From science questions to SPARQL queries

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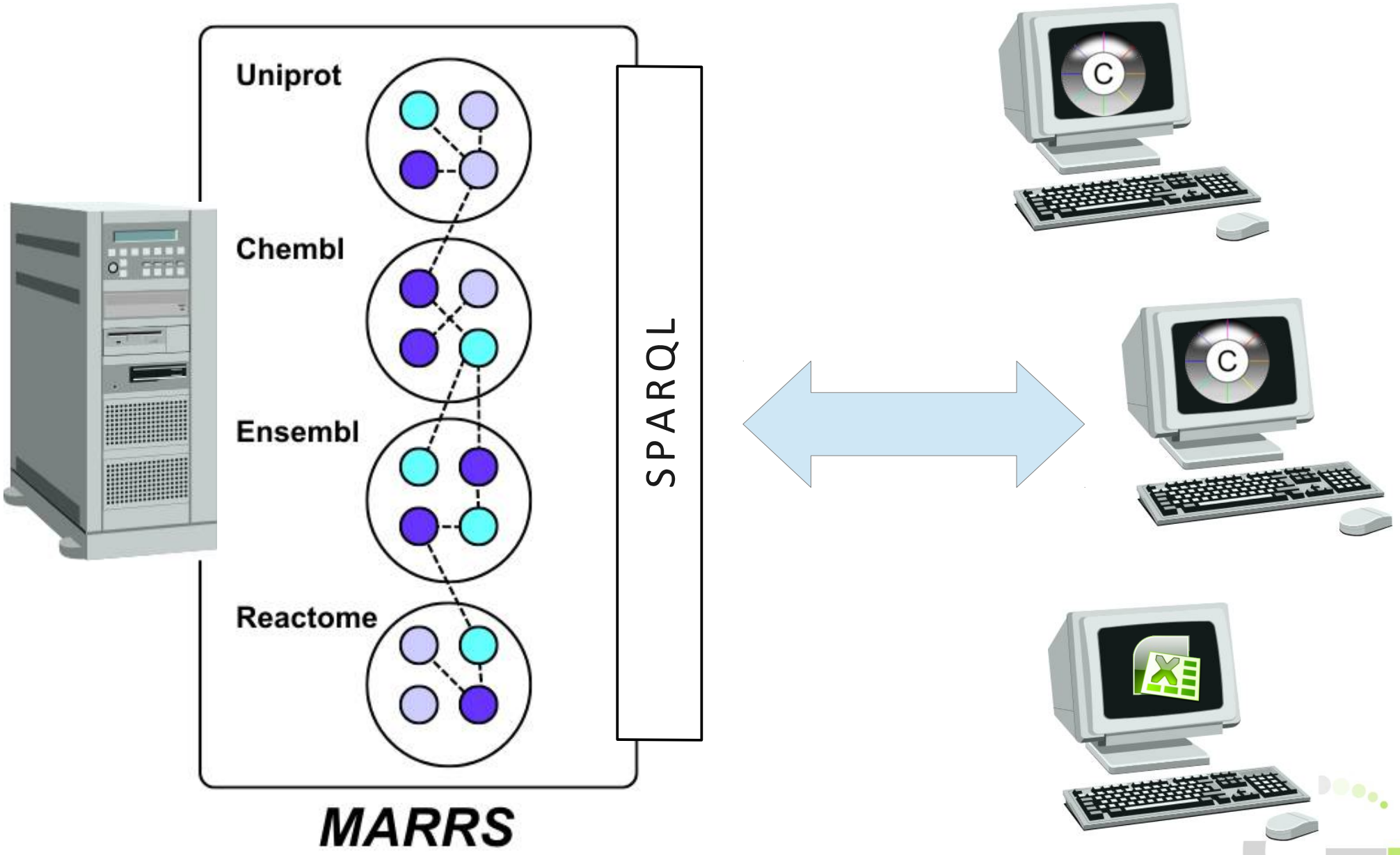
General Bioinformatics



