

Design Documents for BeyondTranscripts (StudentPaths)

Wireframe

Student: Joe Smith	
CS 0401	
CS 0441	
CS 0445	
CS 0447	
CS 0449	
CS 1501	
CS 1502	
CS 1550	
CS 1555	

Service Steps

- **Service Receives:**
Student ID from User Interface
- Service Needs to Obtain Courses for Student ID from database and return to frontend
- **Returned:** Course List for Student

Data Model

- A table STUDENT_COURSES holds the link between STUDENT and the COURSES they have taken

STUDENT_COURSES

Student ID	Course ID
CHAR (7)	CHAR (6)

Wireframe

Student: Joe Smith

CS 0401

CS 0441

CS 0445

CS 0447

CS 0449

CS 1501

CS 1502

CS 1550

CS 1555

Service Steps

- **Service Receives:** Course ID and Semester ID from User Interface
- Service Needs to Obtain CPM from database and return to user
- **Returned:** CPM for Course

Data Model

- Each course is represented by an XML file
- We must maintain the following properties with an XML file: class number, semester code, XML content, and date loaded
- The actual retrieval of data for a student is considered in an upcoming slide scenario

COURSE_CONTENT_MAPS

Course ID	Semester ID	XML Content	Date Loaded
CHAR (5)	CHAR (4)	BLOB	DATETIME

Data Definition Language (DDL) for Each Table

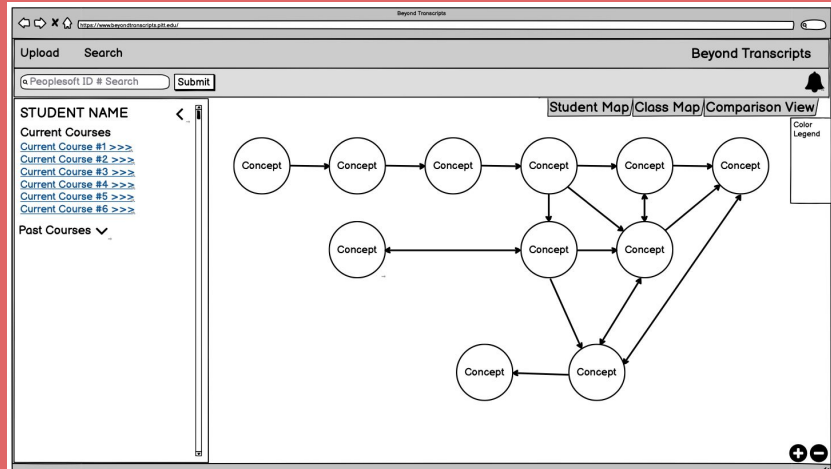
STUDENTS		
ID	First Name	Last Name
CHAR (7)	VARCHAR (50)	VARCHAR (50)
ID	First Name	Last Name
1234567	Jonathan	Hanobik
2345678	Jacob	Hoffman

COURSES					
Course ID	Sem. ID	Dept Code	Numeric Code	Title	Instructor ID
CHAR (5)	CHAR (5)	VARCHAR (6)	VARCHAR (6)	VARCHAR (50)	CHAR (7)
Course ID	Sem. ID	Dept Code	Numeric Code	Title	Instructor ID
12345	9876	CS	0449	Intro to OS	4356723

STUDENTS_COURSES	
Student ID	Course ID
CHAR (8)	CHAR (6)
Student ID	Course ID
1234567	1
2345678	2

Scenario: CPM needs populated with Student Data

Wireframe



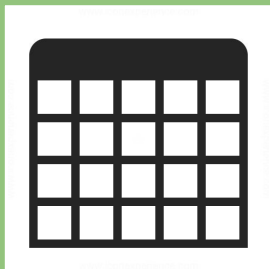
Service Steps

- **Service Receives:** Student ID for Selected Course
- Service must pull data from various sources (Canvas, TopHat, Blackboard)
- **Returned:** Aggregate Grade Data for Student ID in Course

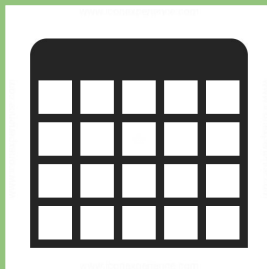
Data Model

- Student Data Must Be Retrieved From Canvas, TopHat, and GradeScope
- Each Datasource API receives data in a different format. It's crucial to understand the response format to figure out how to hold the data in memory
- Because each source has great **variance** in how the data is returned, it will be difficult to save this in a database; rather we should hold them in Java **TableSaw** Objects

