The chado *genetics* module

GMOD Meeting

4/26/2004

Cambridge, MA

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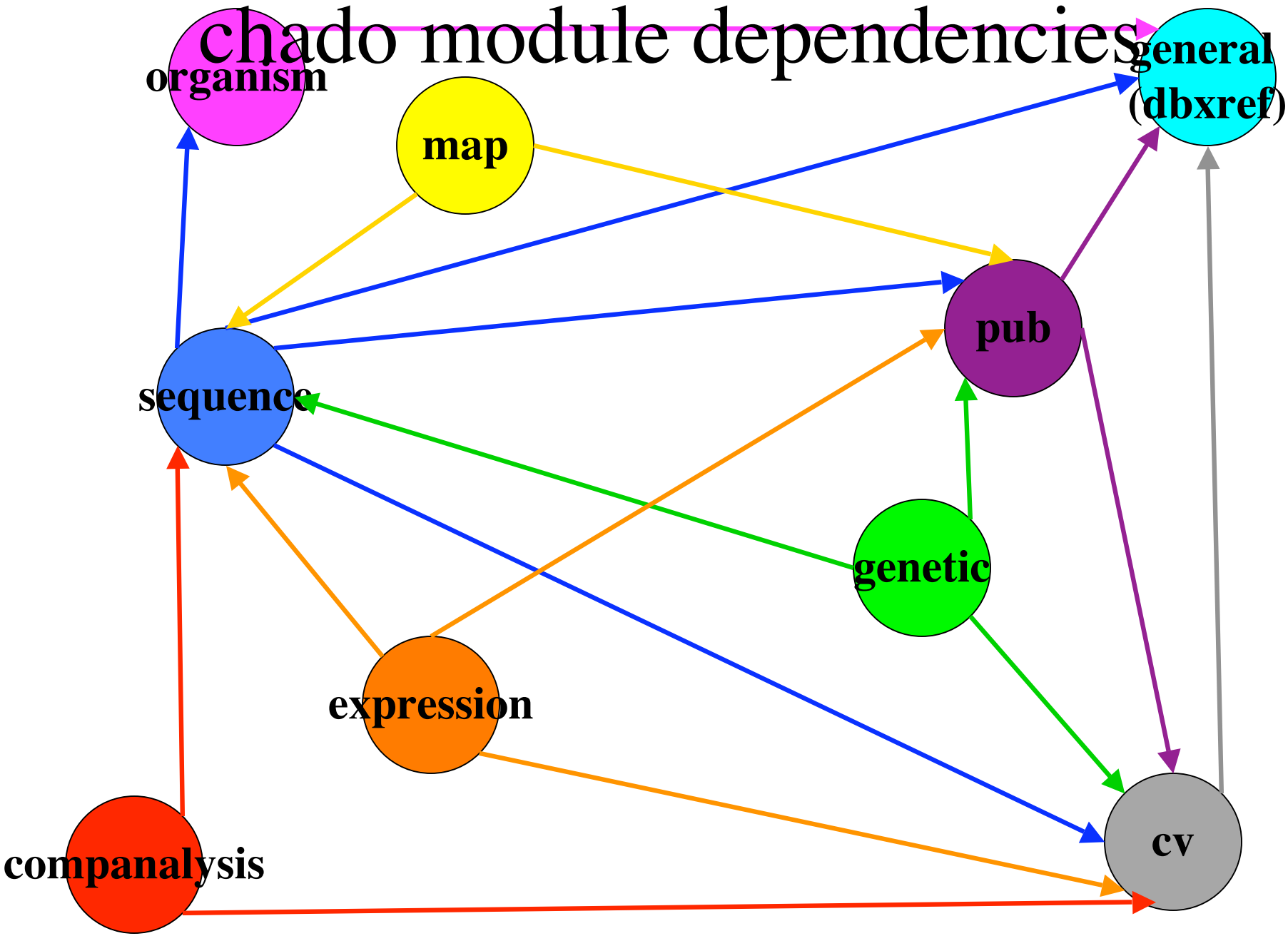
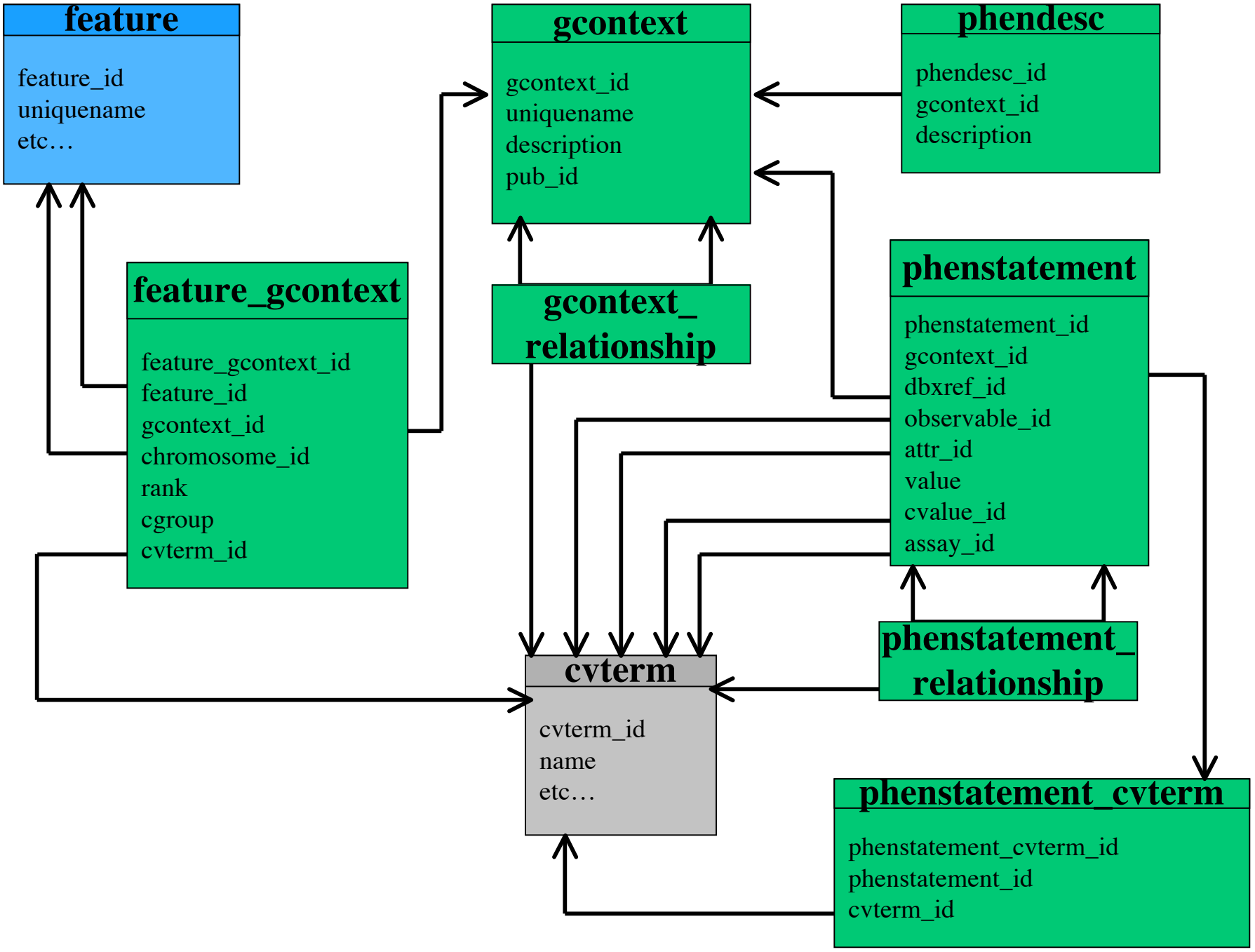

