Austin Bond

TPD #3

Tube Amplification

Entity-Relationship Diagram — Tube Amplification

Pre-Amplifier

PRE_MODEL_ID (PK)	int
DIS_SYSTEM_ID (FK)	int
PRE_INPUTS	int
PRE_OUTPUTS	int

Discrete System

DIS_SYSTEM_ID (PK)	int
HOB_ID (FK)	int

Power Amplifier

POWER_MODEL_ID (PK)	int
DIS_SYSTEM_ID (FK)	int
PWR_OUTPUT_POWER	int
PRE_MODEL (FK2)	int

Rectifier Tube

REC_TUBE_MODEL (PK)	int
AC_PLATE_SUPPLY VOLTAGE	int
FILTER_INPUT_CAPACITOR	int
DC_OUTPUT_CURRENT	int
FILTER_INPUT_CHOKE	int
POWER_MODEL_ID (FK1)	int
INT_MODEL_ID (FK2)	int

Hobbyist

HOB_ID (PK)	int
L_NAME	varchar
F_NAME	varchar

Preamp Tube

PRE_TUBE_MODEL (PK)	int
PRE_HEATER_VOLTAGE	int
PRE_TRANSCONDUCTANCE	int
PRE_HEATER_CURRENT	int
PRE_PLATE_VOLTAGE	int
PRE_PLATE_CURRENT	int
PRE_GAIN	int
INT_MODEL_ID (PK, FK1)	int
POWER_MODEL_ID (FK2)	int
PRE_MODEL_ID (PK, FK3)	int

Source

SOURCE_ID (PK)	int
LINE_VOLTAGE	int
MEDIUM	varchar
HOB_ID (PK, FK1)	int
INT_MODEL (PK, FK2)	int
PRE_MODEL (PK, FK3)	int

Integrated System

INT_SYSTEM_ID (PK)	int
HOB_ID (FK)	int

Speaker

SPKR_MODEL_ID (PK)	int
SPEAKER_SIZE	int
SPEAKER_IMPEDANCE	int
HOB_ID (PK, FK1)	int
POWER_MODEL_ID (PK, FK2)	int
INT_MODEL (PK, FK3)	int

Power Tube

PWR_TUBE_MODEL (PK)	int
PWR_HEATER_VOLTAGE	int
PWR_HEATER_CURRENT	int
PWR_GAIN	int
PWR_PLATE_VOLTAGE	int
PWR_PLATE_CURRENT	int
PWR_CATHODE_CURRENT	int
PWR_TRANSCONDUCTANCE	int
POWER_MODEL_ID (PK, FK1)	int
INT_MODEL_ID (PK, FK2)	int

Integrated Amplifier

INT_MODEL_ID (PK)	int
INT_SYSTEM_ID (FK)	int
INT_OUTPUT_POWER	int
INT_INPUTS	int
INT_OUTPUTS	int

Relationships: utilizes, controls, contains, chooses, has, owns, retrieves, drives, utilizes

INTEGRATED SYSTEM

INT_SYSTEM_ID	HOB_ID

Table name: INTEGRATED SYSTEM
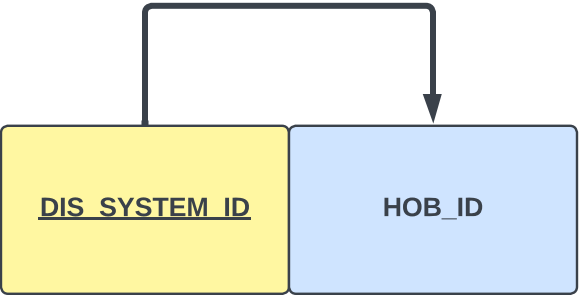
INTEGRATED SYSTEM (INT_SYSTEM_ID, HOB_ID)
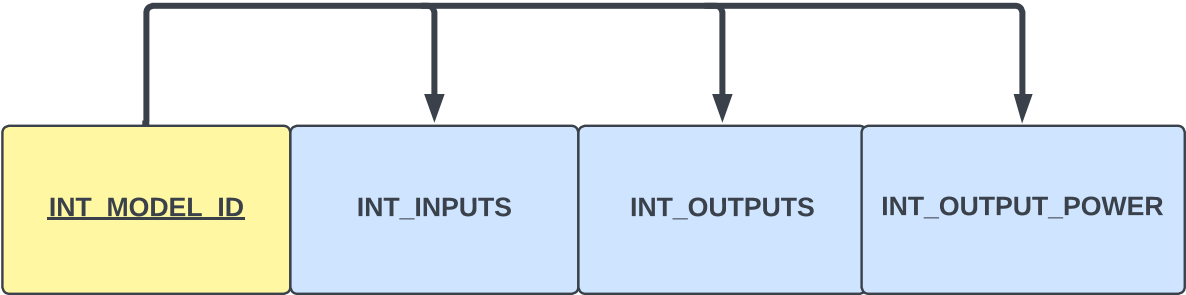
DISCRETE SYSTEM

DIS_SYSTEM_ID	HOB_ID

Table name: DISCRETE SYSTEM

DISCRETE SYSTEM (DIS_SYSTEM_ID, HOB_ID)

