Different project directions: Pros and Cons

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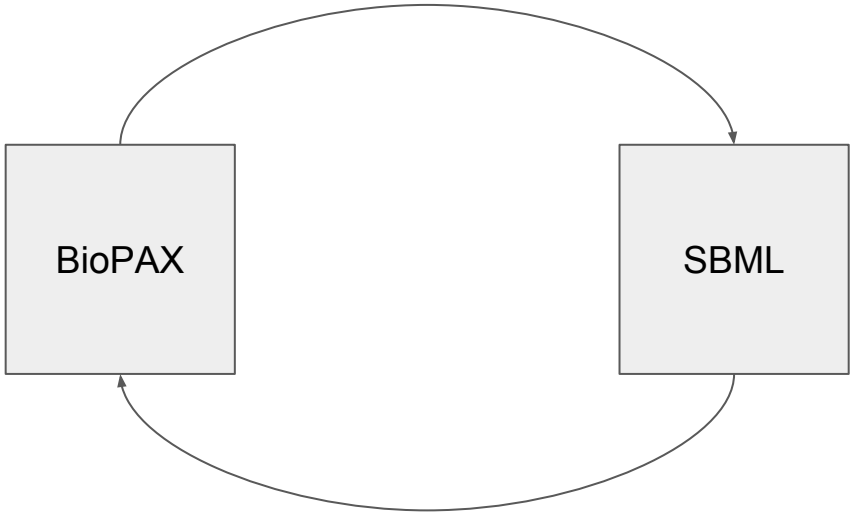