chado module dependencies
organism
general
(dbxref)
map
pub
sequence
genetic
expression
companalysis
cv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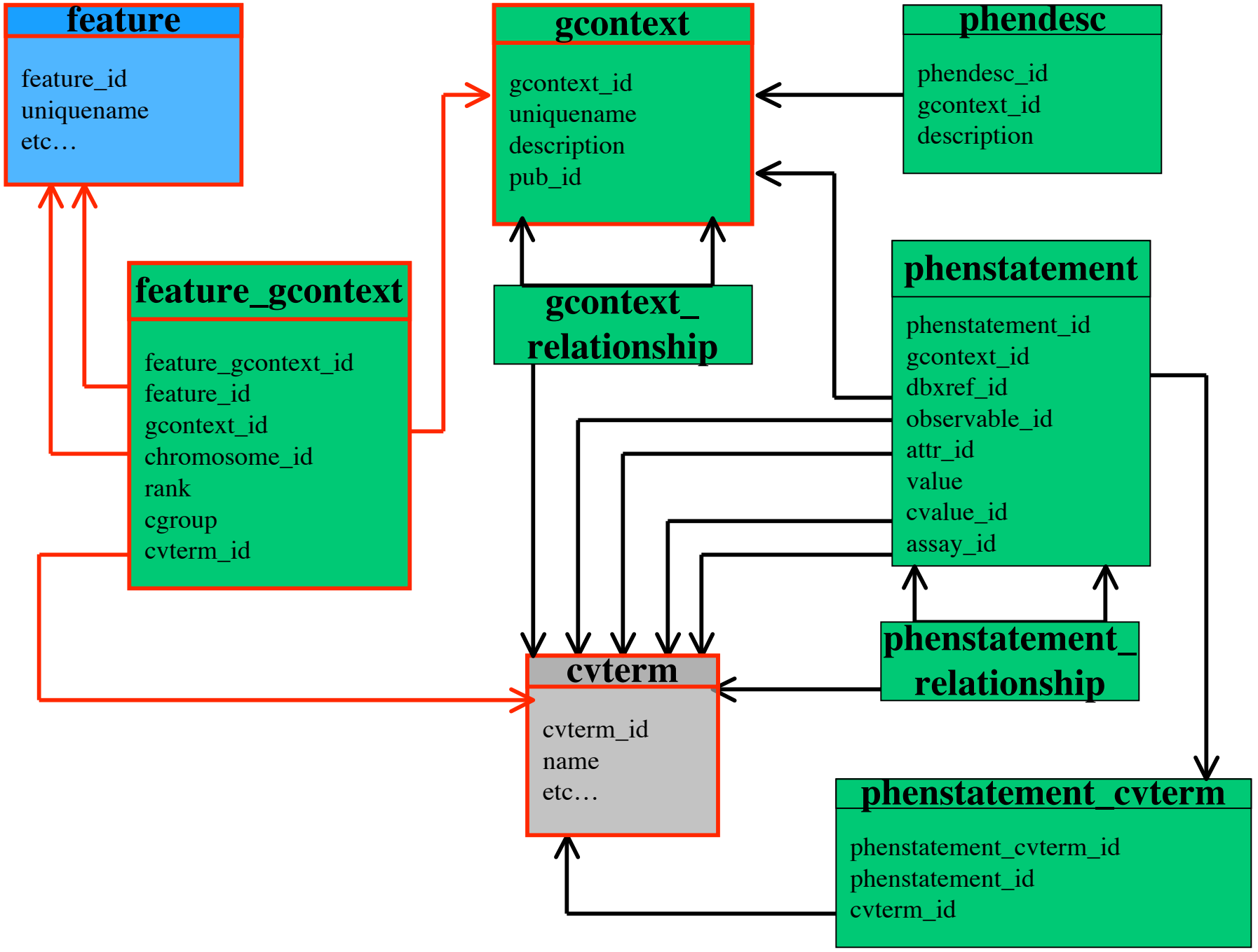
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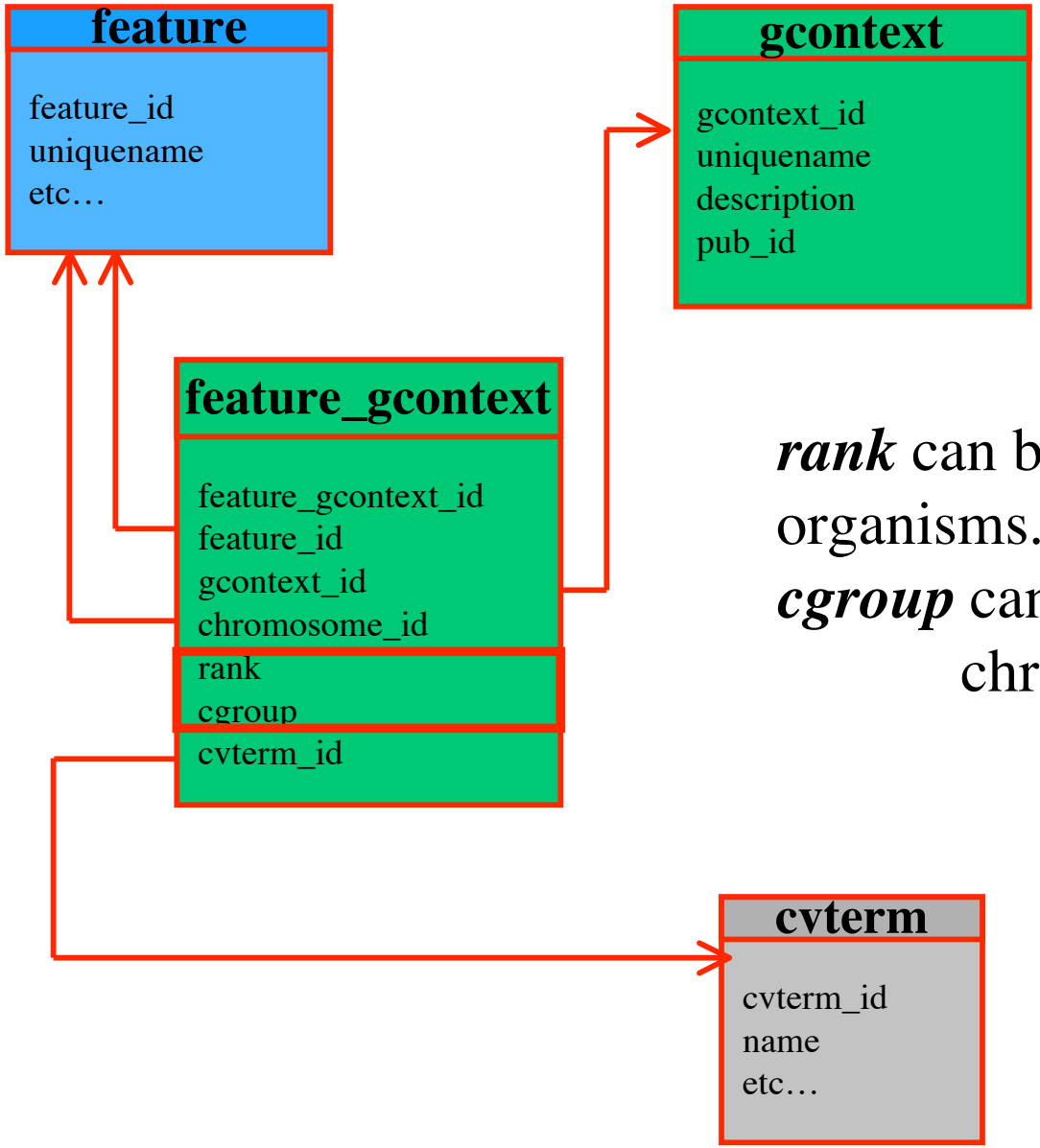
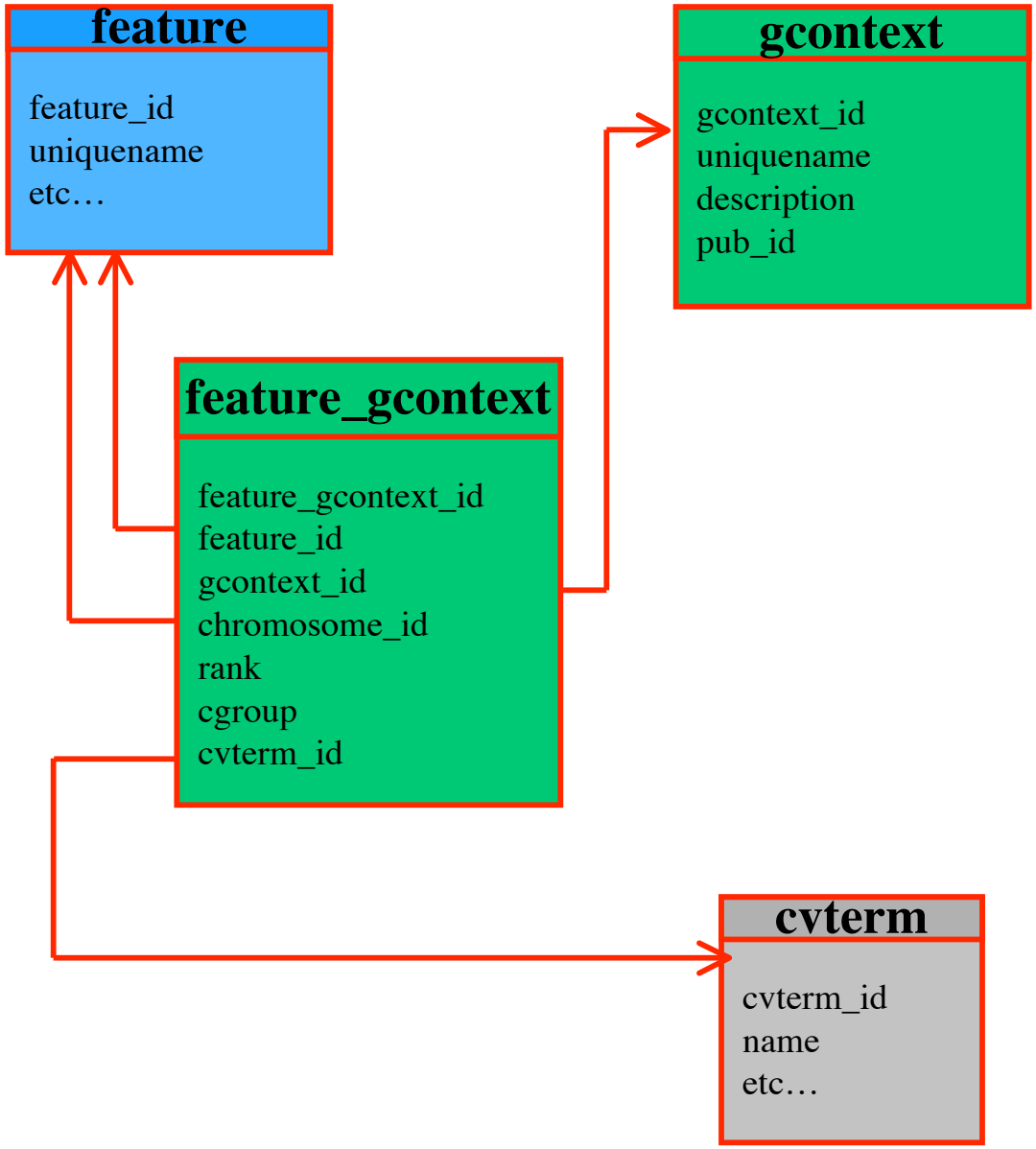


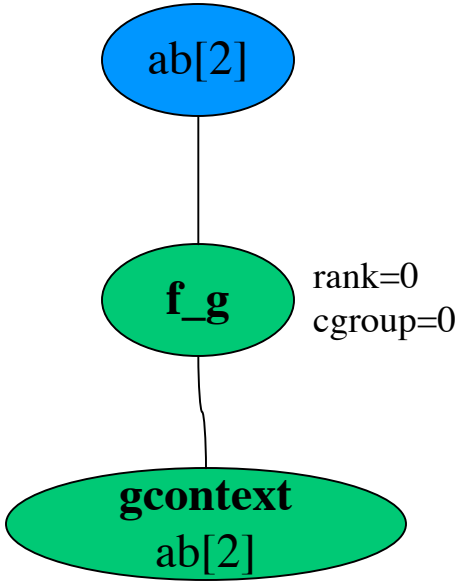
rank can be used for n-ploid organisms.

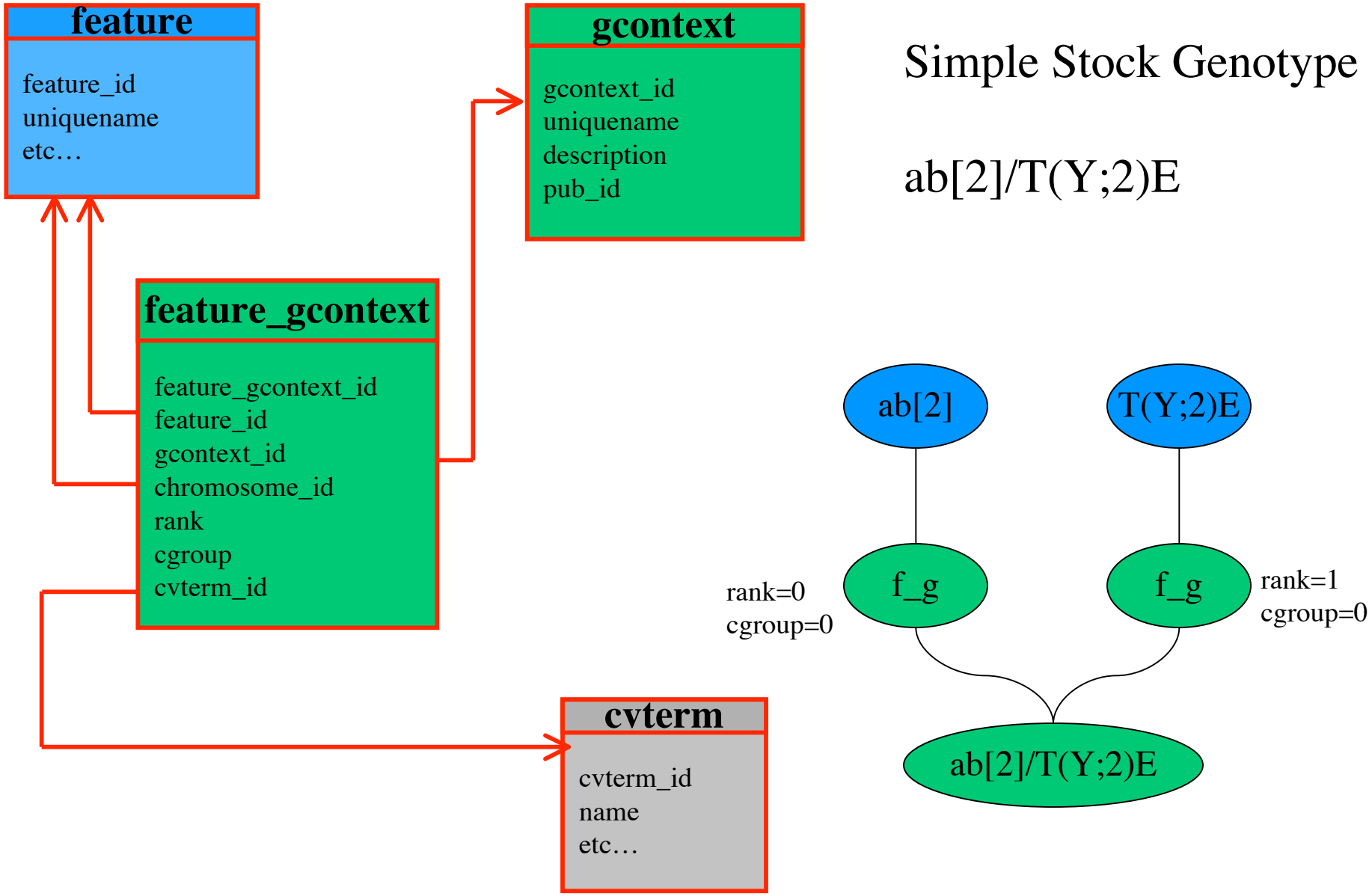
cgroup can be used for distinguishing chromosomal groups



Partial Genotype
(aka: allele)

ab[2]

