Project Proposal Due Date: November 02, 2014

Name of Application: Standard and Certificate Tracking Database

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Final Project Proposal

Statement of the problem and purpose of the Project: The goal of this project is to create a database application for a company that makes and measures standards of measurement. The database will keep track of the product catalog, current inventory, and certifications of measurement.

This application will act as updated version of the database currently in use (a single-user Lotus Approach database whose structure was last updated in 2003). This application will provide laboratory technicians the ability to accurately check the inventory for a given product, something that is currently done using a single-table Excel spreadsheet. This application will also keep track of available products and provide information about them, including their composition and specific densities. Finally, this application will keep track of standards that have been certified and will indicate when a set (the standards referenced by a given certification) has been completed and is ready for shipment as well as calculate whether the thickness of a given standard is within the required range (15%) of the target value.

Scope of the study: The application will include forms and reports to both enter information in the database and to allow reporting.

The following is a list of tentative forms:

1. Products (add, update, and potentially delete)
2. Technicians (add, update, and delete)
3. Certifications (add and update)

The application will include the following reports:

1. Available Products by composition and type, including available stock
2. Current and historical Certifications by status and their associated Standards
3. Calculate the specific density for a given composition and/or product

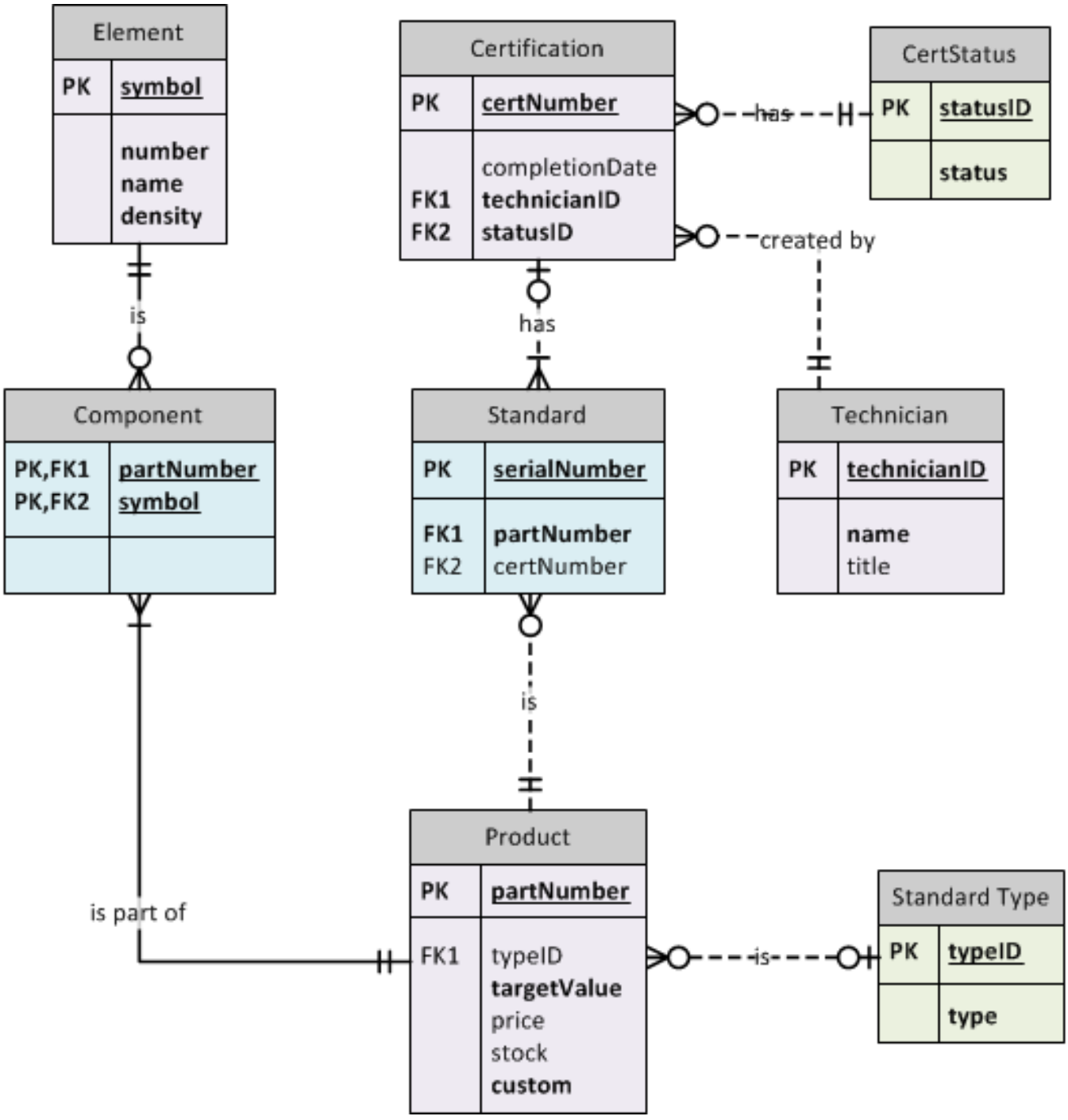
4. The main menu

Methodology: The data required for this project will be based on sample data provided to me by my girlfriend, who works for this company. Available products will represent a subset of the products currently sold by the company. Information about the physical properties/names of the elements is, of course, freely available. I will not use the real names of any of the technicians that work at the company. The pricing will be based on the actual prices of available products and the various calculations will use the correct industry-standard formulas.