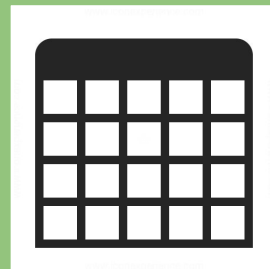
STUDENT_CANVAS



STUDENT_GRADESCOPE



STUDENT_TOPHAT



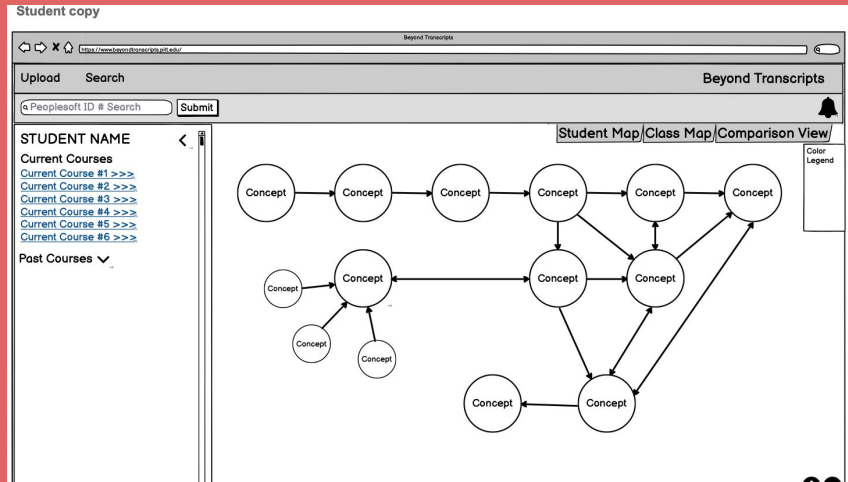
A Note on Each Data Source
(To Be Populated Upon Learning More About Respective APIs)

Canvas

TopHat

Gradescope

Wireframe



Service Steps

- **Service Receives:** Request To Expand a Topic within a Course
- Service Must Aggregate and Return The Concepts for the User Interface to Display
- **Returned:** Specific Concepts Within Selected Topic

Data Model

- Each Course Should Be Stored In a **COURSES** table with a unique identifier
- Each Topic Should Be Stored in a **TOPIC** table with unique identifier
- Each Concept Should Be Stored in a **CONCEPT** table with unique identifier
- Each Course, Concept, and Topic Should Be Stored in a table to provide a mapping

Data Definition Language (DDL) for Each Table

TOPICS

ID	Concept Title
CHAR (7)	VARCHAR (50)

ID	Concept Title
1	C LANGUAGE
2	BUFFERS

Same for CONCEPTS

COURSES_TOPICS

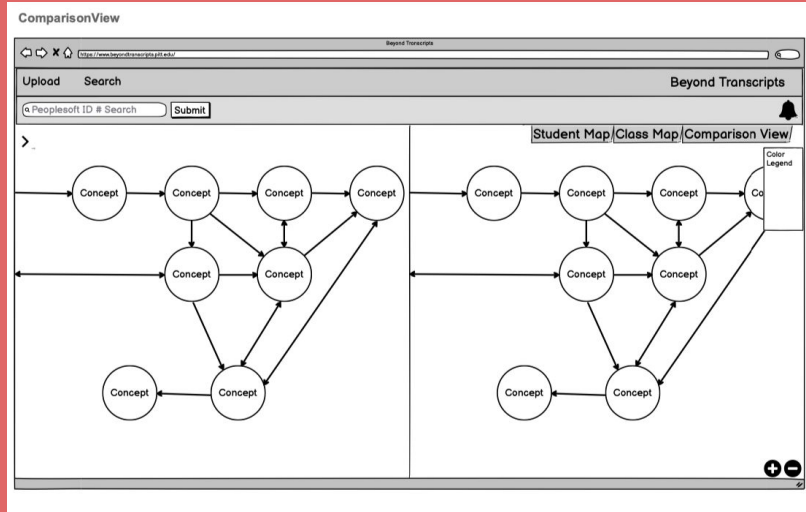
Course ID	Semester ID	Topic ID
CHAR (5)	CHAR (4)	CHAR (7)

Course ID	Semester ID	Concept ID
12345	6789	1
41296	6780	2

Same for CONCEPT_TOPICS

Scenario: User Chooses to Compare

Wireframe



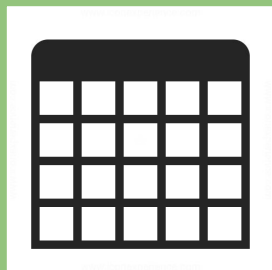
Service Steps

- **Service Receives:** Request To Load Another CPM with Aggregated Student Data
- **Returned:** Specific CPM with Data Populated

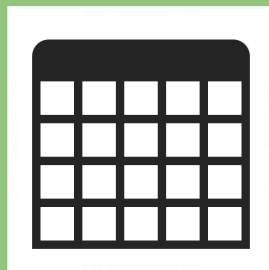
Data Model

- Data Model is similar to what we specific for “Retrieve Student Data”, except this time we need to gather the criteria for all people, rather than just one student.
- Calculations can be reused and completed on a larger scale, rather than per student

ALL_CANVAS



ALL_GRADESCOPE



ALL_TOPHAT

