

Chapter 1

Supplementary Materials for Submission in JURISIN 2021

We describe the rules for identifying each of the case analysis roles here for the interested readers. To use/reproduce the rules engine for any purpose, Approval of the authors is required.

1.1 Automated Case Law Analysis

1.1.1 Rules Description

Legal Issue

Based on the annotated examples and the domain knowledge of the legal experts, we extracted a set of patterns to identify a sentence as a legal issue. The rules are given in Table 1.1

Rule No.	Rule Description
1	<i><question/ questions/ issue/ issues> <that/ with which/ which> current-court <will have/ have/ has> to <decide/ deal/ examine/ adjudicate upon></i>
2	<i>current-court <String> <consider/ decide/ examine/ deal with> the contention on behalf of the <interveners/ appellants></i>
3	<i><issues/ issue/ question/ questions> <which/ that> came up for considerations before <this court/current-court></i>
4	<i><issue/ issues/ question/ questions> for current-court's consideration</i>
5	<i><issues/ issue/ question/ questions> before the <court/current-court></i>
6	<i><question/ questions/ issue/ issues> <which/ that> <has/ have/ will have/ are/ is> to be <adjudicated upon/ examined/ decided/ understood/ dealt></i>
7	<i>It is the <problem/ issue/ question> of <String> <which/ that> <current-court/ this court/ we> <seek/ seeks/ want/ wants/ like/ likes/ would like/ will/ intend/ intends/ are willing/ are seeking/ are intending> to <address/ discuss></i>
8	<i><writ petition/ petition/ application/ case> is concerned with the <question/ issue/ problem> of</i>
9	If a petitioner or appellant seeks to challenge the decision of an earlier judgment given by the court, then also it becomes a legal issue. The rule used to identify such sentence is a combination: (i) subject of the sentence is one of the appellants or the petitioners or their respective advocate/advocates. This can be understood using the identifier-tokens and the dependency parse of the sentence. (ii) Presence of the pattern: <i><have sought/ seeks/ seek/ sought> to challenge the <decision/ verdict/ order/ direction/ judgement/ contention/ legality/ validity/ legality and validity> of</i>

Table 1.1: Rules for identifying Legal Issues

Argument by Appellant, Argument by Respondent and Argument by Amicus Curiae

We took the annotated sentences of the label arguments by appellant, arguments by respondent, arguments by amicus. For each of the labels, we found the *root verbs* of the sentences by executing the dependency parse. The collection of *root verbs* is first verified by the legal experts and then enhanced with other verbs that have higher likelihood of occurring in the argument sentences. Then we follow the procedure

Algorithm 1 Process for Building the collection of argument verbs

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1: procedure BUILD_COLLECTION
2:    $C_v \leftarrow \text{root verbs}$ .
3:    $\text{ArgumentVerbs} \leftarrow \text{empty}$ 
4:   for  $i \leftarrow 1$  to  $N$  from  $C_v$  do
5:      $S_v \leftarrow \text{verb synset of } v_i \text{ from WordNet}$ .
6:      $\text{ArgumentVerbs} \leftarrow \text{ArgumentVerbs} \cup S_v$ .

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buildCollection() to build the set of *ArgumentVerbs* and it was again verified by legal experts to make the final set. Additionally, we added specific set of phrases and keywords that are likely to indicate the corresponding argument type e.g. "*according to amicus*", "*according to appellant*", "*according to respondent*" etc.

Now, for each of the sentences, We devise two methods to identify the argument labels.

