

The logo for OTU Bookstore is centered on a background of blue-tinted bookshelves filled with books. The logo consists of a stylized 'U' and 'T' in white and blue, followed by the text 'OTU Bookstore' in white and orange.

OTU Bookstore

Team

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Course

Data Management Systems | SOFE 3700

Instructor

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Project Overview

An approachable and user-friendly University bookstore that allows users to quickly find books relevant to their enrolled courses and provides efficient search methods for ease of access. This product also follows COVID-19 health and safety guidelines to ensure the safety of the OTU students and faculty.

Introduction

Preplanning

Problem

The current OTU Bookstore is cluttered, clunky, slow, and is hosted by a third party partner named Follet Higher Education Group.

Solution

To create a fast, secure, lightweight bookstore web application that is integrated locally within the university while simplifying the entire ordering experience.

Features

The website is used for **ordering OTU textbooks** online through a clean interface.

The website allows **only OTU emails to be registered**, and has **cookies to retain account-related information**.

It provides **quick user-friendly access** for ordering textbooks, simplifying the process and adding the textbook costs directly to the student's tuition.



Pooled database
queries through MySQL
for Node.JS



Secure session
authentication using
PassportJS



Personalized browsing
by course enrollment



Partial book name /
course ID search
capabilities

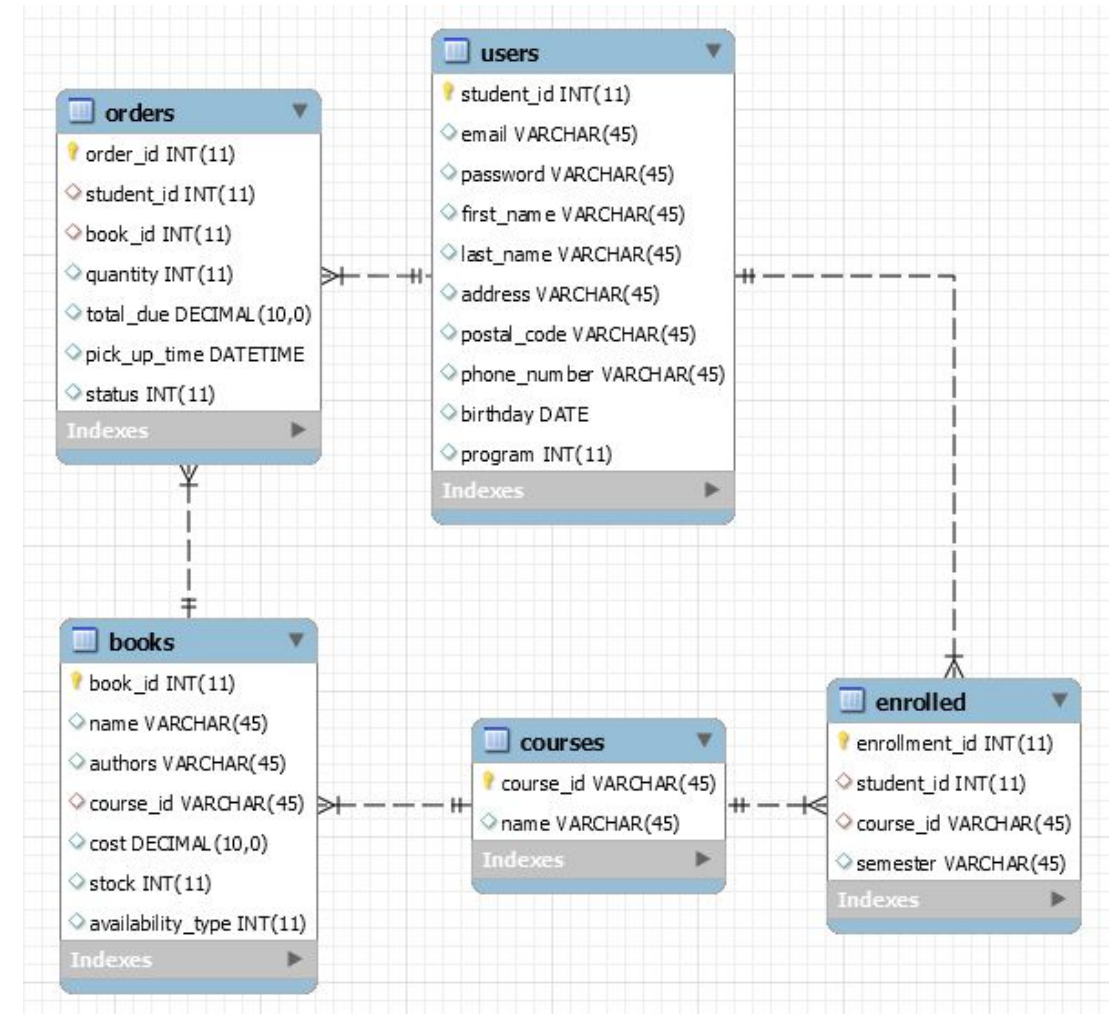


Friendly, uncluttered UI

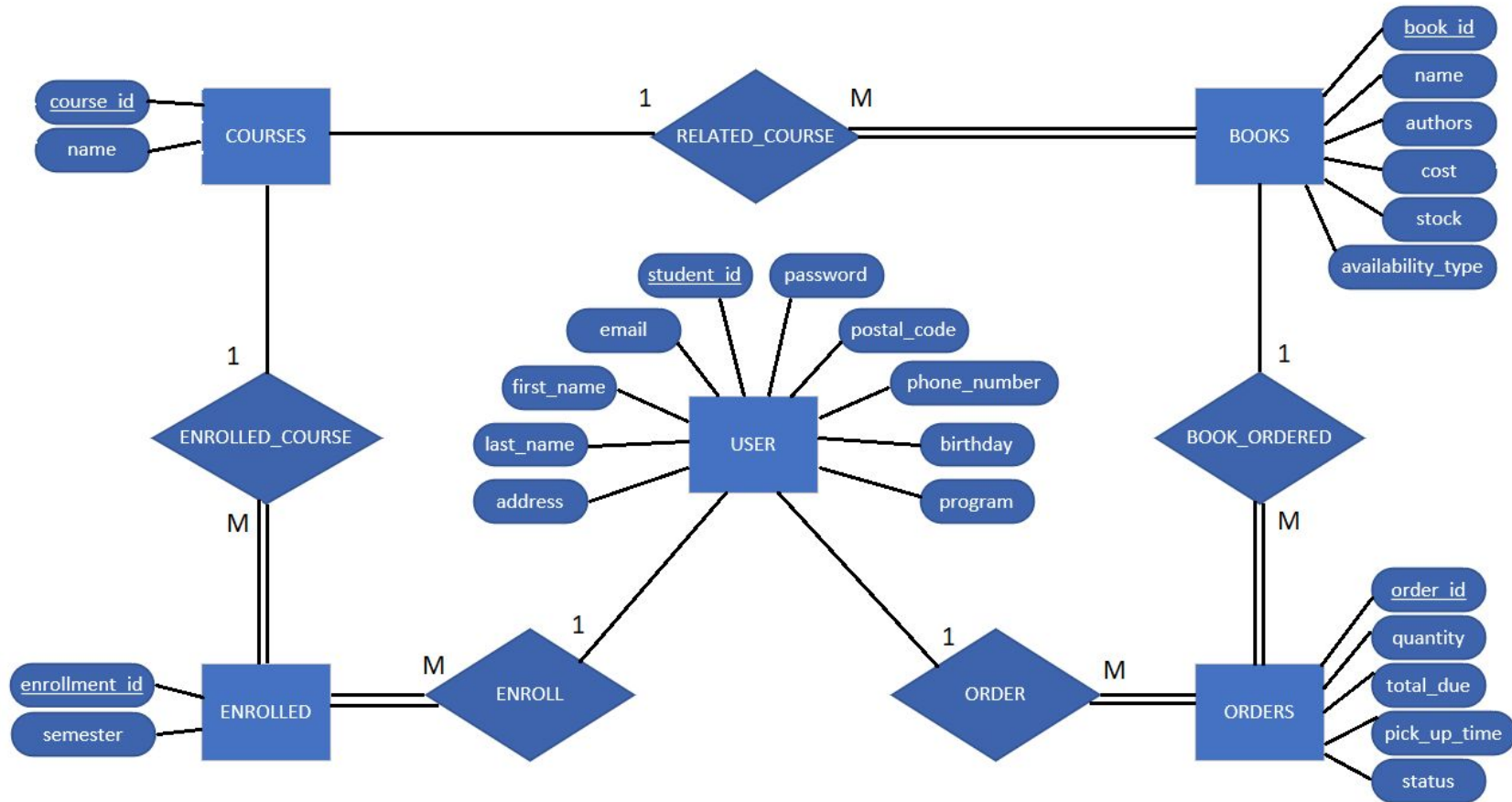
A sessions table is automatically generated by Express MySQL Sessions, and does not have direct relations to other tables.

	session_id	expires	data
1	4BkKC1_z9hUvf4_nuXBDXQG0wEDBaQg	1606427818	{"cookie":{"originalMaxAge":null,"expires_...
2	wH5Wk5a00TC_RcAqc_An2ncFWdCZo9iF	1606363067	{"cookie":{"originalMaxAge":null,"expires_...