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

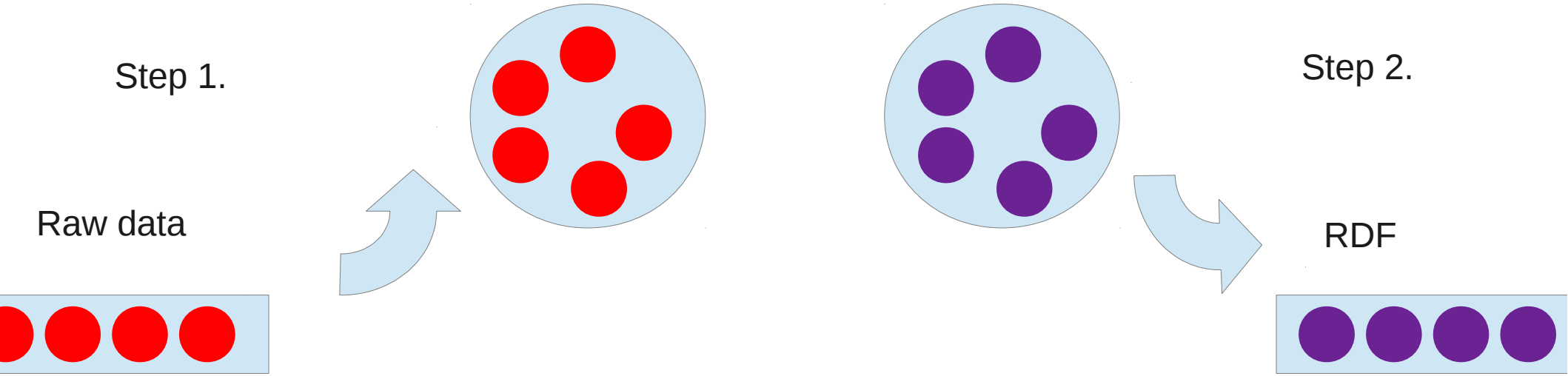
"Which proteins are good targets for killing aphids but not bees?"

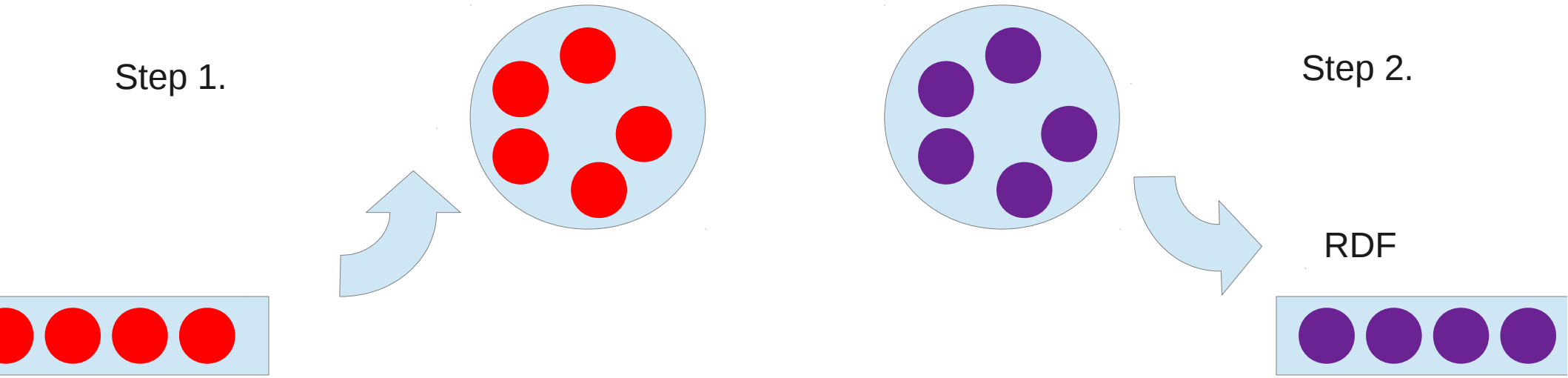
- Essential proteins ← FlyBase
- Taxonomy ← NCBI
- Protein similarities ← Ensembl