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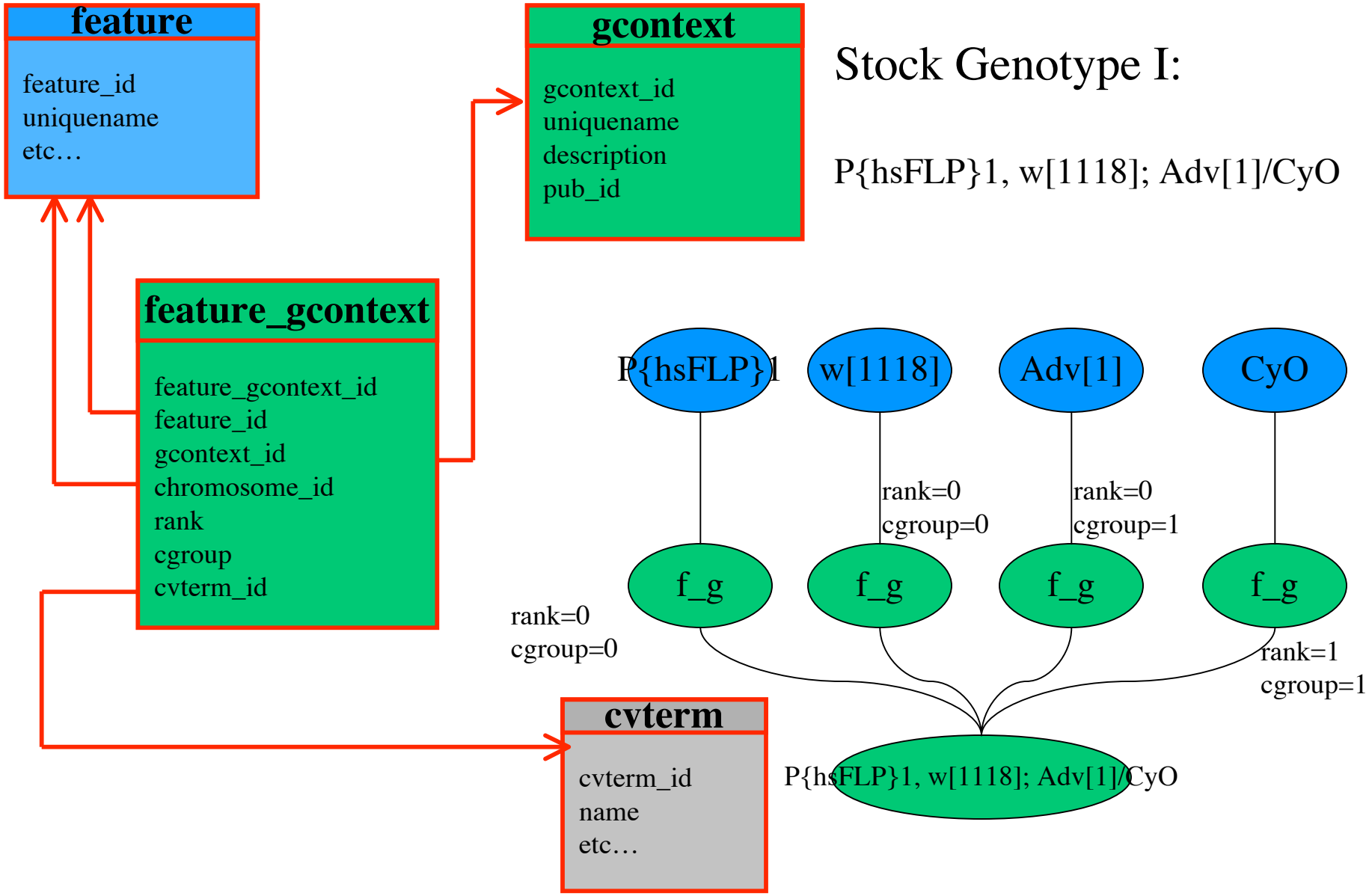
feature_gcontext_id
feature_id
gcontext_id
chromosome_id
rank
cgroup
cvterm_id
cvterm
cvterm_id
name
etc…
Simple Stock Genotype
ab[2]/T(Y;2)E
ab[2]
T(Y;2)E
f_g
f_g
rank=0
cgroup=0
rank=1
cgroup=0
ab[2]/T(Y;2)E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uniquename
etc…
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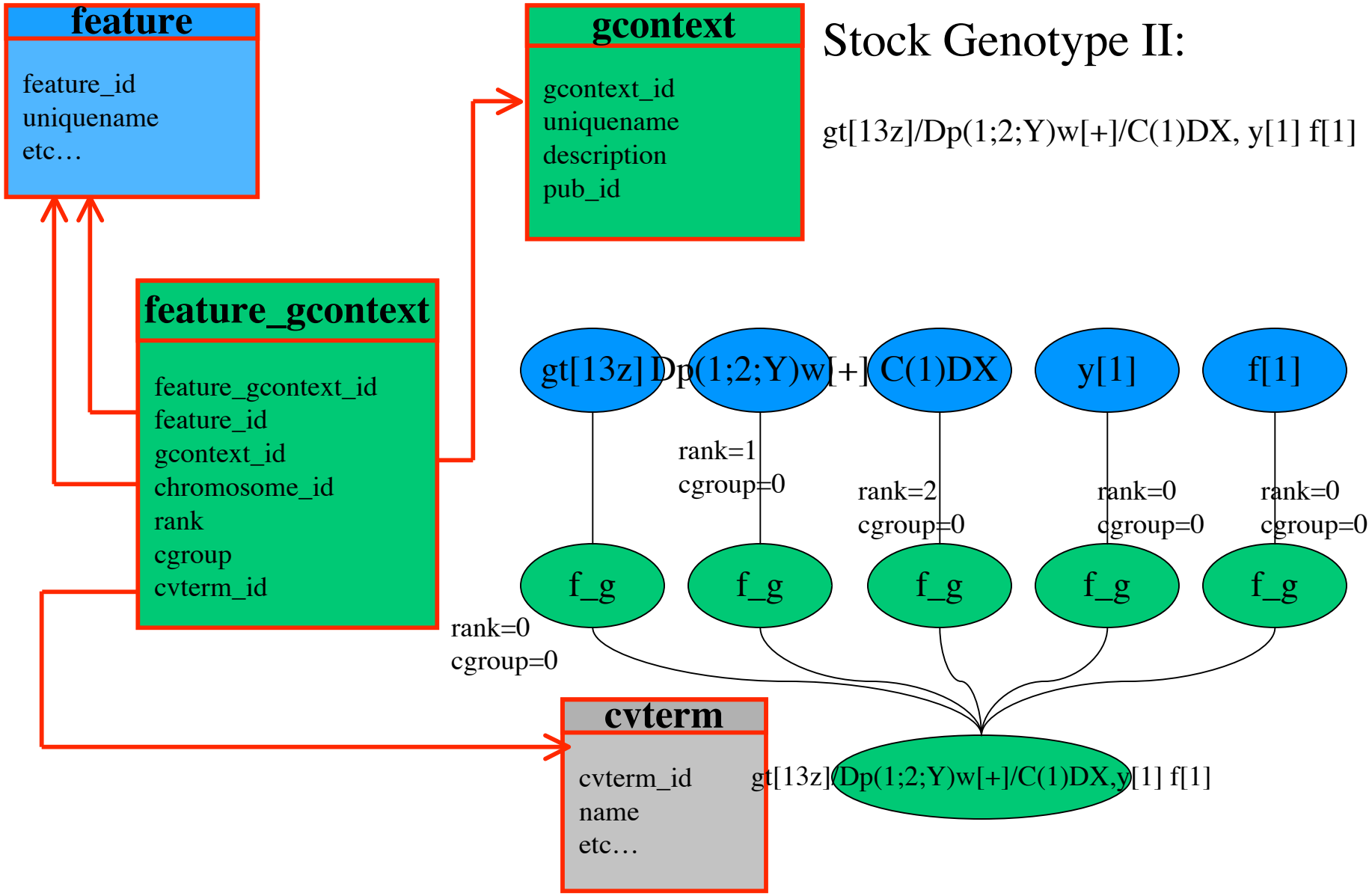
gcontext_id
uniquename
description
pub_id
Stock Genotype I:
P{hsFLP}1, w[1118]; Adv[1]/CyO
feature_gcontext
feature_gcontext_id
feature_id
gcontext_id
chromosome_id
rank
cgroup
cvterm_id
P{hsFLP}1
w[1118]
Adv[1]
CyO
rank=0
cgroup=0
rank=0
cgroup=1
f_g
f_g
f_g
f_g
rank=0
cgroup=0
rank=1
cgroup=1
cvterm
cvterm_id
name
etc…
P{hsFLP}1, w[1118]; Adv[1]/CyO