1. We find if the identifier token ("*advocate-appellant*", "*advocate-respondent*", "*advocate-amicus*") is present with either of two patterns using the *argument verb* from the collection *ArgumentVerbs*:

- (i) $\langle \text{identifier token} \rangle \langle \text{String} \rangle \langle \text{argument verb} \rangle$
- (ii) $\langle \text{is/ are/ will be/ shall be/ was/ were/ has been/ have been/ had been} \rangle \langle \text{String} \rangle$
 $\langle \text{argument verb} \rangle \text{ by } \langle \text{String} \rangle (\text{optional}) \langle \text{identifier token} \rangle$

2. We create the dependency parse tree of the sentence. If the *root verb* of the sentence belongs to the *ArgumentVerbs* and the identifier token (i.e. "*advocate-appellant*", "*advocate-respondent*", "*advocate-amicus*") is either the *nsubj* (for the active voice), or, the *nsubjpass* (for the passive voice) of the *root verb*, then we label the sentence to be an argument by that identifier token.

Both the above rules perform equally well. Additionally, we look for certain patterns in the sentence. e.g. (i) *"the <submission/ submissions/ argument/ arguments/ reply> <of/ by> the <identifier token> <is/ was/ are/ were> that.* (ii) *<appellants/ respondents/ advocate-appellant/ advocate-respondent/ amicus/ advocate-amicus> <draws/ drew/ draw/ has drawn/ have drawn> <current-court's attention/ attention of the current-court/ this court's attention> to*

Relief Prayer

Identifying a relief prayer includes two parts.

1. To verify if the document type is an *Order*.
2. To check if one of the following patterns exist in the sentence. (i) *<seeks/ seek/ sought/ seeking/ pray/ prays/ prayed/ praying> <String> <relief/ reliefs>* (ii) *<seeks/ seeking/ seek/ sought> <direction/ directions/ order> to* (iii) *<for/ to> the following <relief/ reliefs>.* (iii) *<prayer/ prayers> made in the <aforsaid/ above/ present/ presented/ current> <writ petitions/ writ petition/ petitions / petition/ application/ applications/ case/ cases> < is/ are>* (iv) Pattern of *< prayer/ prayers> <is/ are/ has been/ have been> made* exists in the sentence and the *nsubjpass* of the head word *"made"* is one of the identifier tokens from the set *{"appellants", "advocate-appellant", "respondents", "advocate-respondent", "amicus", "advocate-amicus"}*.

In all the cases, the mention of the word *"relief"* remains distinctly identifiable.

Observation Findings

A combination of various patterns is used to identify a sentence as an Observation or finding of the court. The rules are listed in the Table 1.2. However, for the rules mentioned, we need to make sure that none of the rules for Argument by Appellant, Argument by Amicus, and Argument by Respondent holds for this.

Rule No.	Rule Description
1	<current-court/this court/we> <does not/do not/have>(optional) <notice/ notices/ noticed/ observed/ observe/ thinks/ think/ opined/ opine/ opines> that
2	<current-court/this court/we> <see/ sees/ saw/ finds/ find/ found> no <reason/ cause>
3	<current-court/this court/we> <do not see/ does not see/ does not find/ do not find> any <reason/ cause>
4	<current-court/this court/we> <have/ had/ does not/ do not>(optional) <agree/ agreed/ think/ thought/ consider/ considered>
5	<current-court/this court/we> <must/might/should>(optional) <note/ notes/ note/ accept/ accepts> that
6	<current-court/this court/we> <must/might/should>(optional) <appears / appear> to have come to the <following>(optional) <conclusion / conclusions/ view/ views/ opinion/ opinions/ understanding/ understandings/ verdict/ verdicts>
7	<current-court/this court/we> <could not/have>(optional) <find/ finds/ found> that
8	current-court's attention <has been/is/was> <String> <invited / drawn/ attracted> to
9	<current-court/this court/we> <is/are> <String>(optional) of the <view/ opinion/ understanding/ observation>
10	<current-court/this court/we> <can not/could not> <appreciate/ agree/ encourage/ accept/ deny>
11	<current-court/this court/we> <is/are> <therefore/ accordingly/ hereby/ as a result/ consequently/ as a consequence>(optional) unable to <find/ notice/ observe/ accept/ appreciate/ deny/ acknowledge/ note>
12	<current-court/this court/we> <is/are/have been> <informed/ told/ notified>
13	<has been/is/are/was/were/had been> <String> brought to the <current-court's notice/notice of current-court/notice of this court>
14	in <current-court/this court/the court>'s <esteemed/ careful/ considered>(optional) <view/ opinion/ understanding>
15	in view of the < foregoing/ ongoing/ current/ above/ careful/ considered>(optional) discussion
16	<Reference/References> <are/is/has been/ have been/ had been/ were/ was> made
17	Presence of legal key-phrase at the beginning of the sentence e.g. "It is absolutely necessary" , "This is a clear case of"
18	<It/ This> <seems / seemed/ appears/ appeared> to <the>(optional) <current-court/ this court> that
19	Presence of pattern at the beginning of the sentence: It is the <String> duty
20	Presence of pattern at the beginning of the sentence: It is <Adjective Phrase> that
21	Presence of pattern at the beginning of the sentence: <This/ It> <is/has been> <further/also>(optional) stated that
22	<This/ It> is <String> <state of affairs/serious matter>
23	writ petition <is/has been> <therefore/ accordingly/ hereby/ also>(optional) entertained

