List of the tables and fields we would need

Primary keys are shown in bold typeface.

Tables for projects

Table Projects

I think this info is somewhere else already.

Name	Format	Description
ProjectID	INT(10)	unsigned NOT NULL auto increment
Code	VARCHAR(10)	Three-letter project code
PIID	VARCHAR(10)	The Unix ID of the PI
Description	VARCHAR(500)	Long description of the project

Tables for isotopes and radioligands

Table Isotopes

This table will probably have a couple more columns, but can be left like this now.

Name	Format	Description
Name	VARCHAR(5)	Name of the isotope used
Halflife	FLOAT	Half-life of the isotope
BranchingRatio	FLOAT	Branching ratio of the isotope

Table Compounds

Note that the isotope only is also a compound, with name equal to the isotope's. This allows to make isotope-only runs and injections.

Name	Format	Description
CompoundID	INT(10)	unsigned NOT NULL auto increment
Name	VARCHAR(50)	Name of the compound used
Isotope	VARCHAR(5)	FOREIGN KEY refs Isotopes(Name)

Table InjectableDoses

Name	Format	Description
DoseID	INT(10)	unsigned NOT NULL auto increment
Compound	VARCHAR(50)	FOREIGN KEY refs Compounds(Name)
MadeInHouse	BOOLEAN	Whether the compound is made in-house

Table Manufacturers

Name	Format	Description
ManufacturerID	INT(10)	unsigned NOT NULL auto increment
Name	VARCHAR(100)	Manufacturer name
IsActive	BOOLEAN	Whether we are doing bussiness with the manufacturer now

Table ExternalCompundOrders

When a new order is created, two entries are created: one in the InjectableDoses table, and after that another entry (which uses the DoseID from the row in InjectableDoses) in the ExternalCompundOrders table.

Name	Format	Description
DoseID	INT(10)	FOREIGN KEY refs InjectableDoses(DoseID)
Date	DATE	The date the order was put
Manufacturer	VARCHAR(100)	FOREIGN KEY refs Manufacturers(Name)
Amount	VARCHAR(20)	Amount ordered
RxNumber	VARCHAR(20)	Rx number
POUsed	FIXME	FIXME
Comments	VARCHAR(500)	Optional comments about the order

Ciclotron tables

We use two different tables because some runs would never be released, for example, conditioning or failed runs.

Table ProductionRuns

FIXME: Do we need a tech id for the runs?

Name	Format	Description
RunID	INT(10)	unsigned NOT NULL auto increment
Date	DATE	Date when the run was run
ProjectID	VARCHAR(10)	FOREIGN KEY refs Projects(ProjectID)
SynthesisOK	BOOLEAN	Whether the synthesis was successful
QualityControlOK	BOOLEAN	Whether the QC was successful
Released	BOOLEAN	Whether the compound was released for injection
Comments	VARCHAR(500)	Optional comments about the run

Table ReleasedDoses

When a run is released, i.e. ProductionRuns(Released) is true, it becomes a released dose. This creates two new entries: one in the InjectableDoses table, and after that another entry (which uses the DoseID from the row in InjectableDoses) in the ReleasedDoses table.

Name	Format	Description
DoseID	INT(10)	FOREIGN KEY refs InjectableDoses(DoseID)

Name	Format	Description
StartingActivity	FLOAT	Activity of the compound after production
SpecificActivity	FLOAT	Specific activity of the compound at TOI
EstimatedTOI	TIME	Estimated time of injection
FromRun	INT(10)	FOREIGN KEY refs ProductionRuns(RunID)

Scanner tables

Table Bays

Name	Format	Description
BayID	INT(10)	unsigned NOT NULL auto increment
Location	VARCHAR(10)	Location of the bay, e.g. "Bay 6"
Description	VARCHAR(500)	Long description of the bay

Table ActivityMeasurement

Name	Format	Description
MeasurementID	INT(10)	unsigned NOT NULL auto increment
TechID	VARCHAR(20)	The Unix id of the tech
FromDose	INT(10)	FOREIGN KEY refs InjectableDoses(DoseID)
Activity	FLOAT	Activity of the compound
TimeForActivity	TIME	Time of the activity measurement

Table InjectedDoses

This table has an extra field InjectionID, in case the released dose is splitted in different injections at the scanner.

