The logo for General Bioinformatics features a large, stylized 'G' in light grey on the left and a large, stylized 'B' in light green on the right. Above the 'B' is a horizontal line of five circles of varying sizes, transitioning from light grey to light green. Below the 'G' and 'B' is the text 'General Bioinformatics' in a light green, sans-serif font.

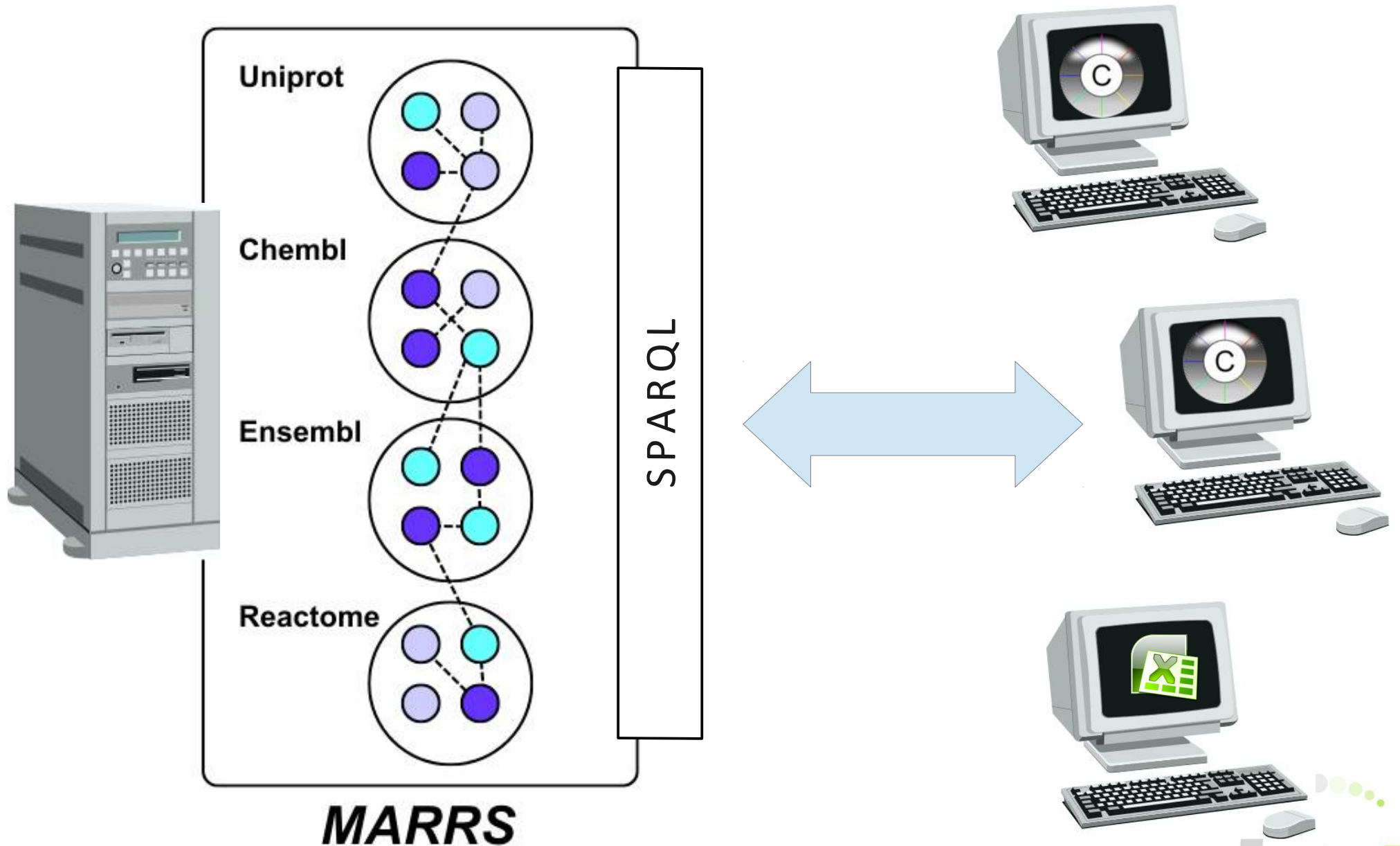
From science questions to SPARQL queries

General Bioinformatics

EUON - 25 Sep 2014

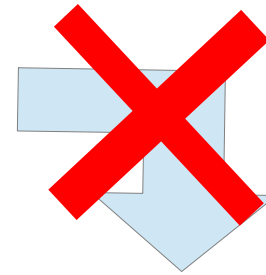
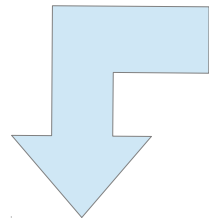
martijn@generalbioinformatics.com

General Bioinformatics



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“Which proteins are good targets for killing aphids but not bees?”