INTEGRATED AMPLIFIER

INT_MODEL_ID	INT_INPUTS	INT_OUTPUTS	INT_OUTPUT_POWER

Table name: INTEGRATED AMPLIFIER

INTEGRATED AMPLIFIER (INT_MODEL_ID, INT_INPUTS, INT_OUTPUTS, INT_OUTPUT_POWER)

PRE-AMPLIFIER

PRE_MODEL_ID	PRE_INPUTS	PRE_OUTPUTS
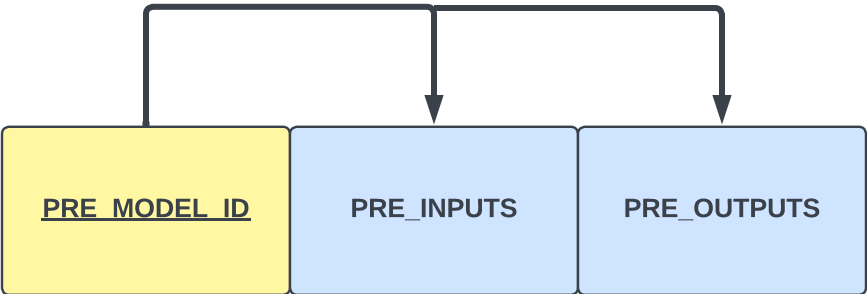
Table name: PRE-AMPLIFIER

PRE-AMPLIFIER (PRE_MODEL_ID, PRE_INPUTS, PRE_OUTPUTS)

HOBBYIST
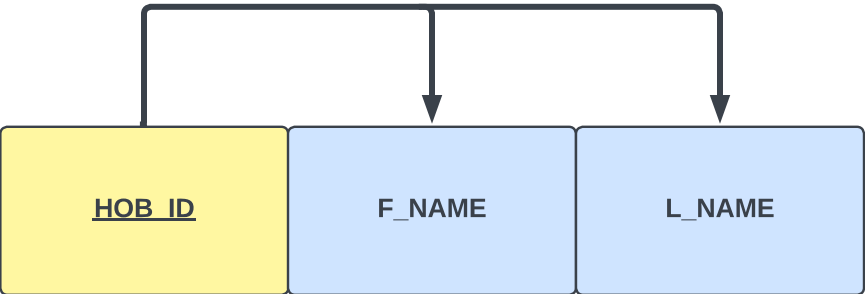
HOB_ID	F_NAME	L_NAME

Table name: HOBBYIST

HOBBYIST (HOB_ID, F_NAME, L_NAME)

POWER AMPLIFIER

POWER_MODEL_ID	PWR_OUTPUT_POWER	PRE_MODEL_ID
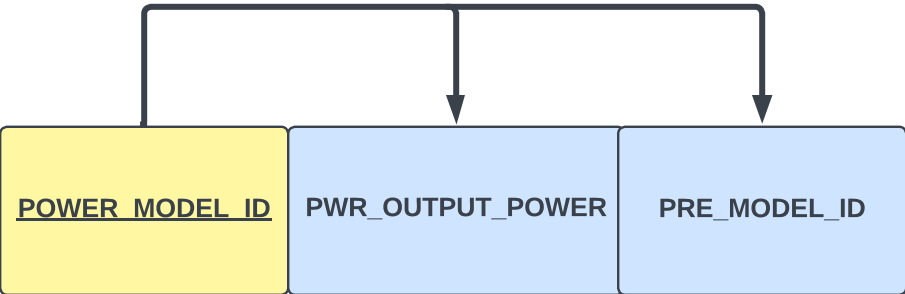
Table name: POWER AMPLIFIER

POWER AMPLIFIER (POWER_MODEL_ID, PWR_OUTPUT_POWER, PRE_MODEL_ID)

SOURCE

SOURCE_ID	LINE_VOLTAGE	MEDIUM
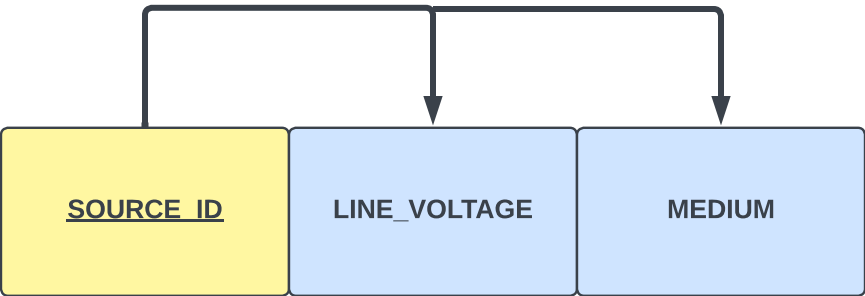
Table name: SOURCE

SOURCE (SOURCE_ID, LINE_VOLTAGE, MEDIUM)