Table 1.2: Rules for identifying Observation Findings

Legal Principle

- (i) **Enumerated Rights:** We built a dictionary of enumerated rights or rights those can be obtained from constitution and existing parliamentary acts/statutes e.g. *Right to equality, Right to freedom, Right to education etc.*
- (ii) **Unenumerated Rights:** We built a simple regex to identify if it contains any mention of "*Right to*" in the sentence e.g. *<Right to><String>*
- (iii) Additionally we built a regex to capture the pattern: "chapter/section/page/-paragraph" of constitution/ act/ rules". i.e. *<chapter/ section/ page/ paragraph> <string> <Act,/ Constitution/ Rules>*.

We iterated on the sentences. If the sentence does not have any mention of identifier tokens for appellant, respondent or amicus, or any advocate of the parties in the text, and any of the above rules holds true, then we classify the sentence as a legal principle.

Conclusion Verdict

We have described the list of rules to identify a sentence as a "Conclusion Verdict" of the court in the Table 1.3. Additionally, It needs to be ensured that none of the rules for Argument by Appellant, Argument by Amicus, and Argument by Respondent holds for this.

Fact

If a sentence contains mention of identifier tokens for appellant, respondent, amicus, current-court but it does not contain any legal principle or does not fulfil the arguments criteria, or it does not follow the patterns in "Observation Findings" and "Conclusion Verdicts", then the sentence is labelled as "Fact". Additionally, following patterns are also helpful to identify the facts. (i) *It <was/is> held* (ii) If none of the identifier tokens is present, and it does fulfil the criteria for any other case analysis role mentioned above, and any of the argument verbs (e.g. *submitted, argued*

