHatefulConductLowSeveritySlur,

s.SafetyLabelType.AbusiveHighRecall2 -> Deprecated,

s.SafetyLabelType.AbusiveHighRecall3 -> Deprecated,

s.SafetyLabelType.BrazilianPoliticalTweet -> Deprecated,

s.SafetyLabelType.BystanderAbusive2 -> Deprecated,

s.SafetyLabelType.BystanderAbusive3 -> Deprecated,

s.SafetyLabelType.DeprecatedLabel144 -> Deprecated,

s.SafetyLabelType.Experimental10Seh -> Deprecated,

s.SafetyLabelType.Experimental11Seh -> Deprecated,

s.SafetyLabelType.Experimental12Seh -> Deprecated,

s.SafetyLabelType.Experimental13Seh -> Deprecated,

s.SafetyLabelType.Experimental14Seh -> Deprecated,

s.SafetyLabelType.Experimental15Seh -> Deprecated,

s.SafetyLabelType.Experimental16Seh -> Deprecated,

s.SafetyLabelType.Experimental17Seh -> Deprecated,

s.SafetyLabelType.Experimental18Seh -> Deprecated,

s.SafetyLabelType.Experimental19Seh -> Deprecated,

s.SafetyLabelType.Experimental1Seh -> Deprecated,

s.SafetyLabelType.Experimental20Seh -> Deprecated,

s.SafetyLabelType.Experimental21Seh -> Deprecated,

s.SafetyLabelType.Experimental22Seh -> Deprecated,

s.SafetyLabelType.Experimental23Seh -> Deprecated,

s.SafetyLabelType.Experimental24Seh -> Deprecated,

s.SafetyLabelType.Experimental25Seh -> Deprecated,

s.SafetyLabelType.Experimental2Seh -> Deprecated,

s.SafetyLabelType.Experimental3Seh -> Deprecated,

s.SafetyLabelType.Experimental4Seh -> Deprecated,

s.SafetyLabelType.Experimental5Seh -> Deprecated,

s.SafetyLabelType.Experimental6Seh -> Deprecated,

s.SafetyLabelType.Experimental7Seh -> Deprecated,

s.SafetyLabelType.Experimental8Seh -> Deprecated,

s.SafetyLabelType.Experimental9Seh -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore1 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore10 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore2 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore3 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore4 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore5 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore6 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore7 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore8 -> Deprecated,