SPEAKER

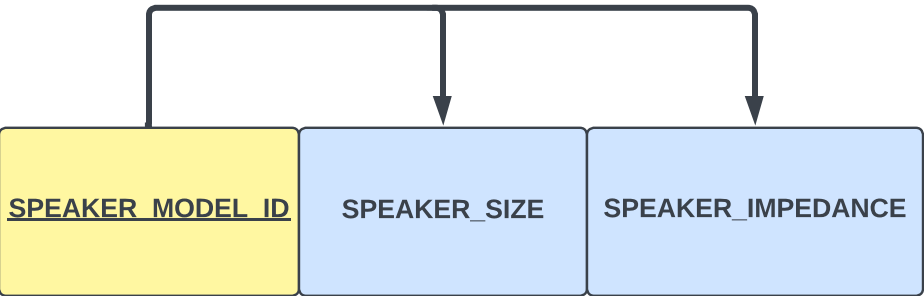| SPEAKER_MODEL_ID	SPEAKER_SIZE	SPEAKER_IMPEDANCE

Table name: SPEAKER

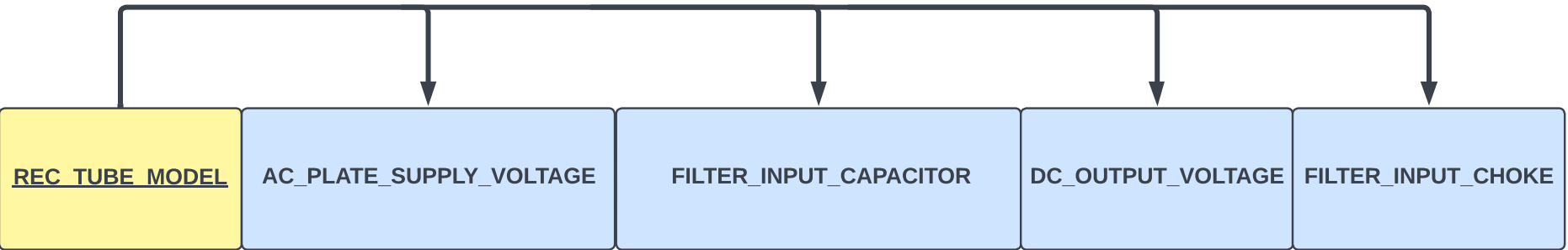SPEAKER (SPEAKER_MODEL_ID, SPEAKER_SIZE, SPEAKER_IMPEDANCE)

Table name: RECTIFIER_TUBE

RECTIFIER TUBE (REC_TUBE_MODEL, AC_PLATE_SUPPLY_VOLTAGE, FILTER_INPUT_CAPACITOR, DC_OUTPUT_VOLTAGE, FILTER_INPUT_CHOKE)
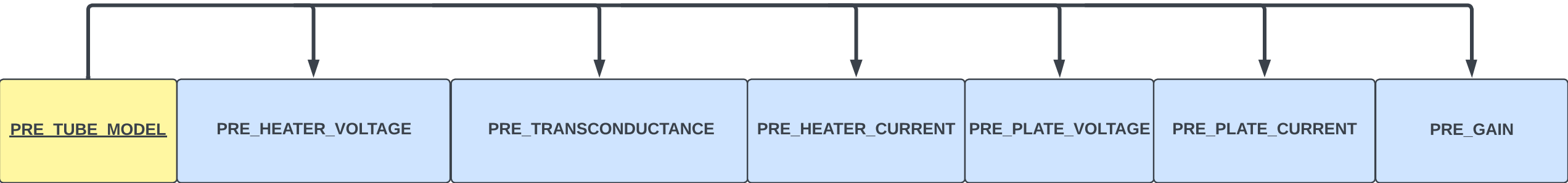
Table name: PREAMP TUBE

PREAMP TUBE (REC_TUBE_MODEL, PRE_HEATER_VOLTAGE, PRE_TRANSCONDUCTANCE, PRE_HEATER_CURRENT, PRE_PLATE_VOLTAGE, PRE_PLATE_CURRENT, PRE_GAIN)
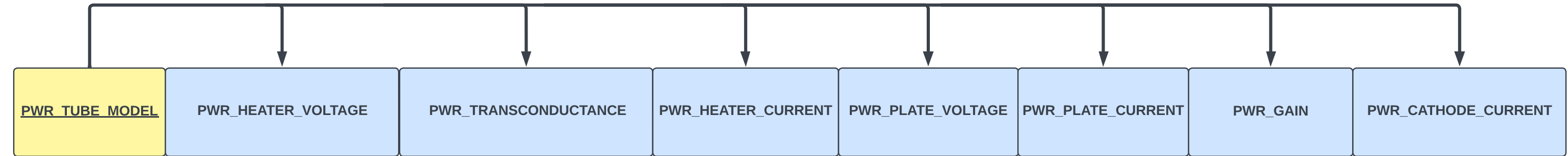
Table name: POWER TUBE

POWER TUBE (REC_TUBE_MODEL, PWR_HEATER_VOLTAGE, PWR_TRANSCONDUCTANCE, PWR_HEATER_CURRENT, PWR_PLATE_VOLTAGE, PWR_PLATE_CURRENT, PWR_GAIN, PWR_CATHODE_CURRENT)