feature
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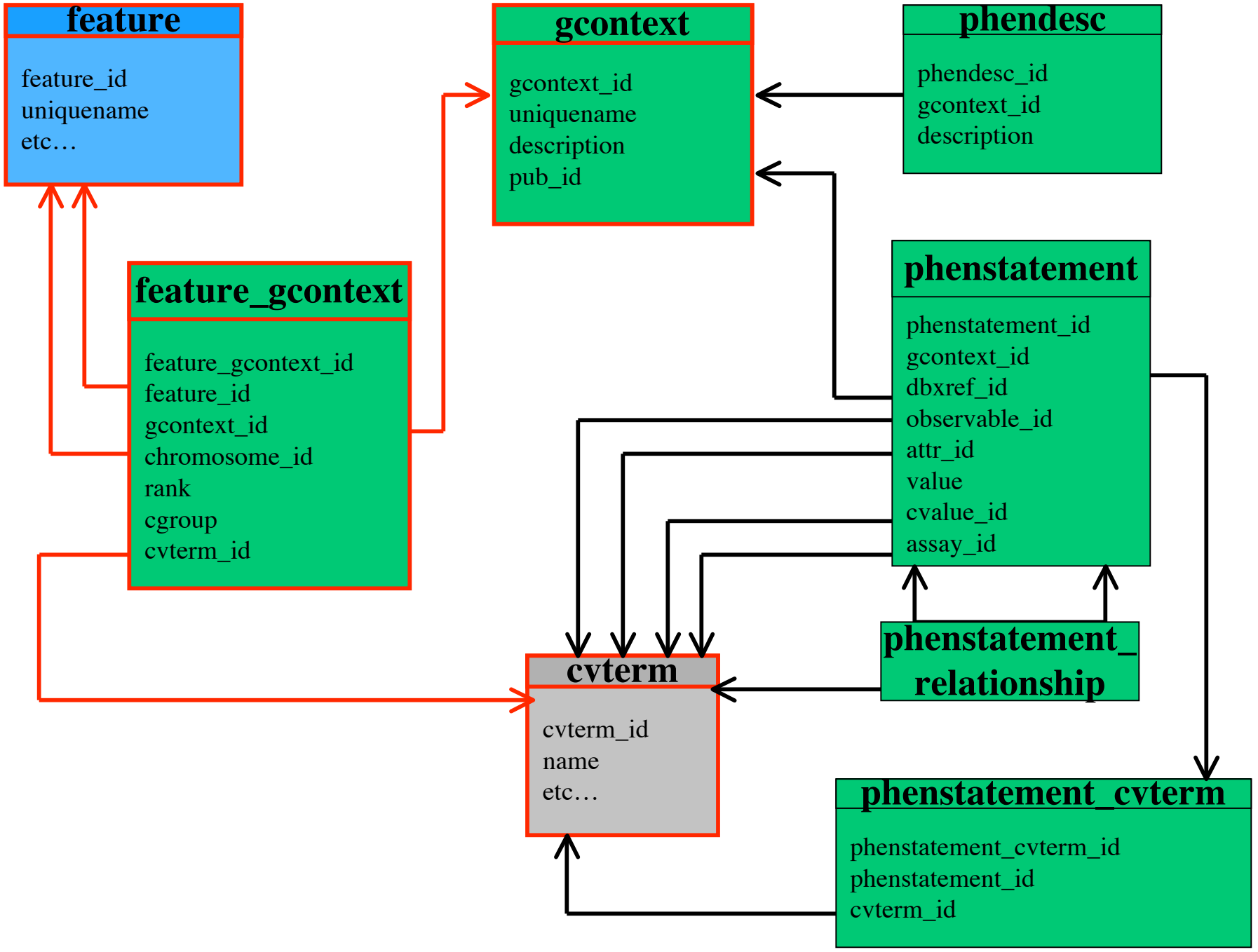
etc…
gcontext
gcontext_id
uniquename
description
pub_id
Stock Genotype II:
gt[13z]/Dp(1;2;Y)w[+]/C(1)DX, y[1] f[1]
feature_gcontext
feature_gcontext_id
feature_id
gcontext_id
chromosome_id
rank
cgroup
cvterm_id
gt[13z]
Dp(1;2;Y)w[+]
C(1)DX
y[1]
f[1]
rank=1
cgroup=0
rank=2
cgroup=0
rank=0
cgroup=0
rank=0
cgroup=0
f_g
f_g
f_g
f_g
f_g
rank=0
cgroup=0
cvterm
cvterm_id
name
etc…
gt[13z]/Dp(1;2;Y)w[+]/C(1)DX,y[1] f[1]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feature_gcontext_id
feature_id
gcontext_id
chromosome_id
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cgroup
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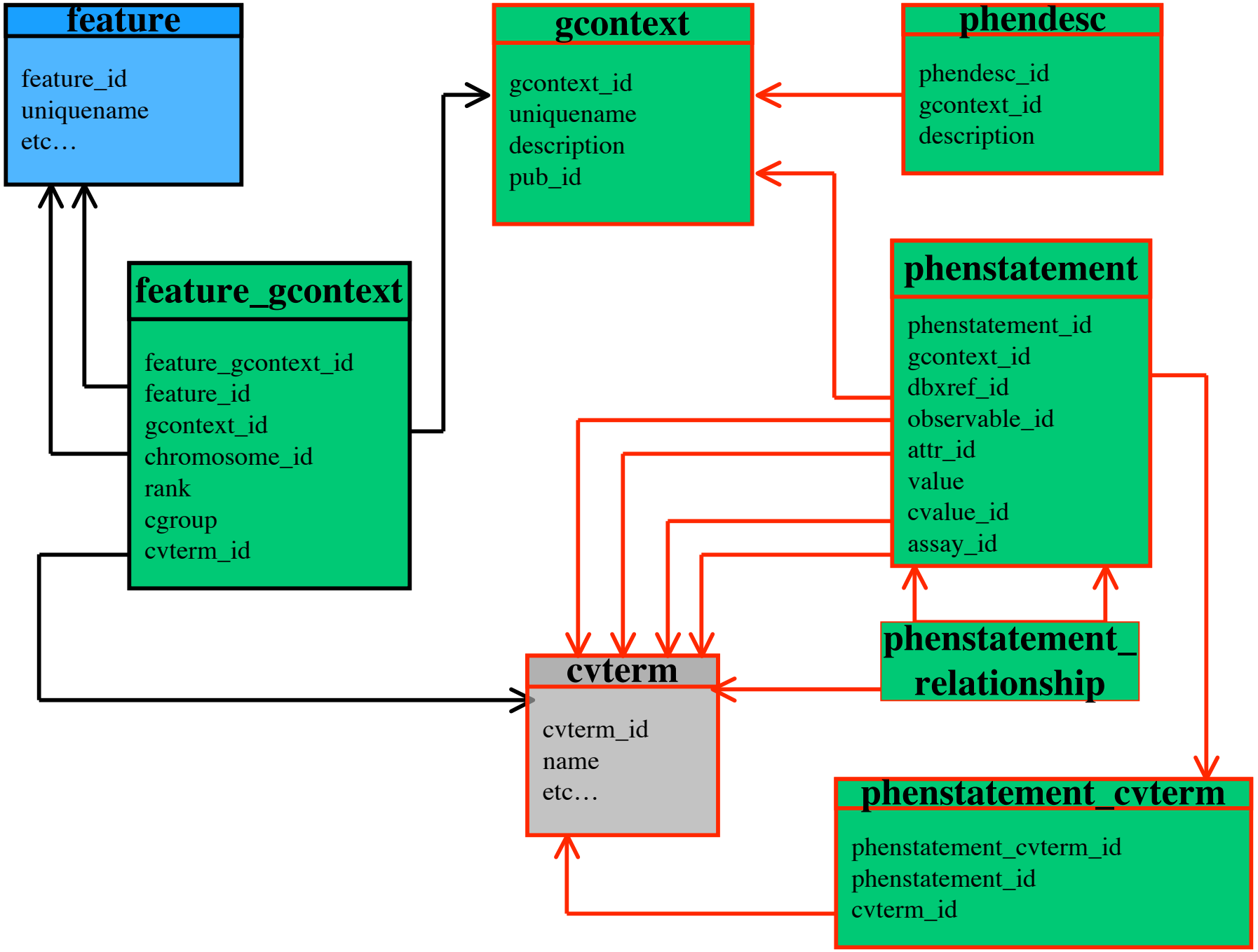
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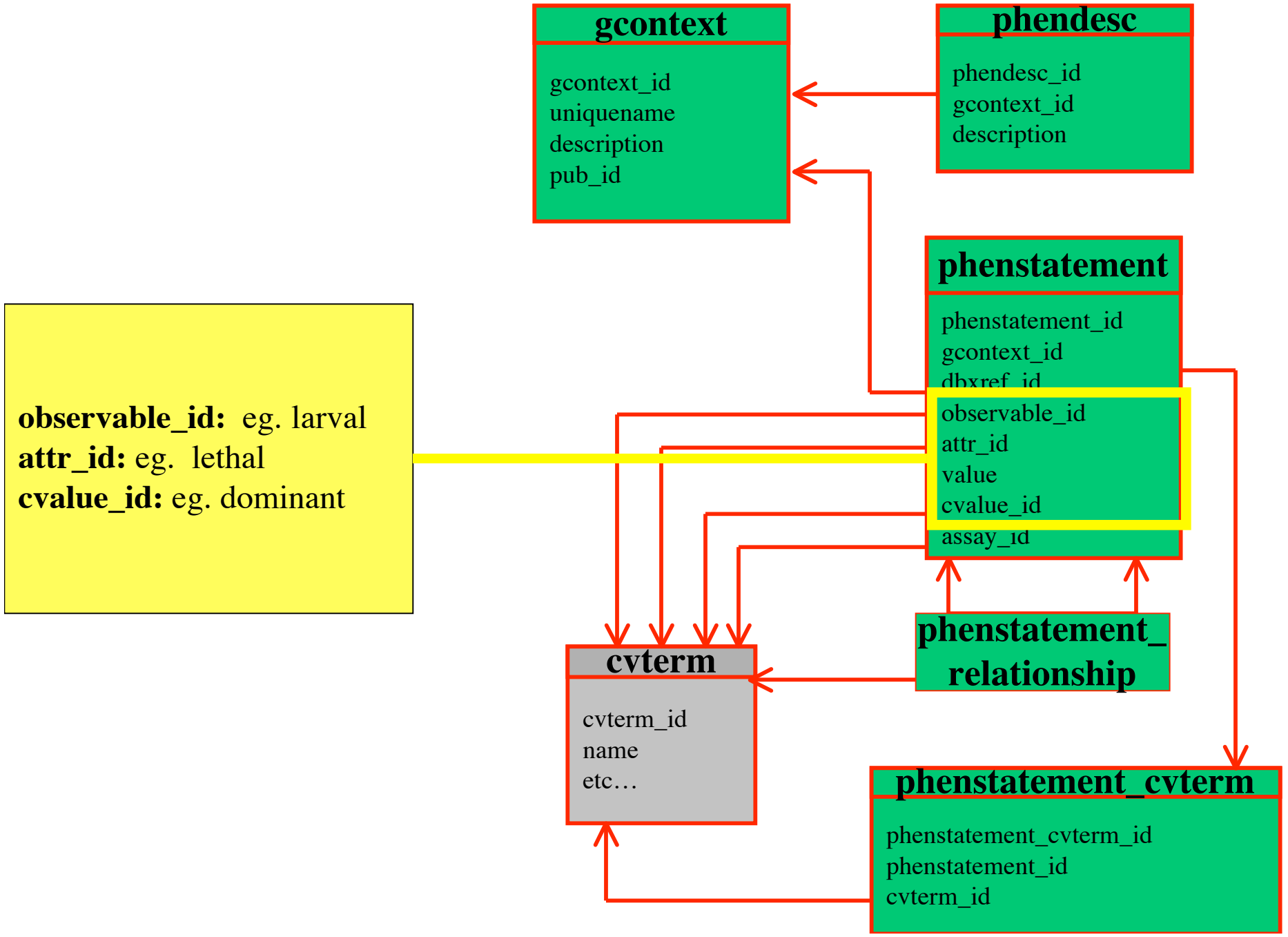
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description
phenstatement
phenstatement_id
gcontext_id
observable_id
attr_id
value
cvalue_id
assay_id
observable_id: eg. larval
attr_id: eg. lethal
cvalue_id: eg. dominant
cvterm
cvterm_id
name
etc…
phenstatement_relationship
phenstatement_cvterm
phenstatement_cvterm_id
phenstatement_id
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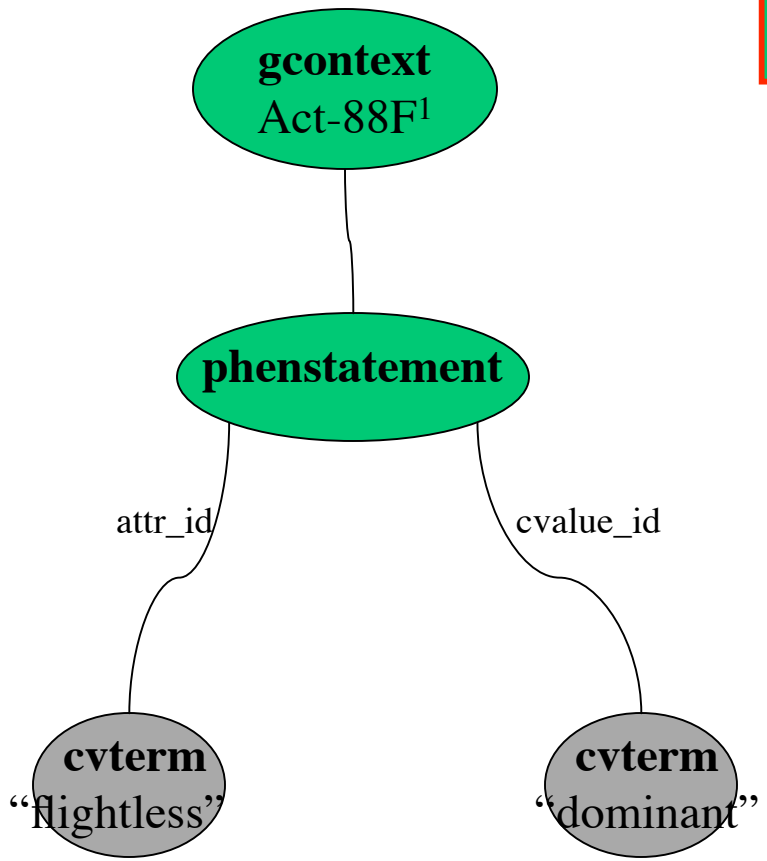
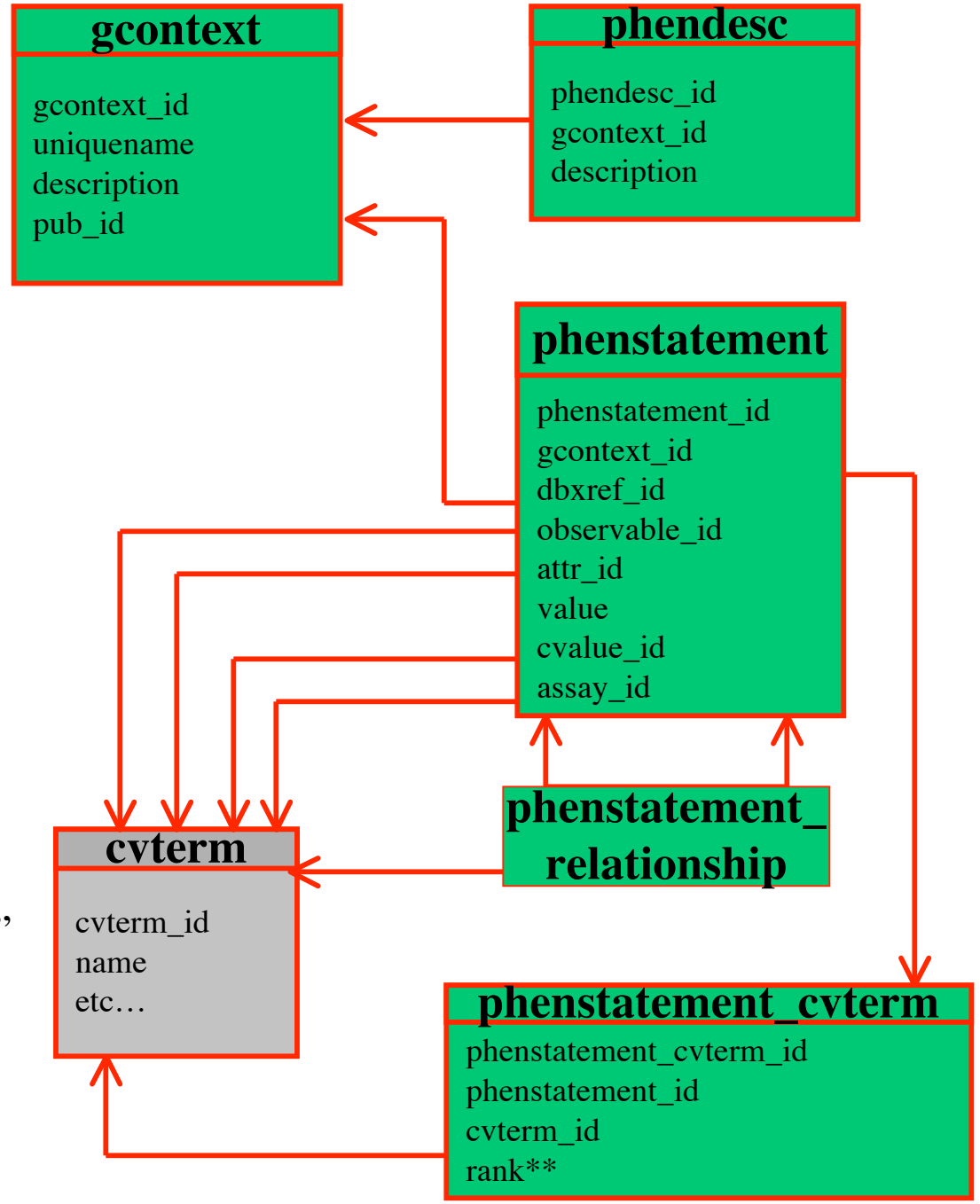
Allele phenotype Act-88F[1]