s.SafetyLabelType.ExperimentalHighHealthModelScore9 -> Deprecated,

s.SafetyLabelType.ExperimentalSensitiveIllegal1 -> Deprecated,

s.SafetyLabelType.ExperimentalSensitiveIllegal3 -> Deprecated,

s.SafetyLabelType.ExperimentalSensitiveIllegal4 -> Deprecated,

s.SafetyLabelType.ExperimentalSensitiveIllegal5 -> Deprecated,

s.SafetyLabelType.ExperimentalSensitiveIllegal6 -> Deprecated,

s.SafetyLabelType.ExperimentalSpam1 -> Deprecated,

s.SafetyLabelType.ExperimentalSpam2 -> Deprecated,

s.SafetyLabelType.ExperimentalSpam3 -> Deprecated,

s.SafetyLabelType.Experimentation -> Deprecated,

s.SafetyLabelType.Experimentation2 -> Deprecated,

s.SafetyLabelType.Experimentation3 -> Deprecated,

s.SafetyLabelType.HighlyReportedImage -> Deprecated,

s.SafetyLabelType.HighToxicityHoldbackModelScore -> Deprecated,

s.SafetyLabelType.LowQualityHighRecall -> Deprecated,

s.SafetyLabelType.MagicRecsDenylist -> Deprecated,

s.SafetyLabelType.MisinfoCovid19 -> Deprecated,

s.SafetyLabelType.MsnfoBrazilianElection -> Deprecated,

s.SafetyLabelType.MsnfoCovid19Vaccine -> Deprecated,

s.SafetyLabelType.MsnfoFrenchElection -> Deprecated,

s.SafetyLabelType.MsnfoPhilippineElection -> Deprecated,

s.SafetyLabelType.MsnfoUsElection -> Deprecated,

s.SafetyLabelType.NsfwNearPerfect -> Deprecated,

s.SafetyLabelType.PersonaNonGrata -> Deprecated,

s.SafetyLabelType.PMisinfoCombined15 -> Deprecated,

s.SafetyLabelType.PMisinfoCombined30 -> Deprecated,

s.SafetyLabelType.PMisinfoCombined50 -> Deprecated,

s.SafetyLabelType.PMisinfoDenylist -> Deprecated,

s.SafetyLabelType.PMisinfoPVeracityNudge -> Deprecated,

s.SafetyLabelType.PoliticalTweetExperimental1 -> Deprecated,

s.SafetyLabelType.ProactiveTosHighRecall -> Deprecated,

s.SafetyLabelType.ProactiveTosHighRecallContainsSelfHarm -> Deprecated,

s.SafetyLabelType.ProactiveTosHighRecallEncourageSelfHarm -> Deprecated,

s.SafetyLabelType.ProactiveTosHighRecallEpisodic -> Deprecated,

s.SafetyLabelType.ProactiveTosHighRecallEpisodicHatefulConduct -> Deprecated,

s.SafetyLabelType.ProactiveTosHighRecallOtherAbusePolicy -> Deprecated,

s.SafetyLabelType.ProjectLibra -> Deprecated,

s.SafetyLabelType.SearchHighVisibilityDenylist -> Deprecated,

s.SafetyLabelType.SearchHighVisibilityHighRecallDenylist -> Deprecated,

s.SafetyLabelType.Reserved162 -> Deprecated,

s.SafetyLabelType.Reserved163 -> Deprecated,

s.SafetyLabelType.Reserved164 -> Deprecated,

s.SafetyLabelType.Reserved165 -> Deprecated,

s.SafetyLabelType.Reserved166 -> Deprecated,

s.SafetyLabelType.Reserved167 -> Deprecated,

s.SafetyLabelType.Reserved168 -> Deprecated,

s.SafetyLabelType.Reserved169 -> Deprecated,

s.SafetyLabelType.Reserved170 -> Deprecated,

)

private lazy val modelToThriftMap: Map[TweetSafetyLabelType, s.SafetyLabelType] =

(for ((k, v) <- thriftToModelMap) yield (v, k)) ++ Map(

Deprecated -> s.SafetyLabelType.EnumUnknownSafetyLabelType(DeprecatedEnumValue),

)

case object Abusive extends TweetSafetyLabelType

case object AbusiveBehavior extends TweetSafetyLabelType

case object AbusiveBehaviorInsults extends TweetSafetyLabelType

case object AbusiveBehaviorViolentThreat extends TweetSafetyLabelType

case object AbusiveBehaviorMajorAbuse extends TweetSafetyLabelType

case object AbusiveHighRecall extends TweetSafetyLabelType

case object Automation extends TweetSafetyLabelType

case object AutomationHighRecall extends TweetSafetyLabelType

case object Bounce extends TweetSafetyLabelType

case object BystanderAbusive extends TweetSafetyLabelType

case object NsfaHighRecall extends TweetSafetyLabelType

case object DuplicateContent extends TweetSafetyLabelType

case object DuplicateMention extends TweetSafetyLabelType

case object GoreAndViolence extends TweetSafetyLabelType {

val DeprecatedAt: Time = Time.at("2019-09-12 00:00:00 UTC")