Rule No.	Rule Description
1	Indicator legal key-phrase such as <i>"Ordered accordingly"</i> , <i>"Order accordingly"</i> .
2	At the beginning of the sentence: <i>"By this judgment"</i>
3	<appeal/ appeals/ application/ applications/ petition/ petitions> <mentioned above / mentioned here>(optional) <is/ are/ shall be> <accordingly/ hereby/ therefore>(optional) <allowed/ permitted/ granted/ rejected/ declined/ disposed of/ dismissed>
4	<is/ are/ liable to be/ have to be/ should be/ shall be> set aside
5	<order/ direction/ decision/ verdict/ judgment> <will / shall> <set aside/ dispose of/ override/ nullify/ discard>
6	<is/ are/ should be><string><permitted/ granted/ allowed/ approved/ directed to/ rejected/ declined/ dismissed/ withdrawn/ disposed of/ accepted/ authorized>
7	<is not/was not/ are not/ shall not be/ should not be> <String> <permitted/ granted/ allowed/ approved/ accepted/ authorized>
8	<current-court/ this court/we> <accordingly/ according/ therefore/ hereby/ further/ also>(optional) <do not/ does not>(optional) <direct/ grant/ permit/ approve/ allow/ decline/ reject/ disprove/ accept/ authorize/ order>
9	<current-court/ this court/ we> <String>(optional) <comes to/ come to/ arrive at/ arrives at/ give/ gives> the <conclusion / conclusions/ verdict/ verdicts/ decision/ decisions/ order/ orders/ direction/ directions>
10	<current-court/we> <String> <make it clear/ take a final call/ clarify/ declare/ find it/ conclude>
11	<current-court/this court/ we> <String> <express no opinion/ decline to express opinion/ express no view/ decline to express any view>
12	<current-court/this court/ we> <order / ordered> accordingly.
13	<will/ shall> have <authority/ jurisdiction> <over/ on>
14	<interim>(optional) <direction/ directions/ order/ orders> <issued/ given/ published> by <the court/ this court/ current-court/ the current-court> <String> <is/ are/ shall be> made <absolute/ permanent>
15	If a prior order or direction is modified. Example patterns: (i) <i>The</i> <order / orders/ direction/ directions> <dated /on > <date value>(optional <is/ are/ shall be/ will be> modified accordingly (ii) <current-court/ this court/ we> <modify/modifies> the <order/ direction/ decision>
16	Any sentence that begins with the token <i>"Let"</i> forms a part of the conclusion. Usually, usage of <i>"Let"</i> is most common in the order documents.
17	Overriding of prior orders/directions/instructions. <This/ These/ following/ considered/ given> <order/ orders/ instruction/ instructions/ direction/ directions/ verdict/ judgment> <issue on / listed on> <date string> <shall/ will> override any <prior>(optional) <order / direction/ verdict/ judgment/ instruction> <to the contrary>(optional) by any authority.

Table 1.3: Rules for identifying Conclusion Verdict

etc.), verbs relating to permission, approval, withdrawal and disposal is used in past tense. e.g. the sentence *"It was stated that each tree commands a price of Rs.15 to 20 Lakhs in the market."* is a Fact. Ideall, any past event related to the case that was mentioned in a given judgment is a fact of the given case.

Rationale

Rationale covers two parts: One, the criteria for legal principle and two, fact. If the given sentence has any mention of identifier tokens for appellant, respondent or amicus or any advocate of the parties in the text, and any of the rules to detect legal principle also holds true, then we classify that sentence as a Rationale.

Interim Order

If the document type of the legal document is an Order, and date of the decision is greater than date of the filing of the case by 1 year or so: there is a probability that this order has mentions of Interim Orders. Interim Orders are sometimes part of the Conclusion. So, the same rules for "Conclusion Verdict" are applied here to understand whether it is an Order or not. Along with that, we check if there is any relief asked for in the document. If a relief is asked and the above conditions hold true, then the sentence is likely to be an Interim Order. However, no clear rule can be established for such cases. Additionally, existence of certain patterns may help to identify the interim orders in some cases, e.g. *< till/ until> <the> (optional) <court / present court/ this court/ current-court > <pass/ passes/comes to/ come to/ take/ takes/ provide/ provides/ give/ gives/ reach/ reaches/ arrives at/ arrive at> <a/ the>(optional) <final/ next/ new> <order/ orders/ judgment/ direction/ directions/ verdict/ conclusion>*. This pattern explicitly indicates that certain instructions or decisions are made by the court in present case until the court reaches a final verdict. Classifying a sentence as Interim order is situational and often hard for the lawyers themselves to distinguish this from conclusion.

Compliance

We can recognise a compliance by using a set of indicator keywords that signify compliance. E.g. *"complied with", "complied to", "in compliance", "complied by"*. We used the following patterns for the purpose: (i) *<has/ have/ had/ was/ were/ is/ are> <complied with/ complied to/ complied by>* (ii) Presence of the phrase "in compliance".

If any identifier token for the appellant or respondent is present in the sentence along with any of the compliance patterns and the sentiment of the sentence is positive, then it is a stronger indication of compliance.