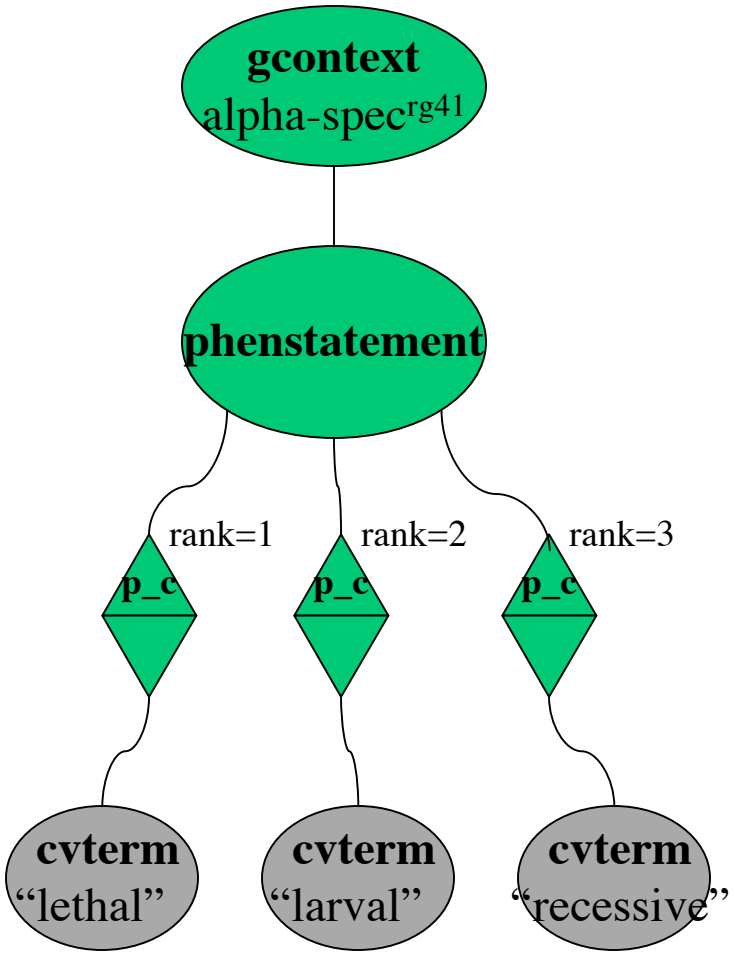
Phenotypic class:
flightless | dominant

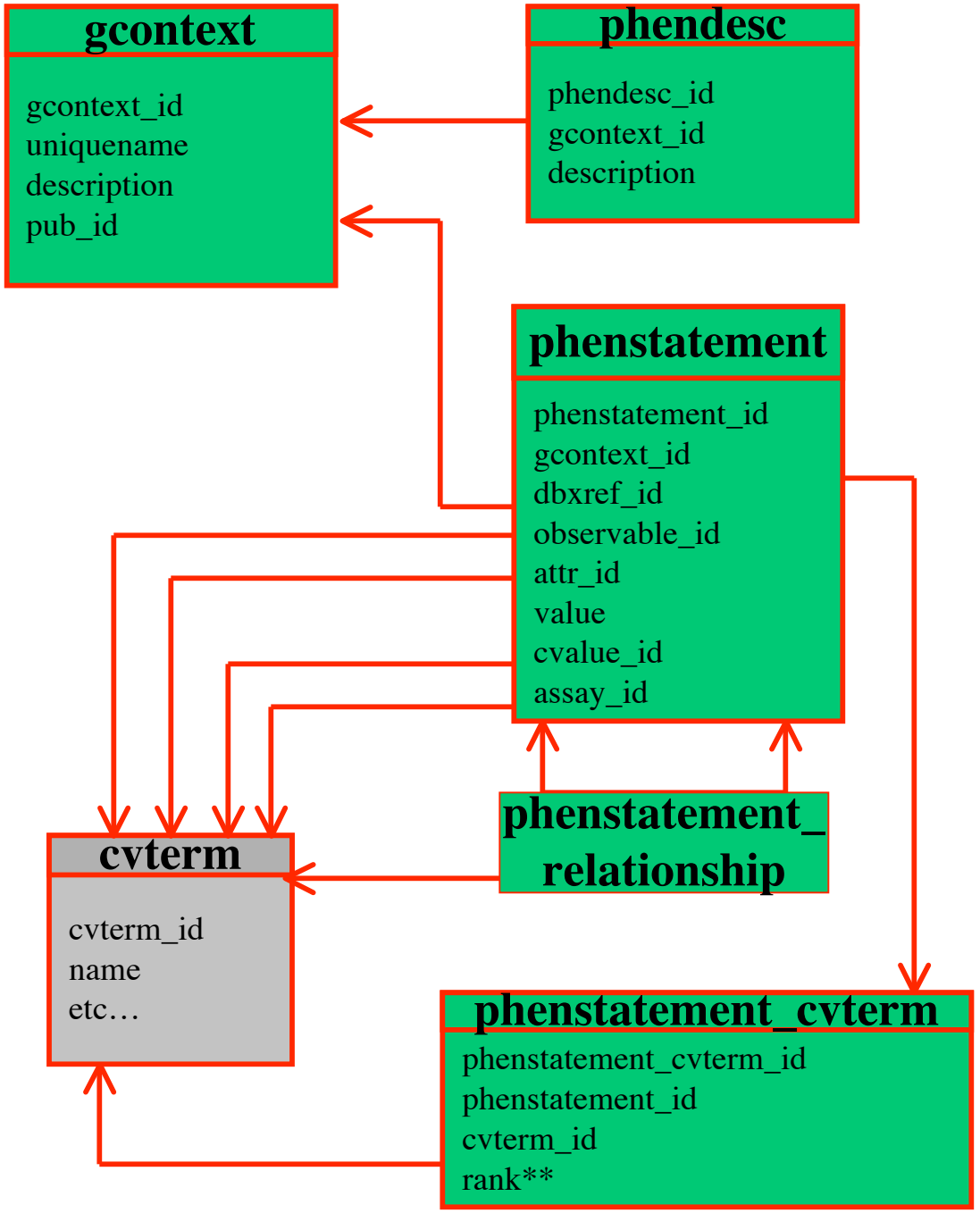




Allele phenotype alpha-spec^{rg41}

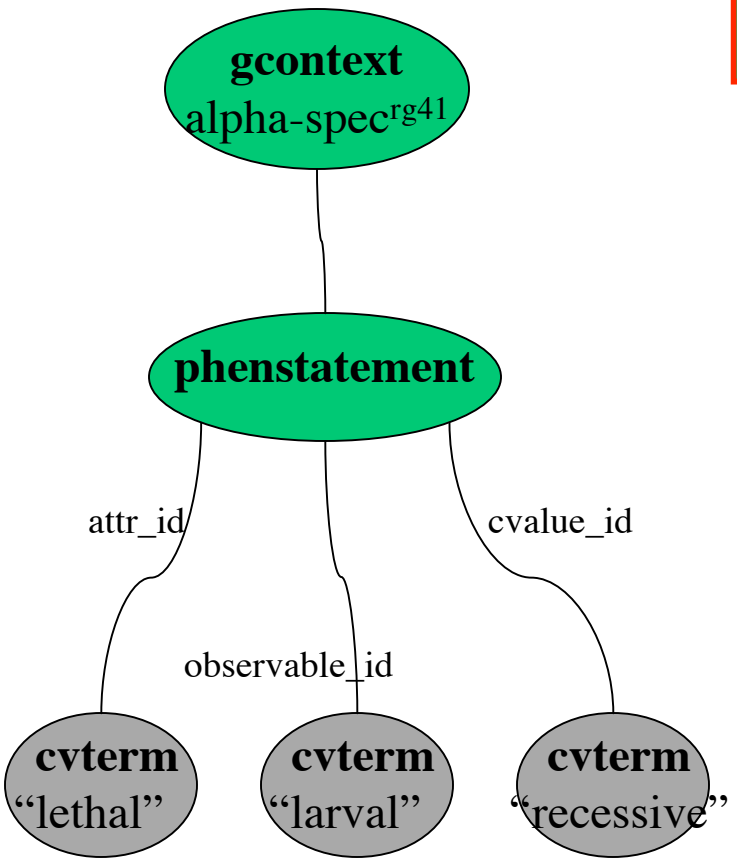
Phenotypic class:
lethal | larval | recessive