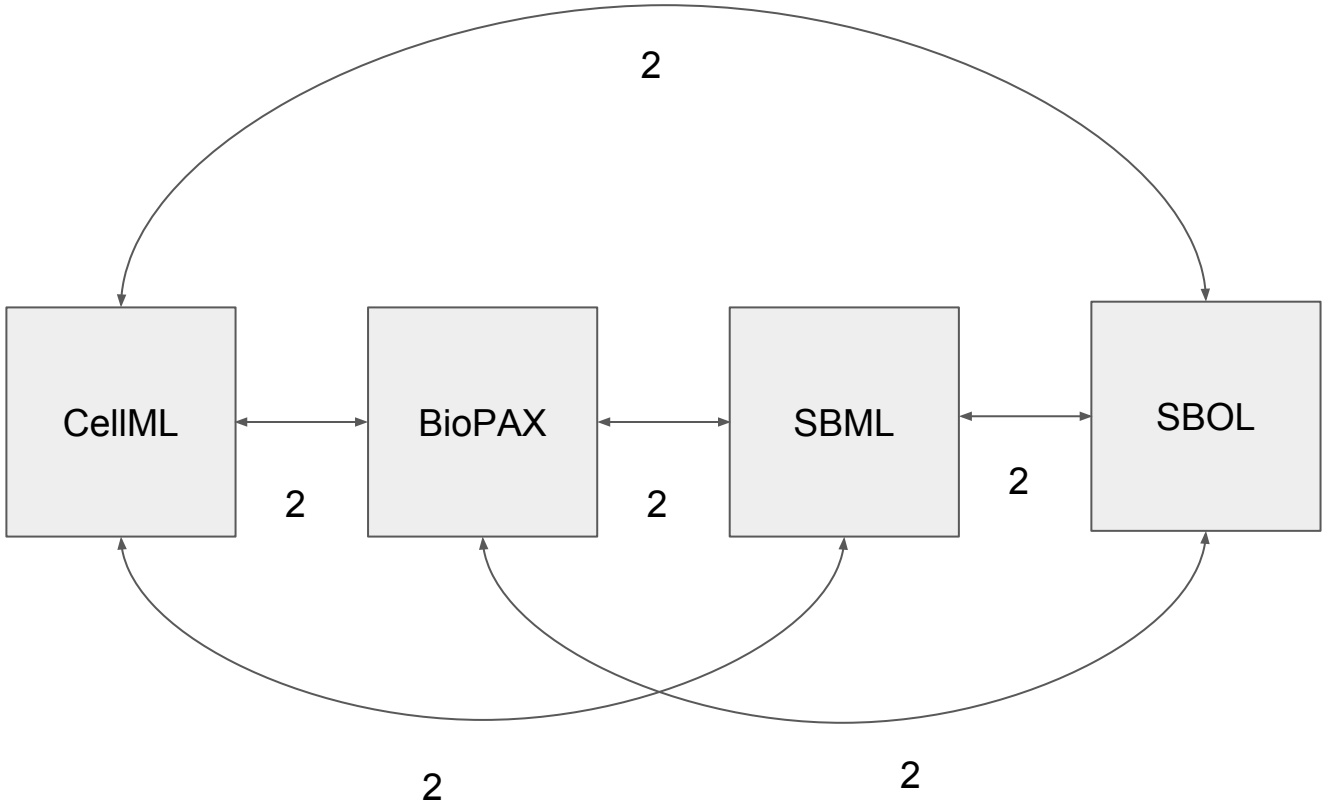
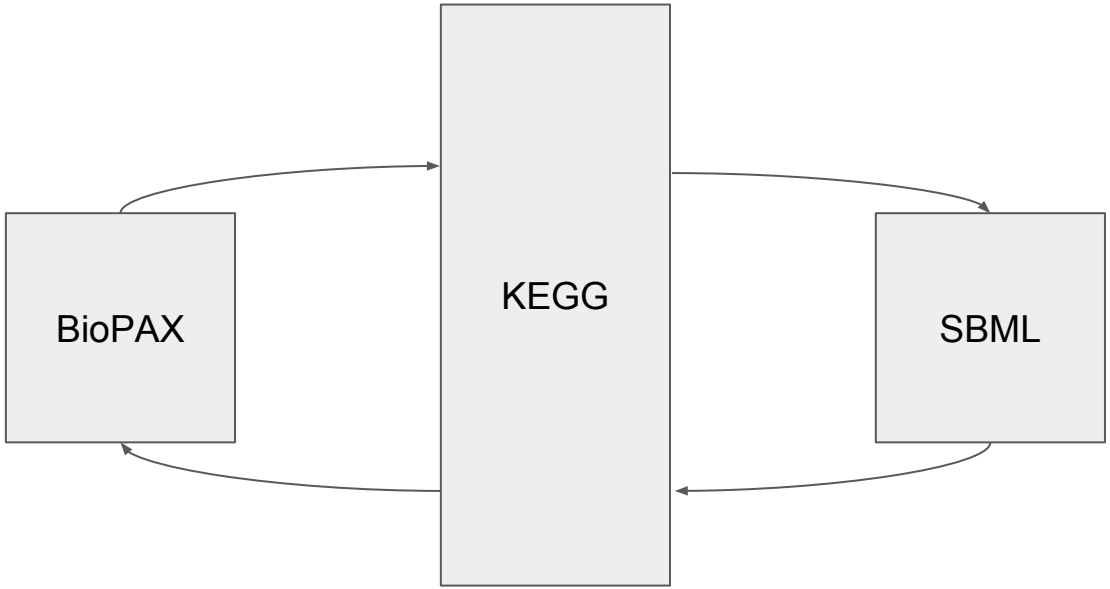
Google Summer of Code 2016


