

Figurative Language Annotation Instructions

Task Description and Annotation Guidelines: You are invited to take part in the annotation study of developers' communication in FOSS projects, e.g., pull requests and issue comments. We are interested in annotating the presence of figurative language in these online developer interactions, focusing on only two types of figurative language: *metaphors and idiomatic expressions*.

Metaphor: A metaphor is a figure of speech that describes one thing by mentioning another thing. Metaphors can be conventional, i.e., very commonly used, or novel, i.e., rarely used (see examples 3 & 4 below, and can be used in the context of software programming). For example, in the following texts some words are marked (underlined) as metaphorical.

1. She gave him that idea.
2. I see the point.
3. Function keyword is bashism.
4. Some books have to be tasted.

Idiomatic expression: Idiomatic expressions are groups of words with an established meaning unrelated to the meanings of the individual words. For example:

1. He let the cat out of the bag (accidentally told a secret).
2. She got off Scott-free (escaped without punishment).
3. He flew off the handle (went crazy).
4. That's a great resource, I will keep in mind for future PRs (remember something in the future).

Task: We will provide you with a set of sentences and for each sentence one or more candidate words or phrases that represent figurative language (see examples below). The metaphor words are either verbs or nouns, while the idiomatic expressions are phrases or a span of words. For each sentence perform the following sequence of steps:

1. Read the sentence carefully and establish a general understanding of its meaning. If you have difficulty understanding any word or phrase, look up its meaning in the dictionary (i.e., www.dictionary.com, <https://www.merriam-webster.com>) or use Google.
2. Verify whether the provided metaphors/idiomatic expressions are correct.
 - a. To verify a metaphor: (following [MIP](#) guidelines):
 - i. For each word establish its meaning in context and try to imagine a more basic meaning of this word in other contexts.

- ii. If you can establish the basic meaning that is distinct from the meaning of the word in this context, the word is likely to be used metaphorically.
- b. To verify an Idiomatic Expression (IE):
 - i. To understand the meaning of the IE, look up its meaning in a dictionary such as Oxford English Dictionary (<https://www.oxfordlearnersdictionaries.com>), the Webster Dictionary (<https://www.merriam-webster.com>), and the Longman Dictionary of Contemporary (<https://www.ldoceonline.com>), etc. Note that software-specific words have different meanings than conventionally used terms (e.g., bug, issue, error, function, etc). You can lookup SE-specific glossary terms here: [Glossary of Computer System Software Development Terminology](#), [Machine Learning Glossary | Google Developers](#)
 - ii. If the dictionary definition of the IE is: 1) applicable in the context, and 2) a good fit syntactically in the same environments as the original IE, then it's likely to be an idiom. Example:
 1. But I will also be keeping an eye on you.
 - iii. If the meaning of the candidate IE is literal in the context of the sentence, and the dictionary definition is not applicable, it's likely that it's not an idiom. Example:
 1. It was cold, so cold in the jeep that it was with difficulty that Alexei kept his eyes open.
3. Rewrite the sentences while replacing all of the figurative words (and context if applicable) with literal words without changing the meaning.
4. If the sentence does not contain any figurative language leave it as is and the columns blank.
5. When the candidates are figurative language, mark whether they are software engineering (SE) specific or general.

Below we show a set of examples of annotations. The left two columns (highlighted in green) would be provided to you. The third and fourth columns should be filled out by you during annotation.

Examples:

Sentence	Candidate	Figurative Language	Replacement	SE - specific fig. lan.	General fig. lan.
You're a star.	star	star	You're a hero.	-	star
My brain must've still been on vacation.	vacation	vacation	My brain must've still been distracted.	-	vacation

I will take the idea mentioned above and add tests.	take, add	take	I will accept the idea mentioned above and add tests.	-	take
Could you show me how to resolve this issue please?	show	-	-	-	-
How about ASKING THE USER? Did that ever cross your mind?	cross your mind	cross your mind	How about ASKING THE USER? Did you ever think of that?	-	cross your mind
I'd forgotten to commit some local changes.	commit	commit	I had forgotten to make some local changes.	commit	-
wraps the logic in an assert	wraps the logic	wraps the logic	Collects the main details in an assert	wraps the logic	-