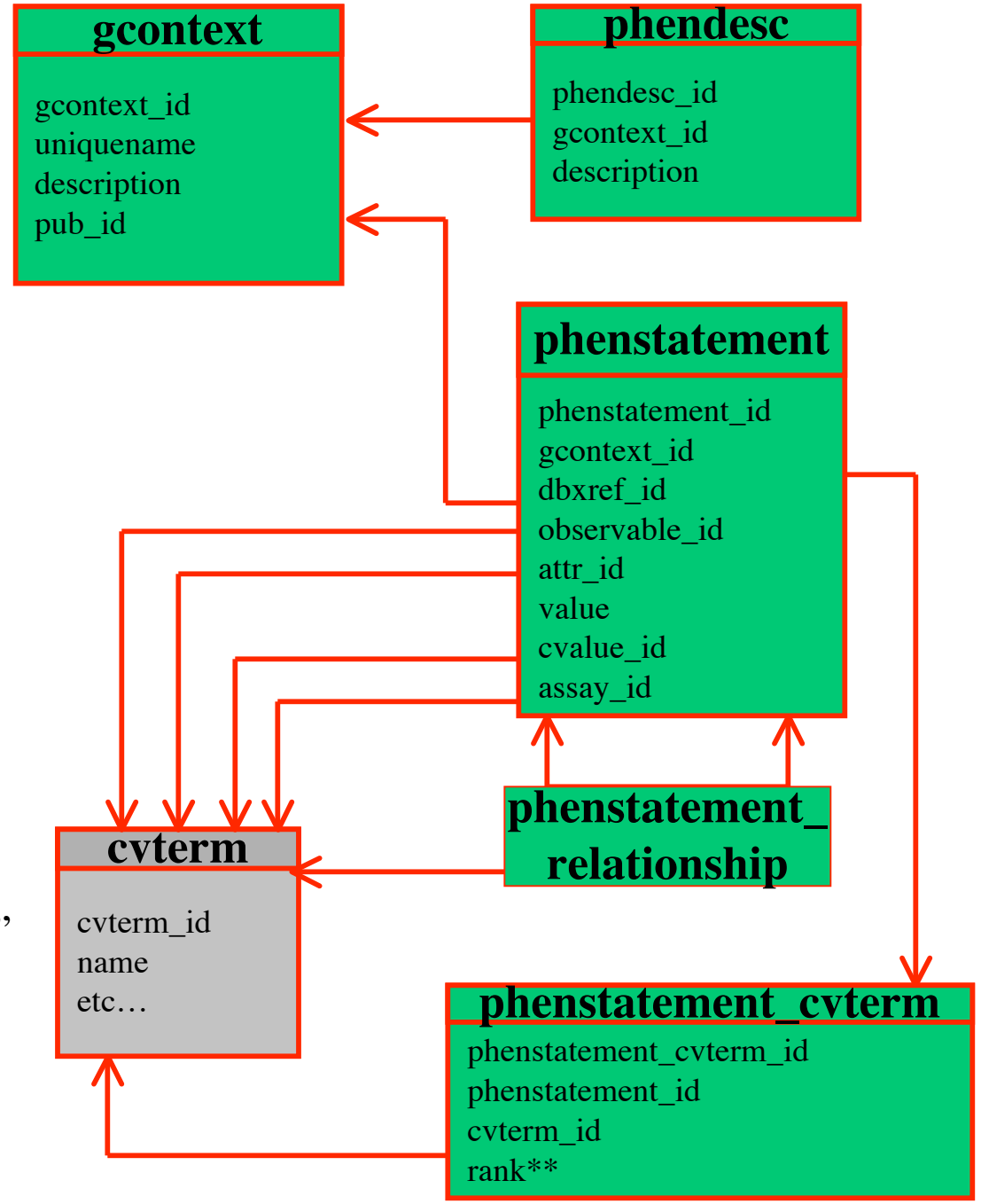




Allele phenotype alpha-spec^{rg41}

Phenotypic class:
lethal | larval | recessive

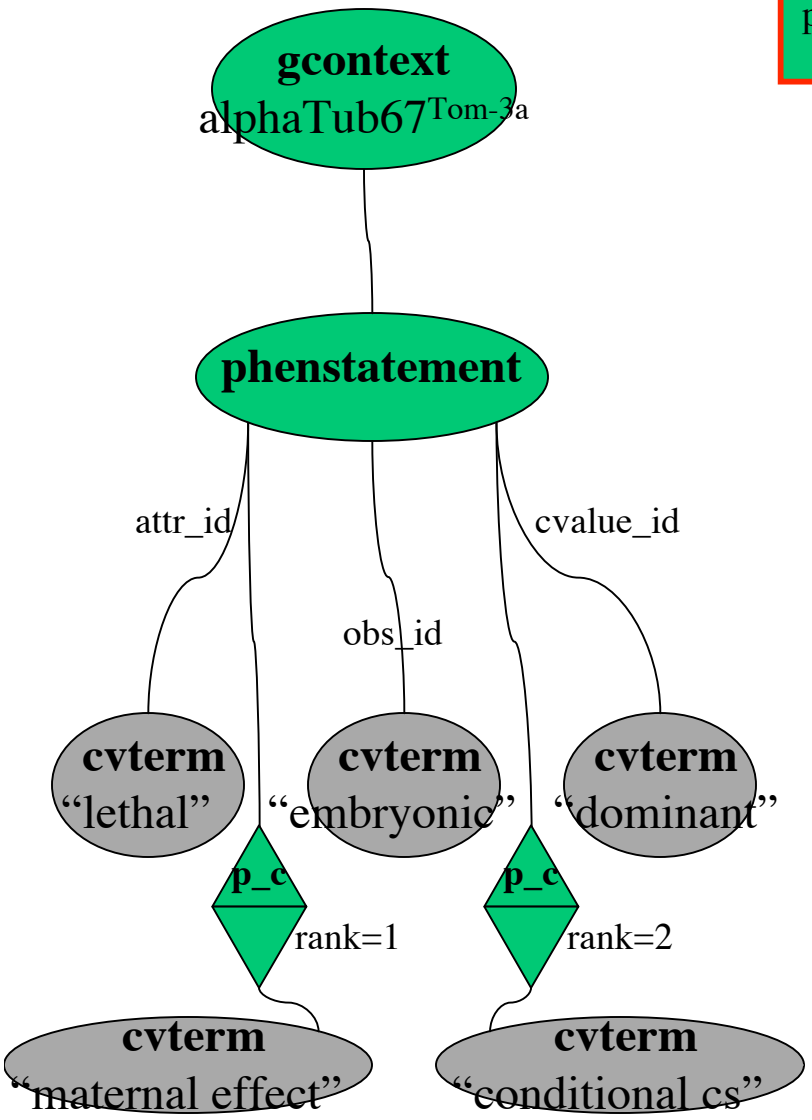


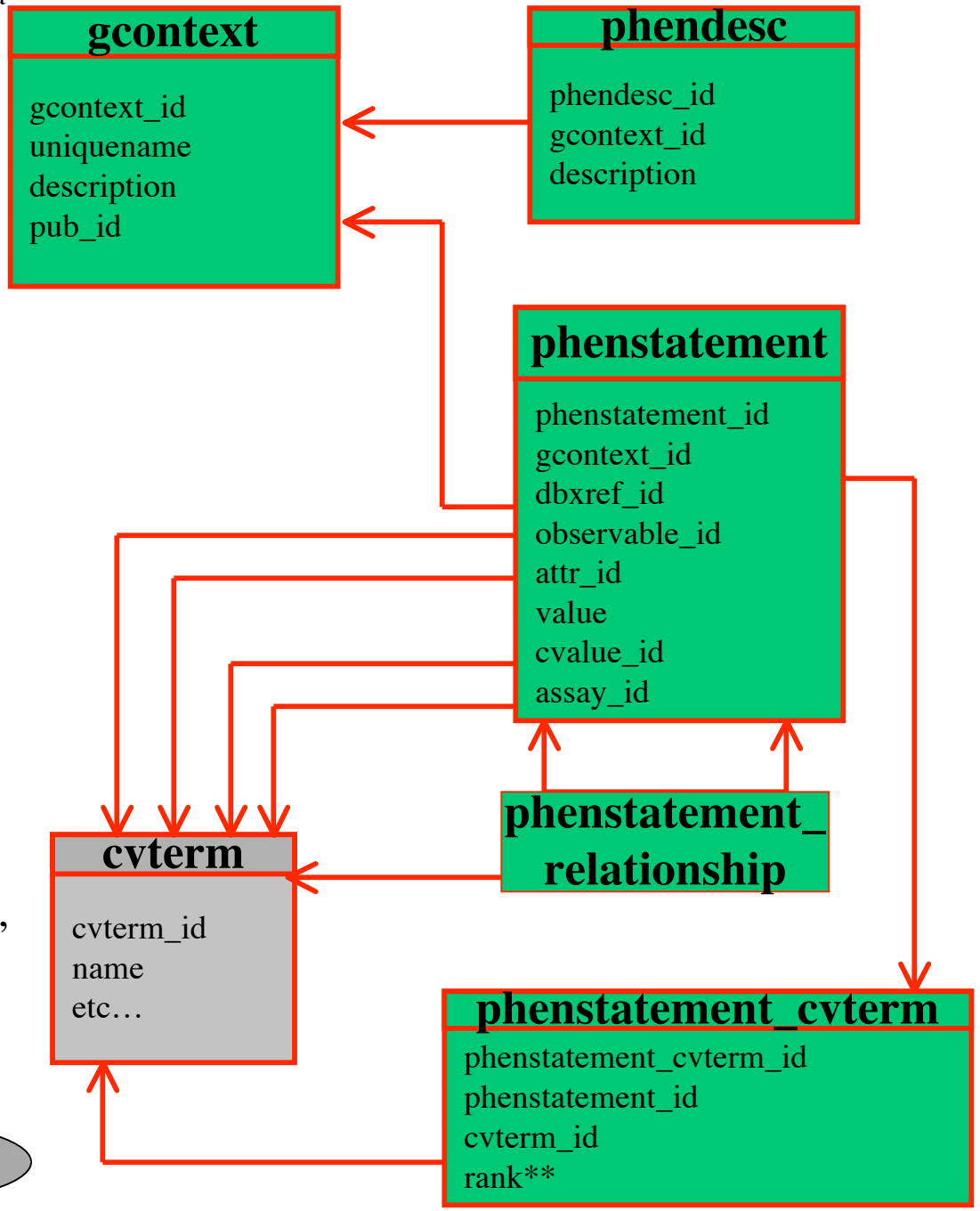


Allele phenotype alphaTub67^{Tom-3a}

Phenotypic class:

lethal | embryonic | dominant |
maternal effect | conditional cs

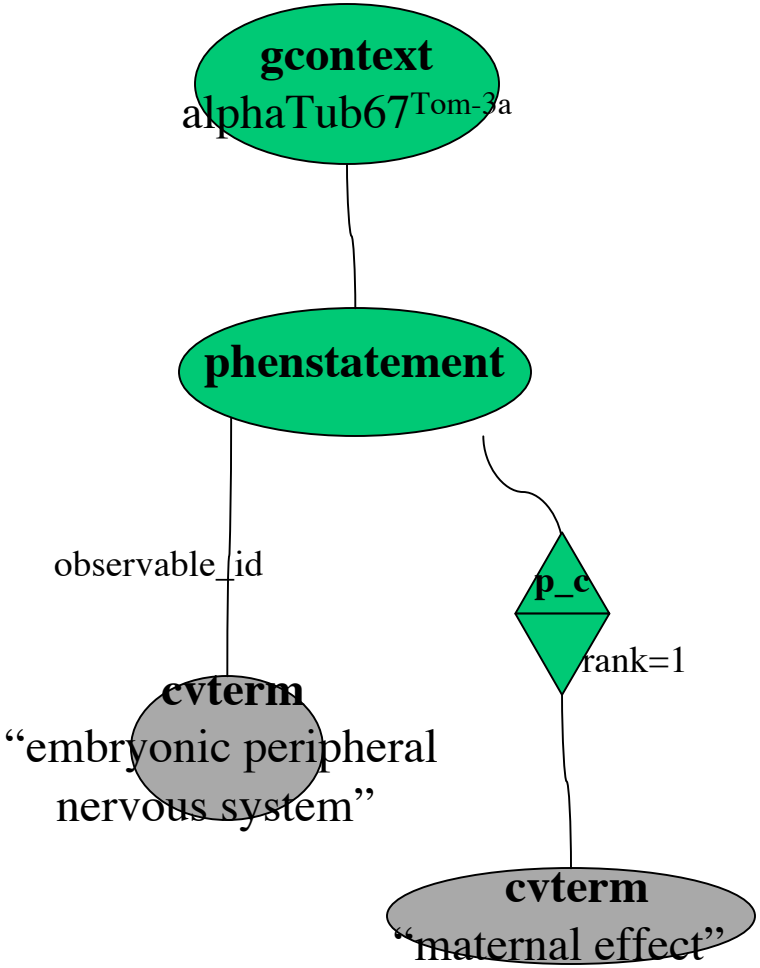


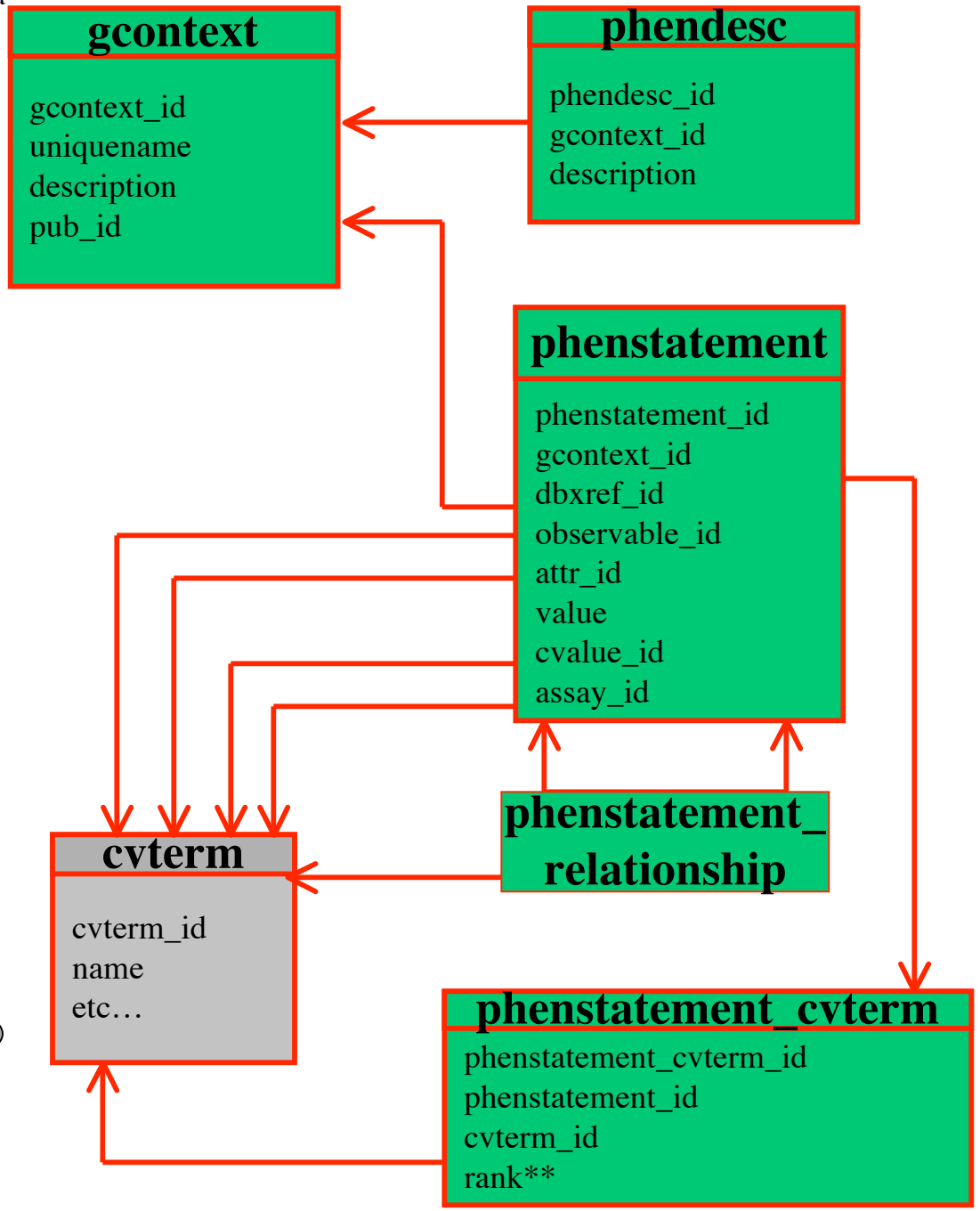


Allele phenotype alphaTub67^{Tom-3a}

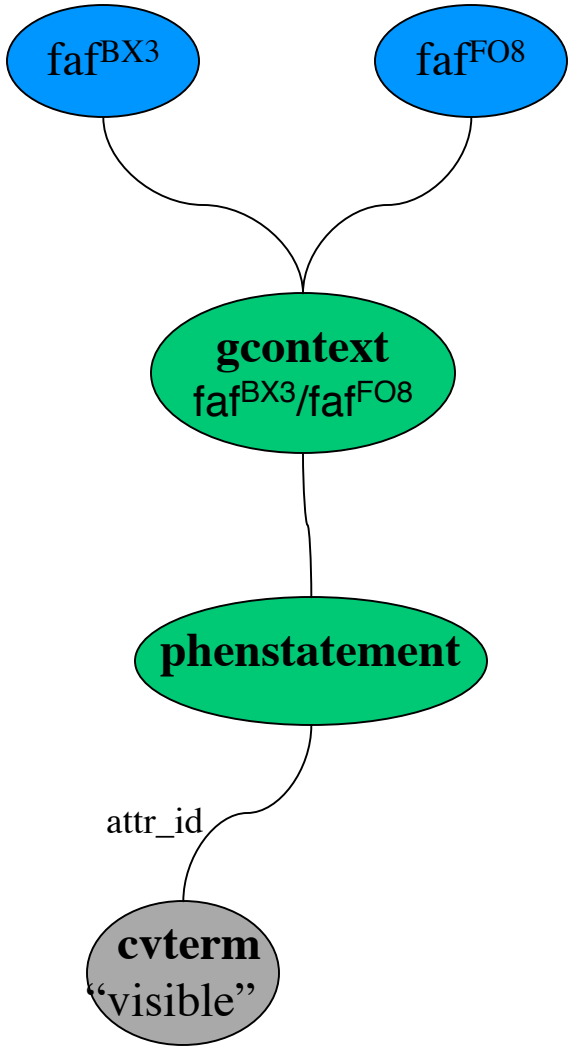
Phenotypic manifest in:

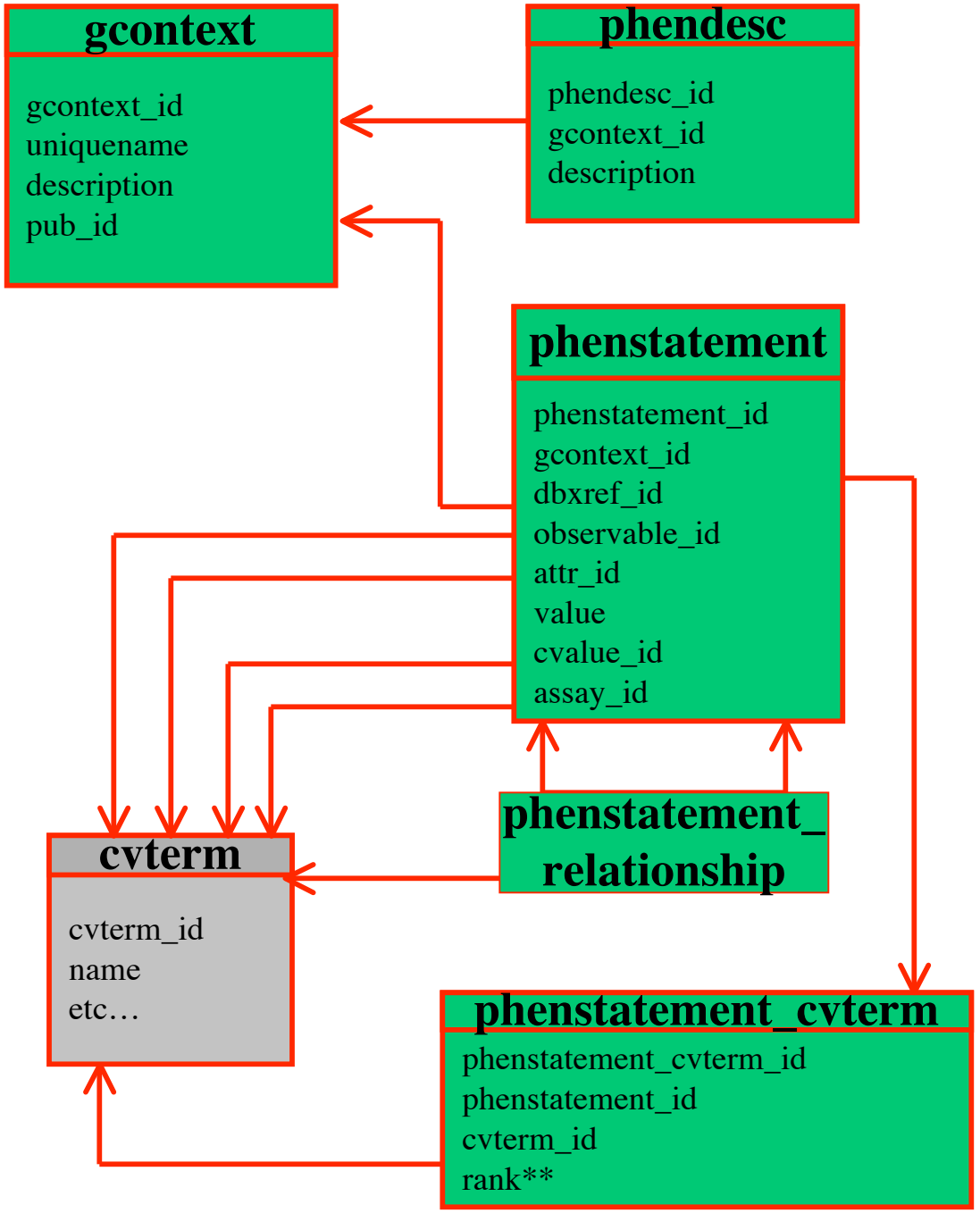
embryonic peripheral nervous system | maternal effect