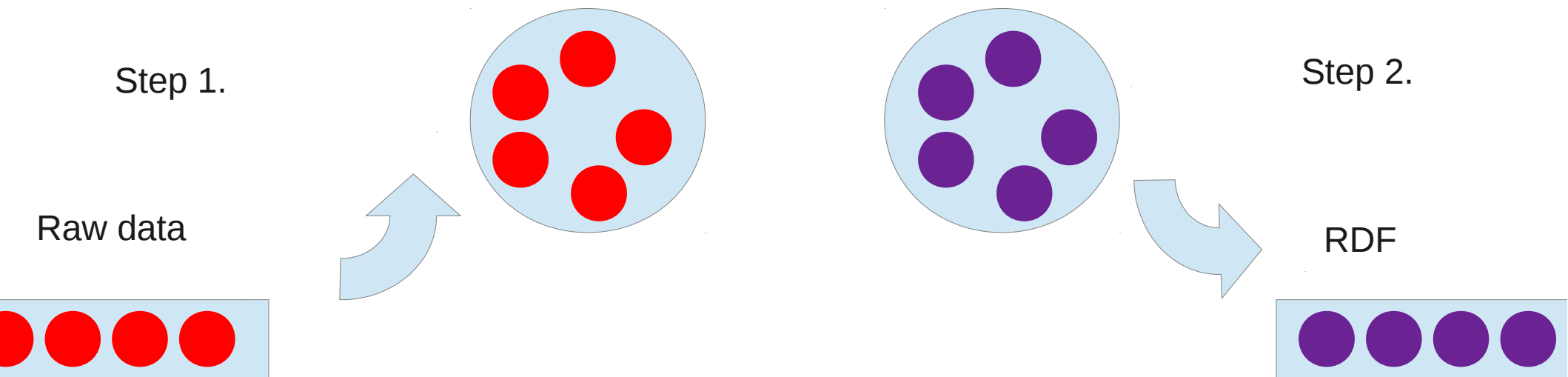


“Which proteins are good targets for killing aphids but not bees?”

- Essential proteins ← FlyBase
- Taxonomy ← NCBI
- Protein similarities ← Ensembl

<http://identifiers.org/ncbigene/37130>

ncbigene 37130
database local
name identifier



Step 1.

Raw data

Step 2.