BioPAX
SBML

BioPax⇔ SBML

Pros(+)	Cons(-)
1. Direct conversion. No intermediate translator. Don't need to understand a different data representation. Pipelining multiple conversions can result in loss of information. 2. Start with fresh project. a. I do not need to understand past contributor's code. b. New project will allow future contributor(s) to continue on with project with minimal issues. Since there is no intermediate translator being used, this requires that the contributor must understand BioPAX and SBML. 3. Saves time on understanding other people's code. a. Would only have to understand the 2 libraries for the conversion: BioPAX and SBML	1. Depending on use of conversion, conversion can be $n \cdot m$ for future extensions where n is the number of standards and m is the number of interconversions. 2. Previous code might not be reused.

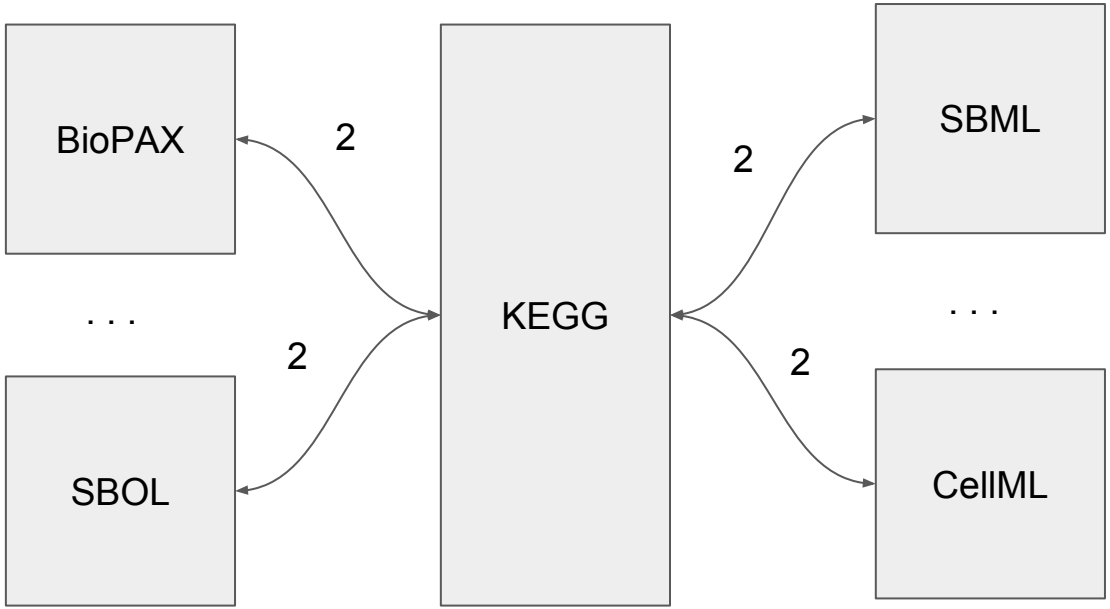

2
CellML
BioPAX
SBML
SBOL
2
2
2
2
2

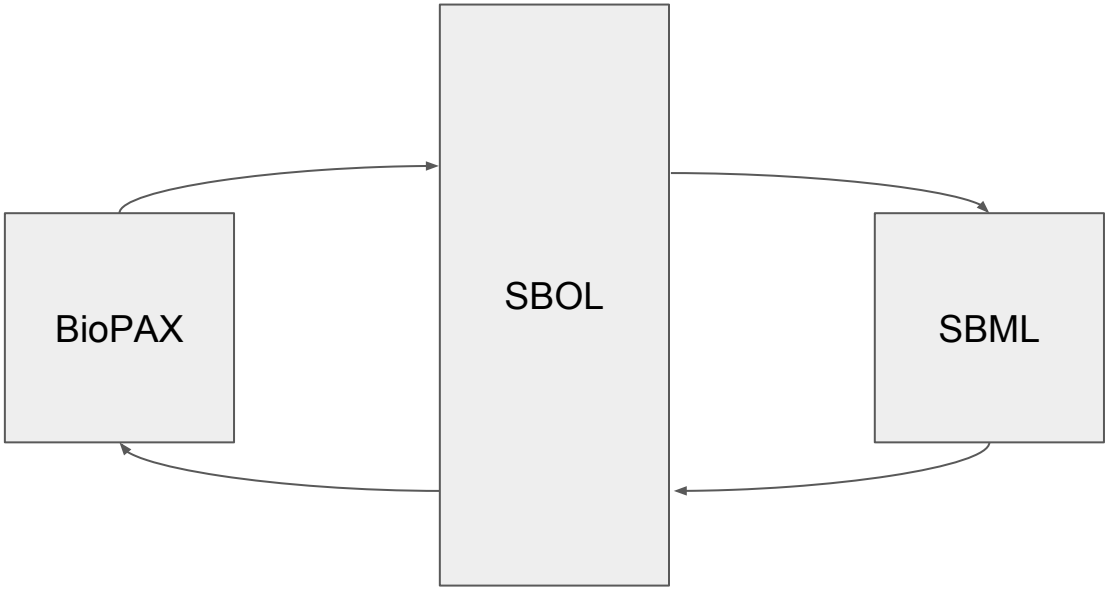

BioPAX
KEGG
SBML

BioPax⇔ KEGG⇔ SBML

Pros(+)	Cons(-)
1. Past contributors and people who are familiar with conversion can continue on with project after GSoC program is over.	1. Assume that the conversion is working between BioPAX-KEGG-SBML with no bugs.
2. Conversion will be at most n+m with the use of the KEGGtranslator where n is the number of standards converted to KEGG and m is the number of standards produced from KEGG.	2. GSoC Goal: open-source code. a. Needs a license for a 60 day trial to use yFiles to generate graphs used in conversion code. b. GSoC is longer than trial period. c. KEGG requires paid subscription. d. Will code be maintainable for future developers if license no longer become available?
3. Easier for the community to maintain since if they know KEGG.	3. Time consuming a. Familiarize self with past contributor's code. b. Familiarize self with KEGG