Original Work: I hereby certify that this project was prepared especially for this course, and that this or a similar version has not been submitted to any other course.

Prototype: Enclosed to this report the reader will find the full data model and the record diagrams.

FULL DATA MODEL



RECORD DIAGRAMS

Element

Symbol[PK]	number	name	density
Au	79	Gold	19.30g/cc
Ni	28	Nickel	8.91g/cc
Cd	48	Cadmium	8.65g/cc
Pb	82	Lead	11.34g/cc
Sn	50	Tin	7.31g/cc
Zn	30	Zinc	7.14g/cc
Pd	46	Palladium	12.02g/cc

Product

partNumber[PK]	typeID[FK]	targetValue	price	stock	custom
P4235073	F	80µin	$275.00	12	FALSE
P1864771	P	800µin	$275.00	4	FALSE
P3273971	P	4µin	$300.00	0	FALSE
P2433684	I	10000µin	$150.00	0	TRUE
P8926488	F	500µin	$400.00	38	FALSE
P2450605	P	350µin	$300.00	23	FALSE
P6717309	I	10000µin	$300.00	33	FALSE
P7051615	P	10µin	$300.00	0	TRUE
P2026166	F	20µin	$375.00	44	FALSE

Certification

certNumber[PK]	technicianID[FK]	statusID[FK]	completionDate
C76486	T07	P	5/30/2014
C30122	T02	C	7/18/2014
C28905	T02	R	7/5/2014
C95534	T01	X	5/29/2014
C90120	T03	R	5/1/2014
C38832	T07	X	5/15/2014
C86643	T08	C	9/28/2014
C31524	T09	X	7/13/2014
C58748	T09	C	10/24/2014

Component

partNumber[PK FK]	symbol[PK FK]	composition
P1864771	Zn	100%
P2026166	Pd	100%
P2433684	Cd	100%
P2450605	Pb	10%
P2450605	Sn	90%
P3273971	Au	100%
P4235073	Sn	30%
P4235073	Au	70%
P6717309	Ni	60%
P6717309	Cd	40%
P7051615	Ni	20%
P7051615	Pd	80%
P8926488	Ni	15%
P8926488	Zn	85%

Standard

serialNumber[PK]	partNumber[FK]	certNumber[FK]	actualValue
S5176497	P7051615	C30122	10.2µin
S3907214	P2450605	C90120	364µin
S1833312	P1864771	C90120	725µin
S5963614	P6717309	C90120	10000µin
S3109331	P3273971	null	null
S8090772	P3273971	null	null
S1638207	P1864771	C38832	802µin
S7586033	P6717309	C28905	10000µin
S5640940	P7051615	C90120	9.87µin
S1851626	P8926488	C76486	512µin
S3257788	P8926488	C38832	500µin
S9718670	P3273971	C38832	5.08µin
S5625249	P2026166	C38832	23µin

Technician

technicianID[PK]	name	title
T09	Gary Phelps	Junior laboratory technician
T10	Alma Tucker	Junior laboratory technician
T03	Clarence Washington	Laboratory technician
T04	Amber Cruz	Laboratory technician
T05	Lori Klein	Laboratory technician
T06	Israel Vargas	Laboratory technician
T07	Mitchell Fuller	Laboratory technician
T08	Charlotte Bowman	Laboratory technician
T02	Christine Bowers	Senior laboratory technician
T01	Dean Weaver	Senior laboratory technician

Certification Status

statusID[PK]	status
R	Requested
P	In Progress
C	Complete
X	Canceled

Standard Type

typeID[PK]	type
F	Foil
I	Infinite
P	Plated