Design Document for CPE 366

1 Entity Sets for the proposed database.

The primary key is identified by the underlined attributes in each entity set.

1.1 GeneLookupJob: Corresponds to a TESS Lookup job for one gene.
- Attributes
  - Experiment Id
  - Experiment date
  - Cell type 1
  - Cell type 2
  - Species
  - Gene name

1.2 Gene: Corresponds to a gene.
- Attributes
  - Gene name
  - Gene abbreviation
  - Chromosome
  - Begin site
  - End site
  - Regulation
  - Sequence

1.3 FactorHit: Corresponds to a finding of a factor binding to a specific sequence in a gene promoter by one research paper.
- Attributes
  - Name
  - Sequence
  - Model
  - Beginning
  - Sense
  - Length
  - L-factors
1.4 PSG: Summarizes one research paper’s findings for one transcription factor.
   ● Attributes
     ○ PSG-id
     ○ P-value
     ○ N
     ○ Rate
     ○ La
     ○ MAC
     ○ MID
     ○ FACS
     ○ FIDS

2. Relationship Sets
   2.1 GeneLookupJob to Gene
     ● Many-to-one relationship from GeneLookupJob to Gene.
     ● A GeneLookupJob must have a Gene.

   2.2 FactorHit to Gene
     ● Many-to-one relationship from FactorHit to Gene.
     ● A FactorHit must have a Gene.

   2.3 FactorHit to PSG
     ● Many-to-one relationship from FactorHit to PSG
     ● A FactorHit must have a PSG