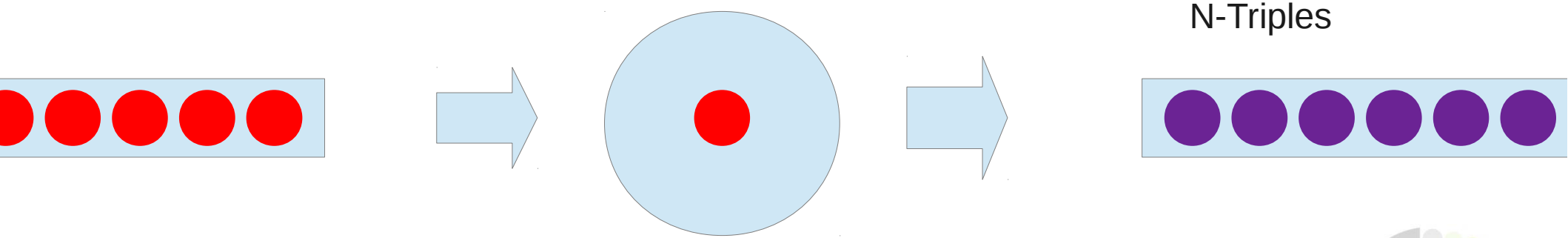
http://identifiers.org/ncbigene/37130

database name

local identifier


Step 1.
Raw data
Step 2.
RDF

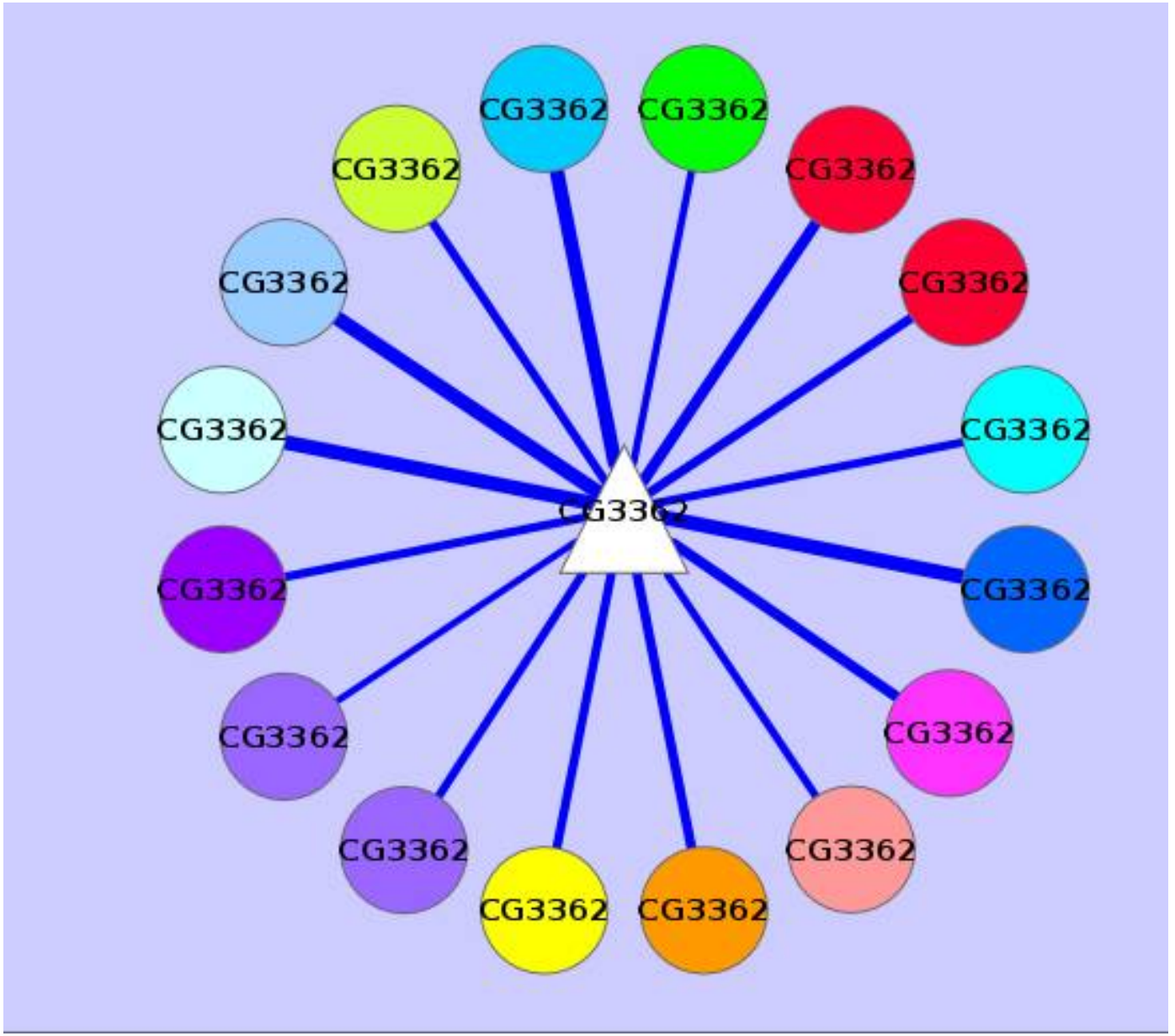




	F	G	H	I
	Order	Group description	Latin name	Common name
0	Coleoptera	Beetles	Tribolium castaneum	Red flour beetle
66	Diptera	Flies	Megaselia scalaris	Scuttle fly
51	Diptera	Flies	Anopheles darlingi	American malaria mosquito
9	Diptera	Flies	Aedes aegypti	Yellow fever mosquito
5	Diptera	Flies	Anopheles 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	Acyrthosiphon pisum	pea aphid
5	Hymenoptera	Wasps, ants and bees	Nasonia vitripennis	jewel wasp
0	Hymenoptera	Wasps, ants and bees	Apis meillfera	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 .
}
```



Thank you!

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