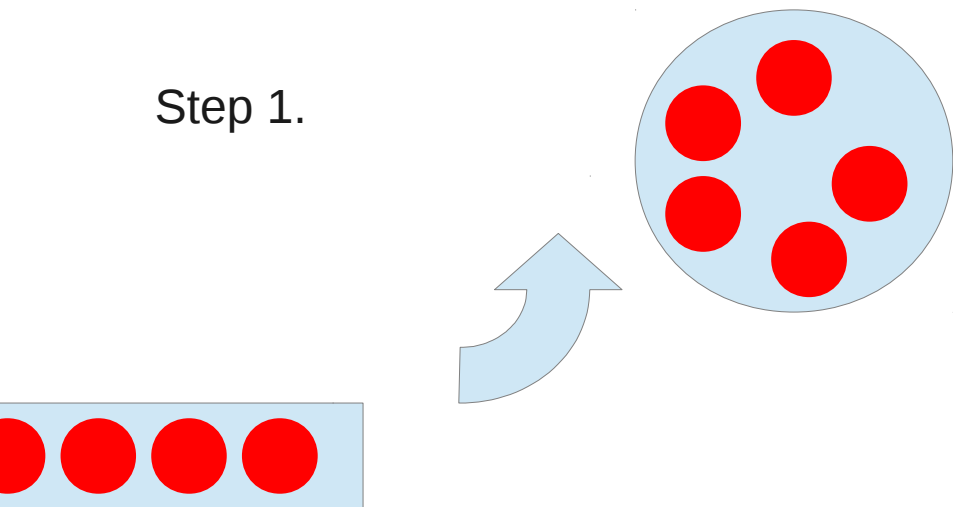
RDF

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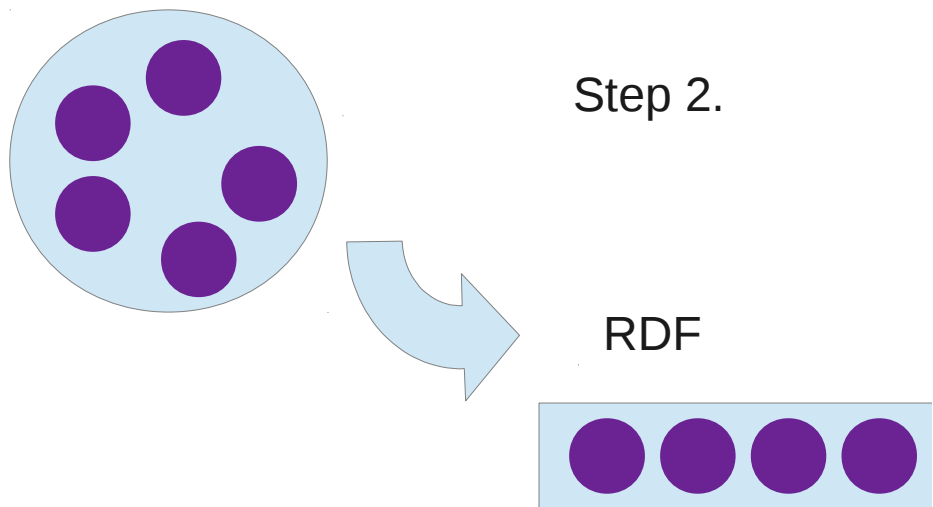




Step 1.

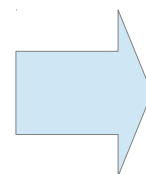
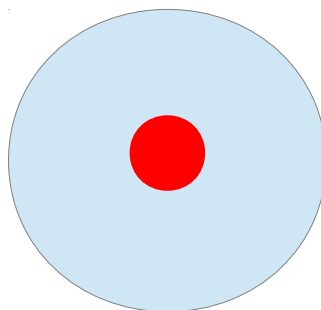
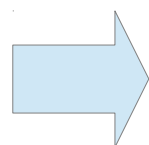
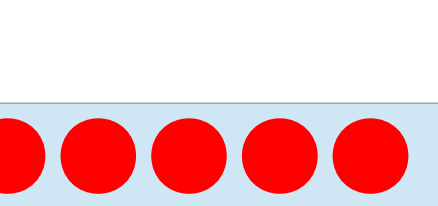


Step 2.