Name	Format	Description
InjectionID	INT(10)	unsigned NOT NULL auto increment
FromDose	INT(10)	FOREIGN KEY refs InjectableDoses(DoseID)
TechID	VARCHAR(20)	The Unix id of the tech
ScanID	VARCHAR(20)	FOREIGN KEY refs Scans(ScanID)
InitialActivityMeasurement	INT(10)	FOREIGN KEY refs ActivityMeasurement(MeasurementID)
ResidualActivityMeasurement	INT(10)	FOREIGN KEY refs ActivityMeasurement(MeasurementID)
TOI	TIME	Actual time of injection
Volume	FLOAT	Volume of the injected bolus or infusion
InfusionRate	FLOAT	Rate of the injected infusion (NULL if bolus)

Table Scans

Name	Format	Description
ScanID	INT(10)	unsigned NOT NULL auto increment
ProjectID	VARCHAR(10)	FOREIGN KEY refs Projects(ProjectID)

Name	Format	Description
Date	DATE	Date when the scan was performed
BayID	VARCHAR(10)	FOREIGN KEY refs Bays(BayID)
TechID	VARCHAR(20)	The Unix id of the tech
SubjectID	VARCHAR(20)	Subject's ID as in Bourget (NULL if not completed)
SubjectSpecies	VARCHAR(20)	FOREIGN KEY refs SubjectSpecies(Species)
IVPlacement	VARCHAR(100)	Where the injection for the compound goes (NULL if SubjectSpecies is phantom)
Gauge	VARCHAR(5)	Needle gauge for the IV (NULL if SubjectSpecies not human)
Glucose	FLOAT	Amount of glucose given to the subject in mg/dl (NULL if SubjectSpecies not human)
Completed	BOOLEAN	Whether the scan was completed sucessfully
Billed	BOOLEAN	Whether the scan was billed

Tables for subjects

Table SubjectSpecies

This is just to have a list of species (humans are human and phantoms are phantom) that can be extended and used in a drop down menu. This could be extended to enter different types of phantoms as different "species".

Name	Format	Description
SpeciesID	INT(10)	unsigned NOT NULL auto increment
Species	VARCHAR(20)	Species of the subject
IsActive	BOOLEAN	Whether we are doing scans of this species now

Table Animals

Name	Format	Description
ScanID	INT(10)	FOREIGN KEY refs Scans(ScanID)
Species	VARCHAR(20)	FOREIGN KEY refs SubjectSpecies(Species)
Weight	FIXME	Subject's weight

Table Humans

Name	Format	Description
ScanID	INT(10)	FOREIGN KEY refs Scans(ScanID)
IsControl	BOOLEAN	Whether the subject is a control or a patient
Sex	VARCHAR(1)	Subject's sex
Weight	FIXME	Subject's weight
Height	FIXME	Subject's height
YOB	INT(4)	Subject's year of birth

Table Phantoms

Name	Format	Description
ScanID	INT(10)	FOREIGN KEY refs Scans(ScanID)
Description	VARCHAR(500)	Long description of the phantom

Tables for services

Table ServiceRates

Name	Format	Description
TypeID	INT(10)	unsigned NOT NULL auto increment
Name	VARCHAR(100)	Name of the service
Description	VARCHAR(500)	Long description of the service
Rate	FLOAT	Rate per unit in dollars

Table Services

Name	Format	Description
ServiceID	INT(10)	unsigned NOT NULL auto increment
ScanID	INT(10)	FOREIGN KEY refs Scans(ScanID)
TypeID	INT(10)	FOREIGN KEY refs ServiceRates(TypeID)
UnitsBilled	FLOAT	The number of units billed (multiple of 1/2)

Table BloodServices

Name	Format	Description
ServiceID	INT(10)	FOREIGN KEY refs Services(ServiceID)
TechID	VARCHAR(20)	The Unix id of the tech
IsVenous	BOOLEAN	Whether the draw for the blood procedure is venous or arterial