

@rudifa working on <https://github.com/cue-lang/cue/issues/2567>

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My opinion:

- cue fmt (parser + formatter) should respect the author’s intended comment's purposes

Observations:

- while cue fmt does not drop any comments (afaik),
- sometimes it misplaces comments, so that the sense of the comment is lost
- sometimes it produces invalid cue by placing code items behind a comment

My understanding of cue comment kinds and what to do about them:

- Line comment (follows a syntax element and terminates the line, possibly extended by adjacent full line comments)
 - user says something about the syntax element preceding it
 - cue fmt should not separate the comment from its element (should not insert anything between them; should not move the comment to another line)
- Doc comment (one or more comment lines directly above a syntax element, without an intervening blank line)
 - user says something about the element that follows
 - formatter should not separate the doc comment from the element, e.g. in simplifying the cue expression, requested with -s option or not
- Floating comment or group (one or more contiguous comment lines, separated from the next syntax element by a blank line, possibly not separated from the preceding element)
 - user says something about the cue file or a part of the file
 - cue fmt should not attach the comment to the preceding element

comment kind	cue implementation + observed behaviour	opinions
Line comment or group (follows a syntax element and terminates the line)	Parser attaches it to a nearby Node (sometimes the Node that contains the syntax element) In several issues, the formatter misplaces the comment	Line comment should perhaps be attached to the Node representing the syntax element immediately preceding it, not to the parent Node of the element
Doc comment or group (one or more comment lines directly above a syntax element, without an intervening blank line)	Mostly formatted correctly Investigate: case of Doc comment misplaced in simplification	
Floating comment or group (one or more contiguous comment lines, separated from the next syntax element by a blank line, possibly not separated from the preceding element)	Parser identifies it as !(Line Doc) Investigate: case of comment following an import statement that `cur fmt` places into the import clause	It might be necessary to create a separate Node to contain the CommentGroup in this case

Examples of issues (CUE v0.7.0)

<i>in.cue</i>	<i>got.cue</i>	<i>issue; notes</i>
2567 % cat 2567.cue foo: [bar["baz"], //some comment]	2567 % cue.f 2567.cue foo: [bar["baz" //some comment],]	<ul style="list-style-type: none">+ https://github.com/cue-lang/cue/issues/2567• invalid cue
2567 % cat 2567-2.cue [if true // about this condition {}]	2567 % cue.f 2567-2.cue [if true {} // about this condition]	<ul style="list-style-type: none">• invalid cue
2567 % cat 2567.1.2.3.cue [// about this clause if true // about this condition {} // about this value]	2567 % cue.f 2567.1.2.3.cue [investigate-formatter--and-parser L ✓] [// about this clause if true {} // about this condition, // about this value]	<ul style="list-style-type: none">• misplaced comments
Looking at the implementation of parser and formatter		
Parser attaches a CommentGroup (if any) to a Node, with a Position relative to elements of the Node.		In some issues, comments appear to be attached to the wrong node.