Database Structure



ER Diagram



How it Works

Components and Features

The Stack

Node.js

PassportJS

HTML5/CSS3

Javascript

JSON

MySQL

Bootstrap

EJS

ExpressJS

Express EJS Layouts

Express MySQL Sessions

Connect Flash

Argon2

Inner Workings

Registration

Upon registration, the student's account and enrollment data is imported from the university's API.

Example of password hashed using the Argon2i strategy.

```
100100045 admin@uoit.ca $argon2i$v=19$m=4096,t=3,p=1$f1bLRehhP3/L...
```

Example View

```
getEnrolledCourses : function(nStudentID, pCallback) {

    let sSQL = `SELECT * FROM courses WHERE course_id IN (SELECT course_id FROM enrolled WHERE student_id = ?)`;
    Database.query(sSQL, nStudentID, function(pError, pResult) {
        if(pError) throw pError

        if (pResult.length > 0) {
            let aCourse = [];
            for(var i = 0; i < pResult.length; i++) {
                aCourse.push(new Course(pResult[i]));
            }
            pCallback(aCourse);
        } else {
            pCallback(null);
        }
    });
},
```

View Query

```
sendUserEnrollmentData : function(nStudentID, pOut) {

    User.prototype.getEnrolledCourses(nStudentID, function(aCourse) {

        const aData = {
            headers: ["Course ID", "Course Name", ""],
            rows: new Array(),
        }

        if (aCourse != null) {
            aCourse.forEach(pCourse => {
                var sButton = `

```

API JSON EXPORT

Sampled View

CLIENT SIDE DATA URL RENDER

```

async function updateTable(root) {

  const pTable = root.querySelector(".table-refresh__table");
  const pRes = await fetch(root.dataset.url);
  const pData = await pRes.json();

  // Start Refresh Animation
  root.querySelector(".table-refresh__button").classList.add("table-refresh__button--refreshing");

  // Clear Table
  pTable.querySelector("thead tr").innerHTML = ``;
  pTable.querySelector("tbody").innerHTML = ``;

  // Populate Table Headers
  for (const pHeader of pData.headers) {
    pTable.querySelector("thead tr").insertAdjacentHTML("beforeend", `<th>${ pHeader }</th>`);
  }

  // Populate Table Headers
  for (const pRow of pData.rows) {
    pTable.querySelector("tbody").insertAdjacentHTML("beforeend", `
    <tr>
      ${ pRow.map(pCol => `<td>${ pCol }</td>`).join("") }
    </tr>
  `);
  }

  // Refresh Last Update
  root.querySelector(".table-refresh__label").innerHTML = `Last Updated: ${ new Date().toLocaleString() }`;

  // Stop Refresh Animation
  root.querySelector(".table-refresh__button").classList.remove("table-refresh__button--refreshing");
}

```

API CALL

```

const Express = require('express');
const Router = Express.Router();
const API = require('../core/api.js');
const { enforceAuth, rejectAuth } = require('../core/authentication.js');

//-----

// Handle Enrollment Data for User API -> Authenticated/Internal
Router.get('/course/user', enforceAuth, (pReq, pRes) => {
  API.sendUserEnrollmentData(pReq.user.nStudentID, pRes);
});

Router.get('/course/user/:id', enforceAuth, (pReq, pRes) => {
  var nStudentID = pReq.params.id;
  API.sendUserEnrollmentData(nStudentID, pRes);
});

Router.get('/course/all', (pReq, pRes) => {
  API.sendCourseList(pRes);
});

```


Example View

HTML ELEMENT

```
<div class="module">
  <%- include ("./partials/alert") %>
  <p class="lead mb-3">Active Orders</p>
  <div class="order-refresh" data-url="/api/order/user/active"></div>
  <p class="lead mb-3">Enrolled Courses</p>
  <div class="table-refresh" data-url="/api/course/user"></div>
</div>
```

VIEW RESULT

Enrolled Courses

Course ID	Course Name	
SOFE3770	Software Design	BROWSE BOOKS
PHY1010	Physics I	BROWSE BOOKS
MATH1010	Calculus I	BROWSE BOOKS

Last Updated: 2020-11-25, 5:13:01 PM



Product Demonstration



CREATE AN ACCOUNT USING YOUR UNIVERSITY PROVIDED EMAIL ADDRESS, OR
LOGIN IF YOU ARE AN EXISTING USER.