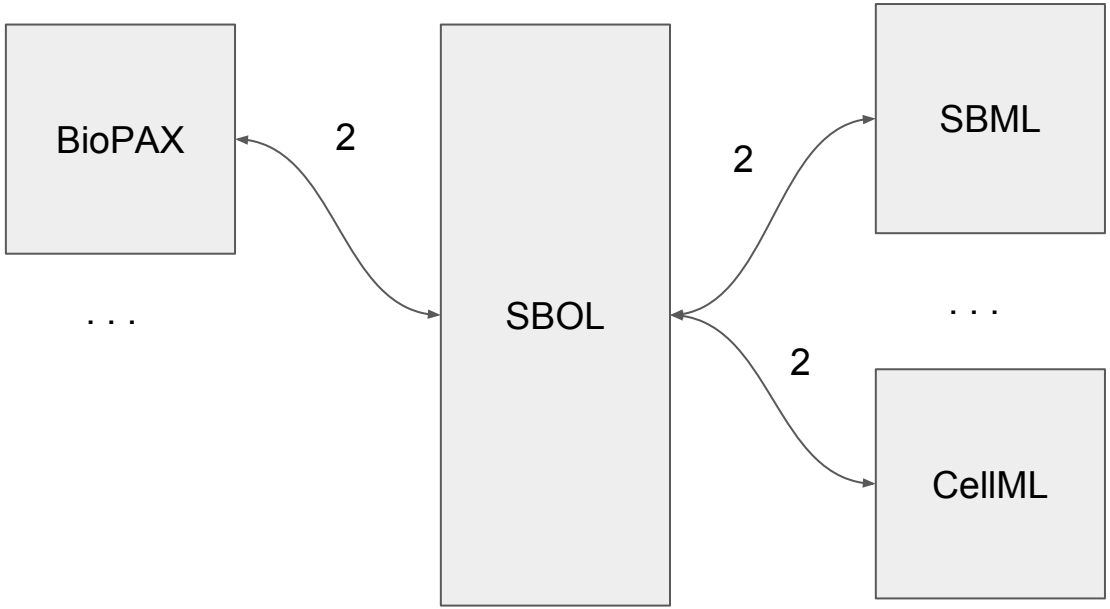
n = 4
m = 4




BioPAX
SBOL
SBML

BioPax⇔ SBOL⇔ SBML

Pros(+)	Cons(-)
1. Conversion has been done between SBML and SBOL.	1. SBOL will replace KEGG as the intermediate translator. Community not as familiar with SBOL, which makes harder for them to maintain.
2. I've implemented the conversion for SBML to SBOL so therefore, I am familiar with the code base.	2. Need to implement conversions to and from BioPAX and SBOL. a. Will not be as hard to do since BioPAX and SBOL standards are quite similar.