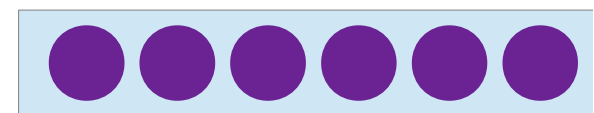


RDF

Raw Data



N-Triples



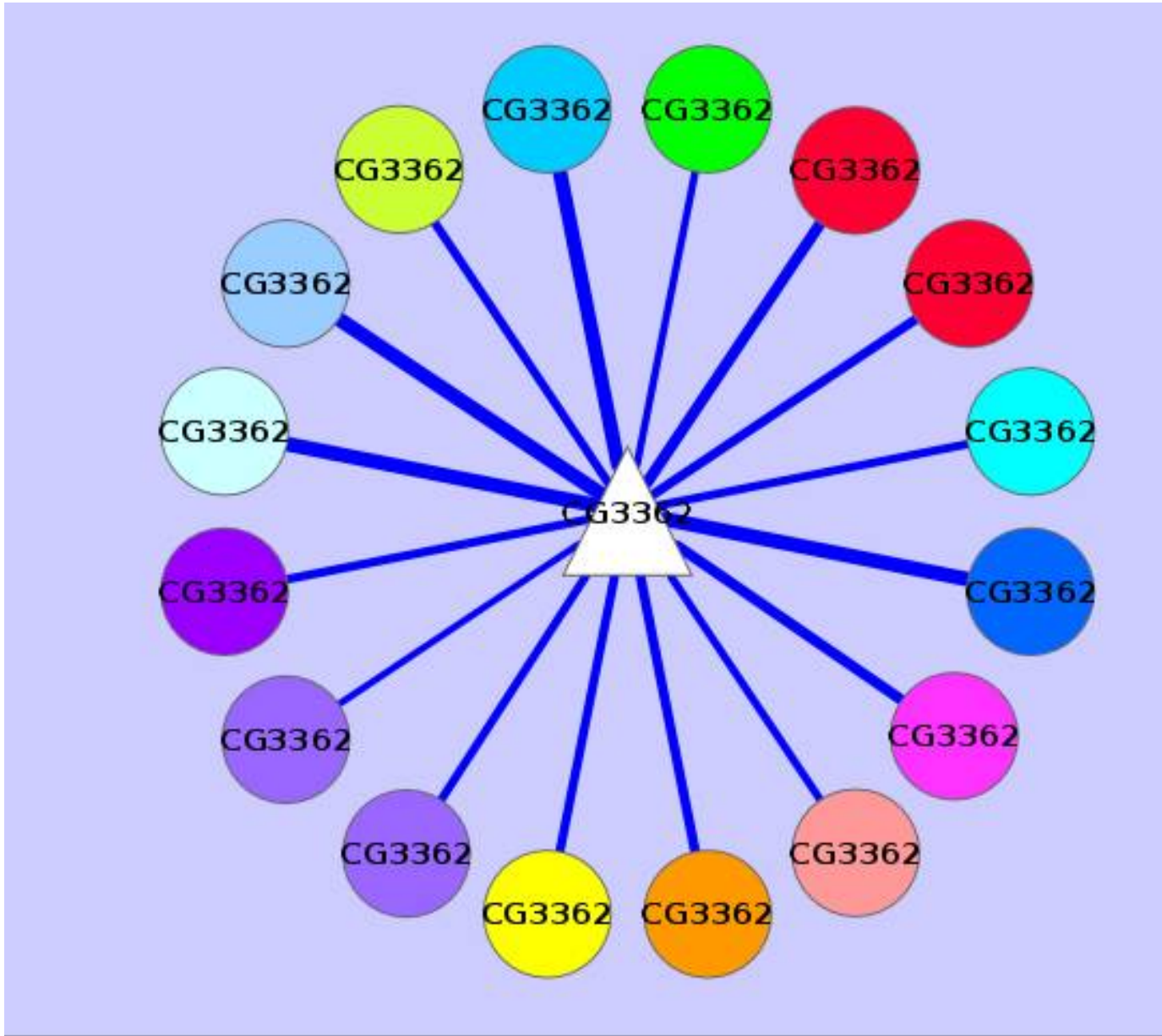
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	F	G	H	I
	Order	Group description	Latin name	Common name
0	Coleoptera	Beetles	Tribolium castaneum	Red flour beetle
66	Diptera	Flies	Megaselia scalaris	Scuttle fly
51	Diptera	Flies	Anopheles darlingi	American malaria mosquito
9	Diptera	Flies	Aedes aegypti	Yellow fever mosquito
5	Diptera	Flies	Anopheles gambiae	Malaria mosquito
6	Diptera	Flies	Culex quinquefasciatus	Southern house mosquito
7	Diptera	Flies	Drosophila melanogaster	fruit fly
49	Hemiptera	Aphids, bugs, lice	Rhodnius prolixus	Kissing bug
9	Hemiptera	Aphids, bugs, lice	Acyrtosiphon pisum	pea aphid
5	Hymenoptera	Wasps, ants and bees	Nasonia vitripennis	jewel wasp
0	Hymenoptera	Wasps, ants and bees	Apis mellifera	Honey bee
40	Lepidoptera	Butterflies and moths	Heliconius melpomene	Postman butterfly
1	Lepidoptera	Butterflies and moths	Bombyx mori	Silk moth

- “bees” hasParent ... hasParent ... hasParent ... ?x
- ?x is a taxonomic Order

```
SELECT *
FROM <http://marrs.generalbioinformatics.com/taxonomy>
WHERE
{
  ?child taxon_vocab:hasParent+ ?parent
  ?parent a taxon_vocab:Order .
}
```



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Thank you!

martijn@generalbioinformatics.com