}

case object GoreAndViolenceHighRecall extends TweetSafetyLabelType

case object LiveLowQuality extends TweetSafetyLabelType

case object LowQuality extends TweetSafetyLabelType

case object LowQualityMention extends TweetSafetyLabelType

case object NsfwCardImage extends TweetSafetyLabelType

case object NsfwHighRecall extends TweetSafetyLabelType

case object NsfwHighPrecision extends TweetSafetyLabelType

case object NsfwVideo extends TweetSafetyLabelType

case object Pdna extends TweetSafetyLabelType

case object RecommendationsLowQuality extends TweetSafetyLabelType

case object SearchBlacklist extends TweetSafetyLabelType

case object Spam extends TweetSafetyLabelType

case object SpamHighRecall extends TweetSafetyLabelType

case object UntrustedUrl extends TweetSafetyLabelType

case object HighToxicityScore extends TweetSafetyLabelType

case object HighPblockScore extends TweetSafetyLabelType

case object SearchBlacklistHighRecall extends TweetSafetyLabelType

case object ForEmergencyUseOnly extends TweetSafetyLabelType

case object HighProactiveTosScore extends TweetSafetyLabelType

case object SafetyCrisis extends TweetSafetyLabelType

case object MisinfoCivic extends TweetSafetyLabelType

case object MisinfoCrisis extends TweetSafetyLabelType

case object MisinfoGeneric extends TweetSafetyLabelType

case object MisinfoMedical extends TweetSafetyLabelType

case object AdsManagerDenyList extends TweetSafetyLabelType

case object GoreAndViolenceHighPrecision extends TweetSafetyLabelType

case object NsfwReportedHeuristics extends TweetSafetyLabelType

case object GoreAndViolenceReportedHeuristics extends TweetSafetyLabelType

case object HighPSpammyTweetScore extends TweetSafetyLabelType

case object DoNotAmplify extends TweetSafetyLabelType

case object HighlyReportedTweet extends TweetSafetyLabelType

case object AgathaSpam extends TweetSafetyLabelType

case object SmyteSpamTweet extends TweetSafetyLabelType

case object SemanticCoreMisinformation extends TweetSafetyLabelType

case object HighPReportedTweetScore extends TweetSafetyLabelType

case object HighSpammyTweetContentScore extends TweetSafetyLabelType

case object GoreAndViolenceTopicHighRecall extends TweetSafetyLabelType

case object CopypastaSpam extends TweetSafetyLabelType

case object ExperimentalSensitiveIllegal2 extends TweetSafetyLabelType

case object DownrankSpamReply extends TweetSafetyLabelType

case object NsfwText extends TweetSafetyLabelType

case object HighlyReportedAndMidhighToxicityScore extends TweetSafetyLabelType

case object DynamicProductAd extends TweetSafetyLabelType

case object TombstoneDevelopmentOnly extends TweetSafetyLabelType

case object TweetContainsHatefulConductSlurHighSeverity extends TweetSafetyLabelType

case object TweetContainsHatefulConductSlurMediumSeverity extends TweetSafetyLabelType

case object TweetContainsHatefulConductSlurLowSeverity extends TweetSafetyLabelType

case object RitoActionedTweet extends TweetSafetyLabelType

case object ExperimentalNudge extends TweetSafetyLabelType

case object PNegMultimodalHighPrecision extends TweetSafetyLabelType

case object PNegMultimodalHighRecall extends TweetSafetyLabelType

case object BrandSafetyNsfaAggregate extends TweetSafetyLabelType

case object HighCryptospamScore extends TweetSafetyLabelType

case object IpiDevelopmentOnly extends TweetSafetyLabelType

case object BounceEdits extends TweetSafetyLabelType

case object UnsafeUrl extends TweetSafetyLabelType

case object InterstitialDevelopmentOnly extends TweetSafetyLabelType

case object EdiDevelopmentOnly extends TweetSafetyLabelType

case object NsfwTextHighPrecision extends TweetSafetyLabelType

case object HatefulConduct extends TweetSafetyLabelType

case object HatefulConductViolentThreat extends TweetSafetyLabelType

case object NsfaHighPrecision extends TweetSafetyLabelType

case object BrandSafetyExperimental1 extends TweetSafetyLabelType

case object BrandSafetyExperimental2 extends TweetSafetyLabelType

case object BrandSafetyExperimental3 extends TweetSafetyLabelType

case object BrandSafetyExperimental4 extends TweetSafetyLabelType

case object FosnrHatefulConduct extends TweetSafetyLabelType

case object FosnrHatefulConductLowSeveritySlur extends TweetSafetyLabelType

case object Deprecated extends TweetSafetyLabelType

case object Unknown extends TweetSafetyLabelType

def fromThrift(safetyLabelType: s.SafetyLabelType): TweetSafetyLabelType =

thriftToModelMap.get(safetyLabelType) match {

case Some(tweetSafetyLabelType) => tweetSafetyLabelType

case \_ =>

safetyLabelType match {

case s.SafetyLabelType.EnumUnknownSafetyLabelType(DeprecatedEnumValue) => Deprecated

case \_ =>

Unknown

}

}

def toThrift(safetyLabelType: TweetSafetyLabelType): s.SafetyLabelType = {

modelToThriftMap.getOrElse(safetyLabelType, UnknownThriftSafetyLabelType)

}

}

object TweetSafetyLabel {

def fromThrift(safetyLabelValue: s.SafetyLabelValue): TweetSafetyLabel =

fromTuple(safetyLabelValue.labelType, safetyLabelValue.label)

def fromTuple(

safetyLabelType: s.SafetyLabelType,

safetyLabel: s.SafetyLabel

): TweetSafetyLabel = {

TweetSafetyLabel(

labelType = TweetSafetyLabelType.fromThrift(safetyLabelType),

source = safetyLabel.source.flatMap(LabelSource.fromString),

safetyLabelSource = safetyLabel.safetyLabelSource,

applicableUsers = safetyLabel.applicableUsers

.map { perspectivalUsers =>

(perspectivalUsers map {

\_.userId

}).toSet

}.getOrElse(Set.empty),

score = safetyLabel.score,

modelMetadata = safetyLabel.modelMetadata.flatMap(TweetModelMetadata.fromThrift)

)

}

def toThrift(tweetSafetyLabel: TweetSafetyLabel): s.SafetyLabelValue = {

s.SafetyLabelValue(

labelType = TweetSafetyLabelType.toThrift(tweetSafetyLabel.labelType),

label = s.SafetyLabel(

applicableUsers = if (tweetSafetyLabel.applicableUsers.nonEmpty) {

Some(tweetSafetyLabel.applicableUsers.toSeq.map {

s.PerspectivalUser(\_)

})

} else {

None

},

source = tweetSafetyLabel.source.map(\_.name),

score = tweetSafetyLabel.score,

modelMetadata = tweetSafetyLabel.modelMetadata.map(TweetModelMetadata.toThrift)

)

)

}

}