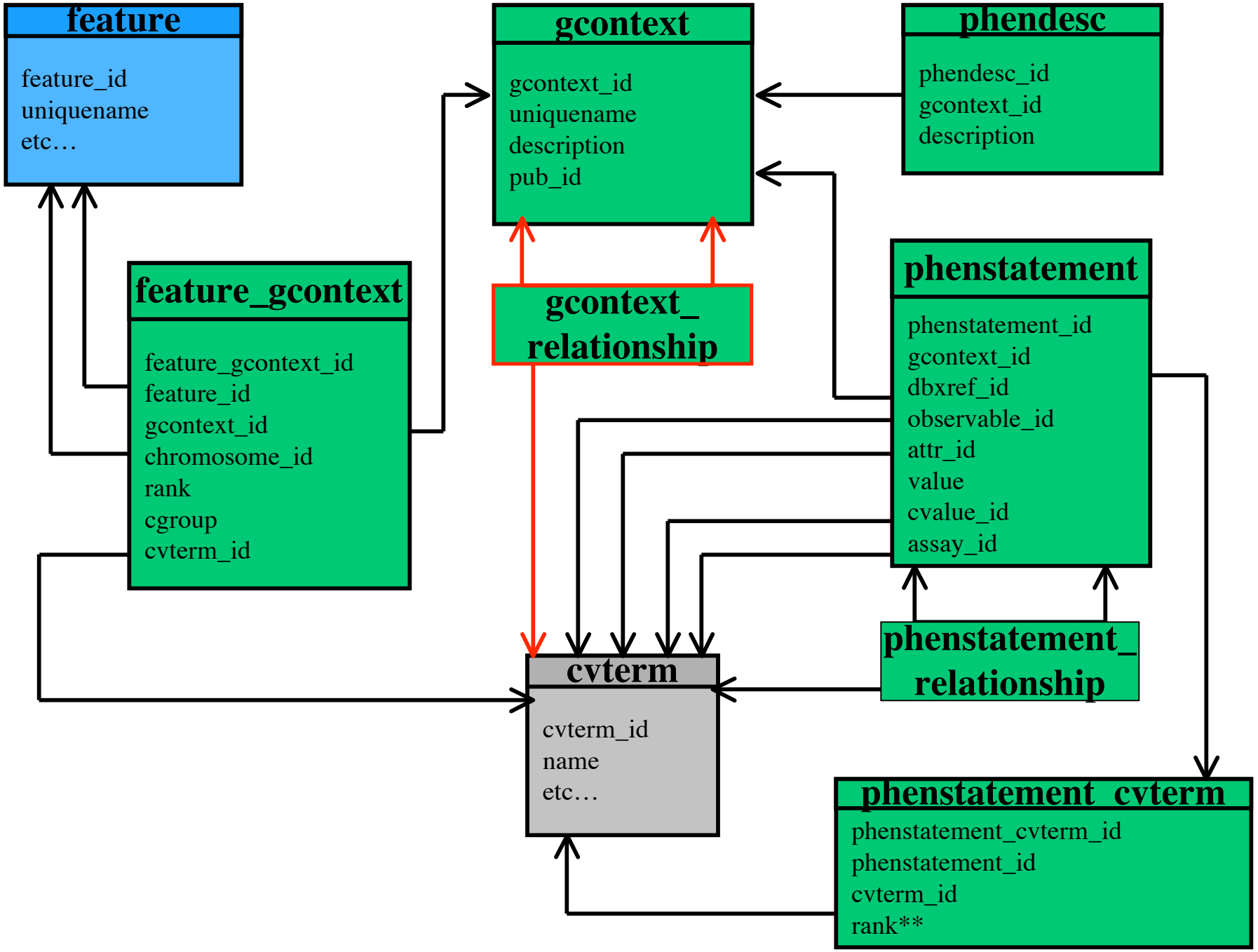




Transheterozygous phenotype:
faf^{BX3}/faf^{FO8}
Phenotypic class: visible



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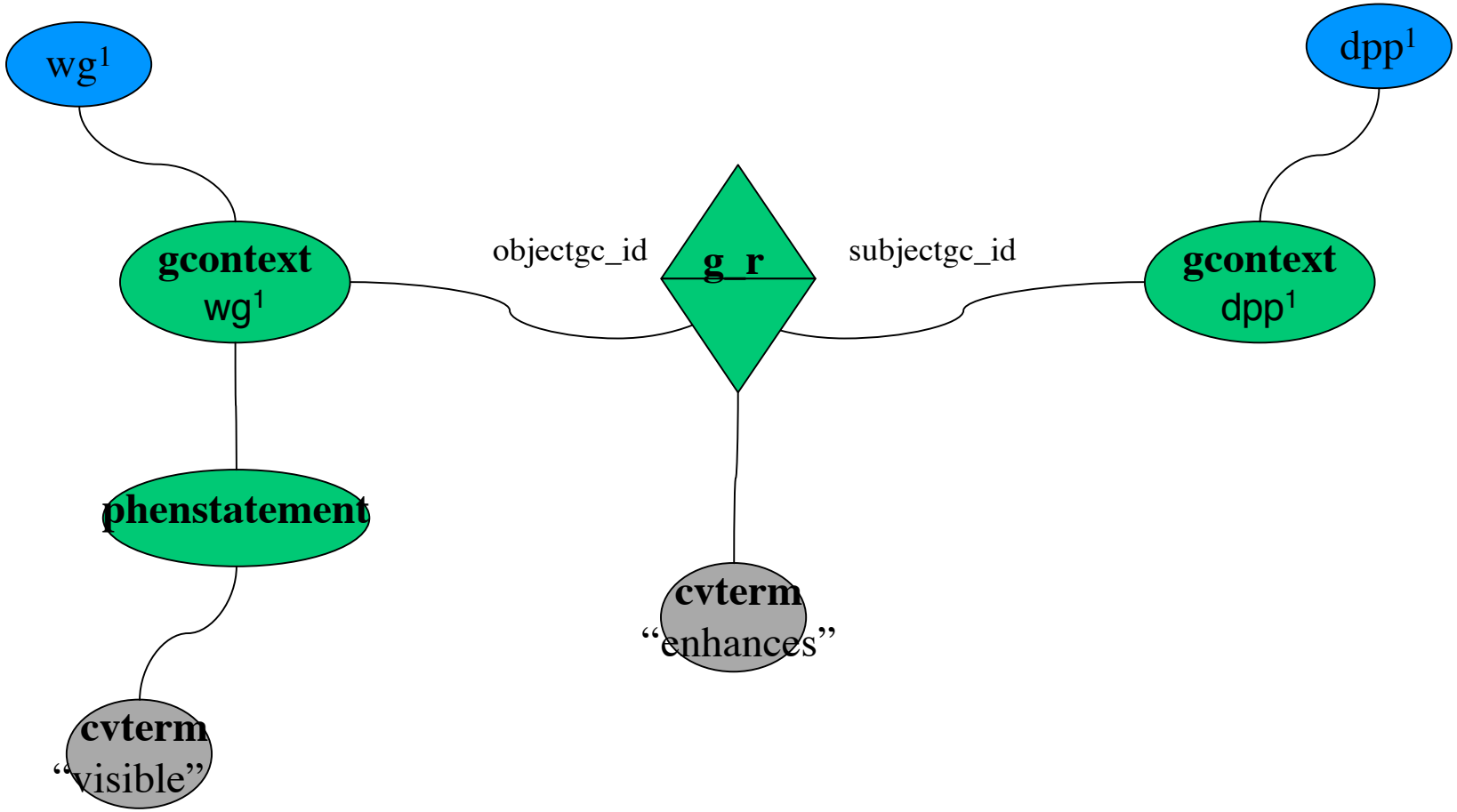
phenstatement_id
cvterm_id
rank**

Genetic Interactions

"wg[1] has a wing phenotype that is enhanced by dpp[1]"

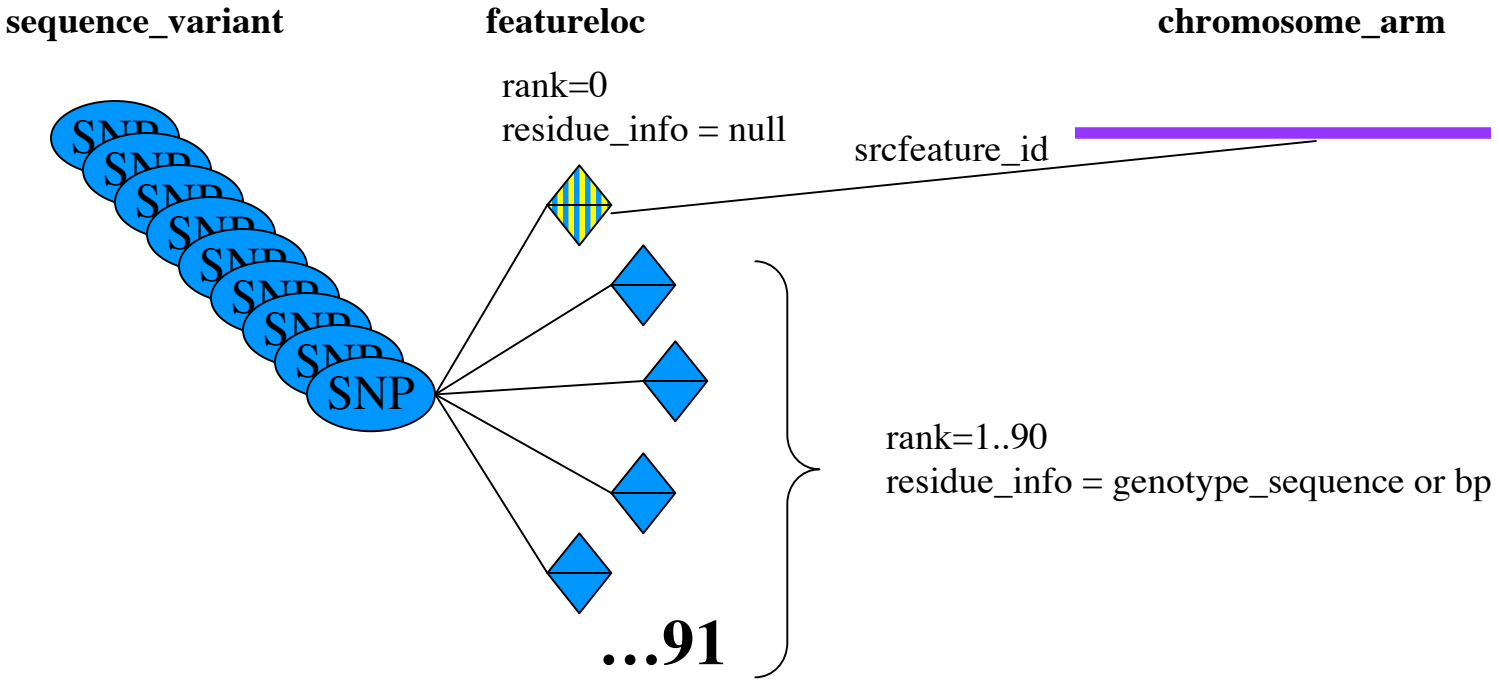
FlyBase Curation for wg[1]: **visible, enhanceable { dpp[1] }**



Representing hapmap genotype data in chado

(Chris Mungall and Mummi Thorisson)

-Several hundred thousand human SNPs (dbSNP rs#).
-90x samples (Coriell cell lines).
-genotypes for each of the 90 samples at a given SNP site.



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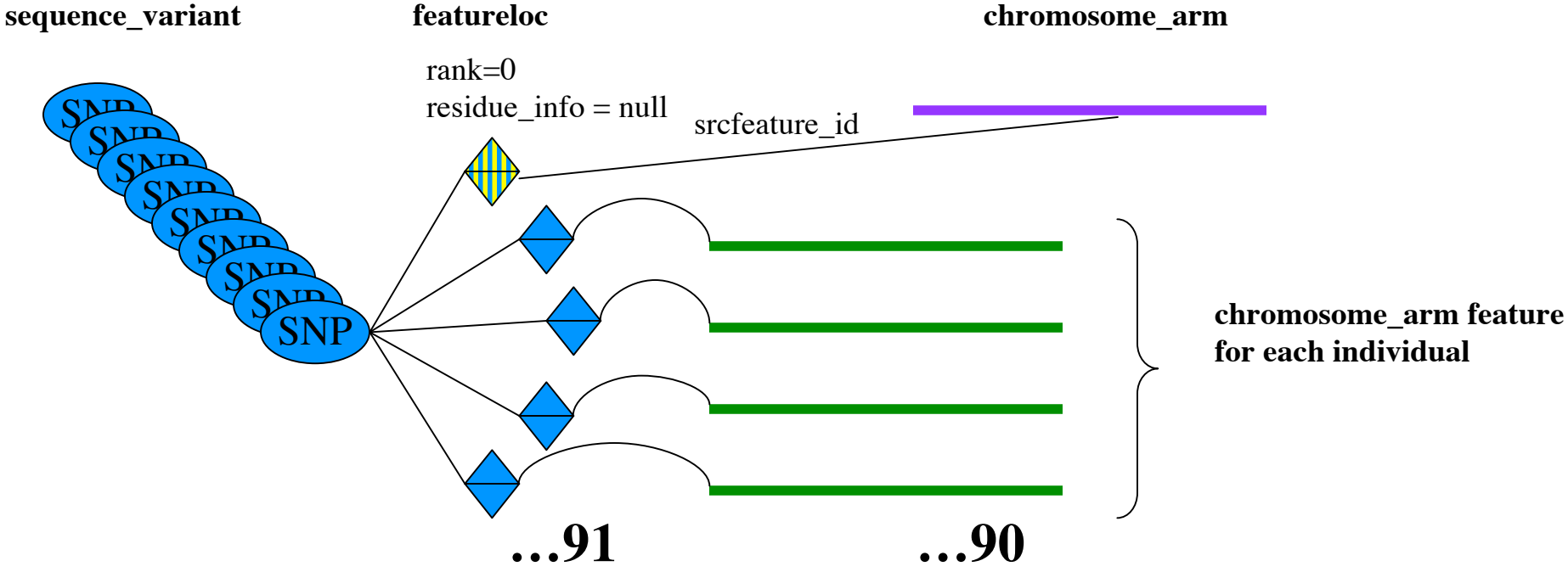

Acknowledgements

- **genetic module design team**
  - Chris Mungall (BDGP - Berkeley)
  - Pinglei Zhou (FlyBase - Harvard)
  - Aubrey de Grey (FlyBase - Cambridge)
  - Bill Gelbart (PI, FlyBase)
  - Stan Letovsky (FlyBase - Harvard)
  - FlyBase Curators at Cambridge and Harvard
- **GMOD**
  - Scott, Lincoln, Everybody who's helped / commented