3. If we were to take this direction for the conversion, this path will be for my personal interest since this is the reason why I wanted to work on this project, which is to carry on with the BioPAX to and from SBML conversion to include SBOL.	3. Would have to understand code going from SBOL to SBML written by Nic Roehner.
4. Depending on use of conversion, conversion is n+m.	4. Need to implement conversion between SBML qual and BioPax.


BioPAX
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SBML
2
. . .
SBOL
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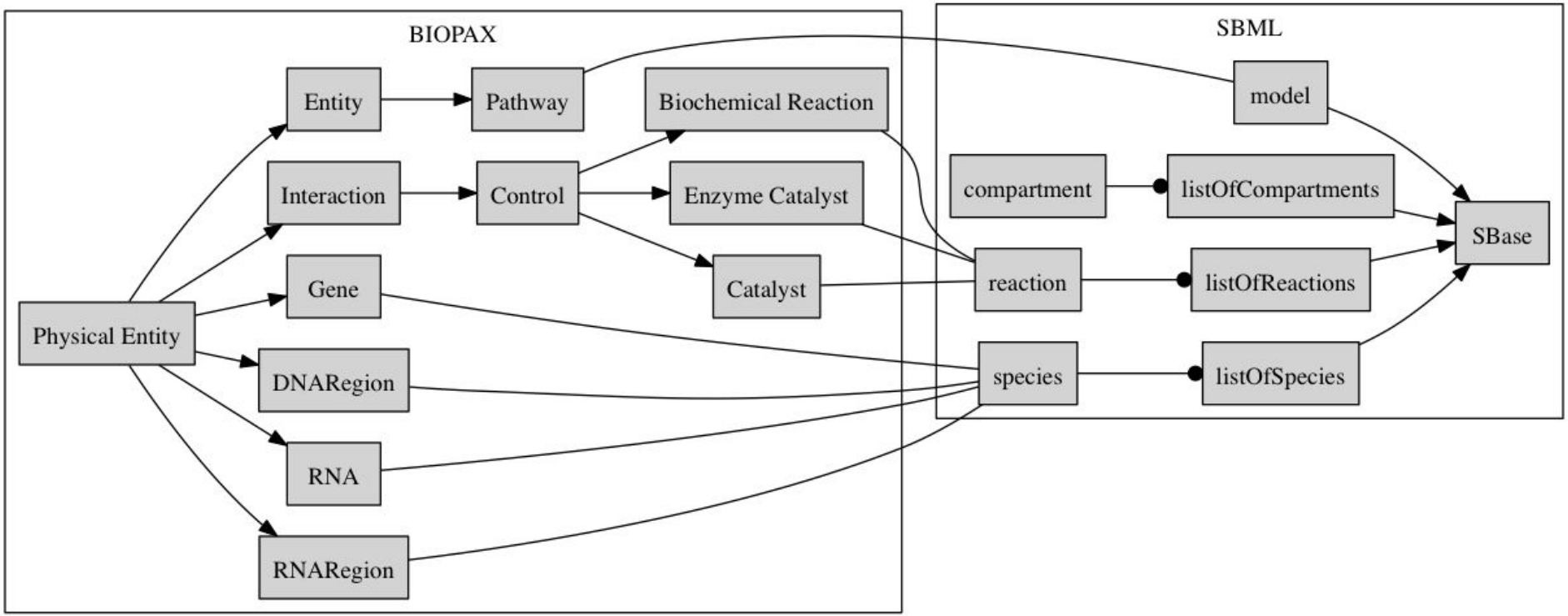
2
CellML

BioPAX2SBML



SBML2BioPAX (SBFC)