REGISTER

LOGIN



REGISTER

Please ensure you are signing up using your provided ontariotechu.net email address. ✕

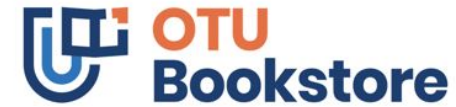
Email

Password

Confirm Password

REGISTER

Have An Account? [Login](#)



LOGIN

Email


Password

LOGIN

No Account? [Register](#)

User Authentication

Demonstration of registration and login forms, authentications are handled securely using PassportJS and Argon2 password encryptions.

 Dashboard Orders Bookstore Search Books Management Logout

Dashboard

Welcome John (100100045)

Active Orders

ID	Book	Cost	Pick Up
----	------	------	---------

Last Updated: 2020-11-25, 4:23:49 PM


Enrolled Courses

Course ID	Course Name	
SOF3770	Software Design	BROWSE BOOKS
PHY1010	Physics I	BROWSE BOOKS
MATH1010	Calculus I	BROWSE BOOKS

Last Updated: 2020-11-25, 4:23:49 PM

User Dashboard

The user dashboard is the first view students will witness upon logging in. The page allows users to view and cancel their active orders. The dashboard also displays the student's enrolled courses along with shortcuts to browse associated textbooks.

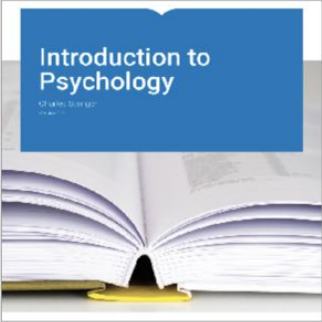

[Dashboard](#)
[Orders](#)
[Bookstore](#)
[Search Books ▾](#)
[Management](#)
[Logout](#)

Bookstore

Welcome John (100100045)

Browse Catalogue

[ALL BOOKS](#)
[BOOKS FOR YOUR COURSES](#)
[BOOKS BY COURSE](#)

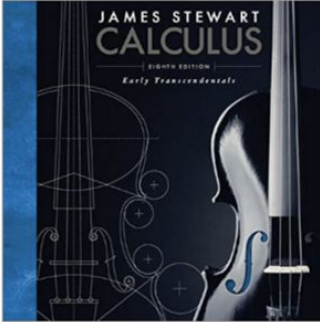


Introduction to Psychology

By Charles Stangor

PDF

ORDER CA\$150.00

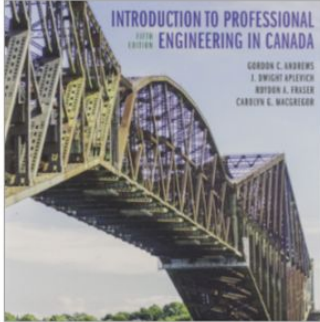


Calculus

By James Stewart

Physical Stock: 0

OUT OF STOCK

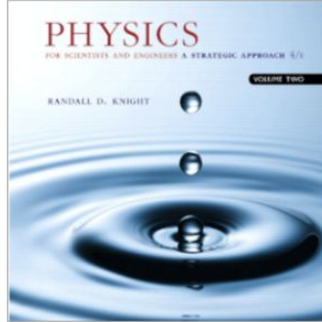


Introduction to Engineering

By Gordon C. Andrews

Physical Stock: 298

ORDER CA\$160.00



Physics


By Randal D. Knight

Physical Stock: 435

ORDER CA\$160.00

Bookstore Catalogue

Demonstration of the bookstore view that displays all relevant books along with their accurate stock and information.


[Dashboard](#)
[Orders](#)
[Bookstore](#)
[Search Books ▾](#)
[Management](#)
[Logout](#)

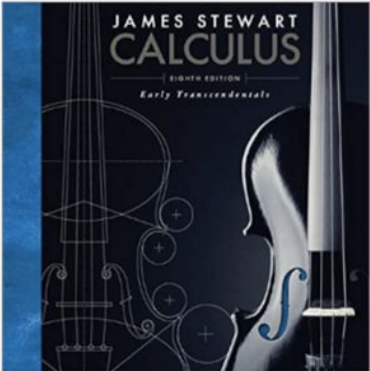
Bookstore

Welcome John (100100045)

Browse Catalogue | Search Results for 'calc'

[ALL BOOKS](#)
[BOOKS FOR YOUR COURSES](#)
[BOOKS BY COURSE](#)

[Views Books by Course](#)
[Views Books for Your Courses](#)

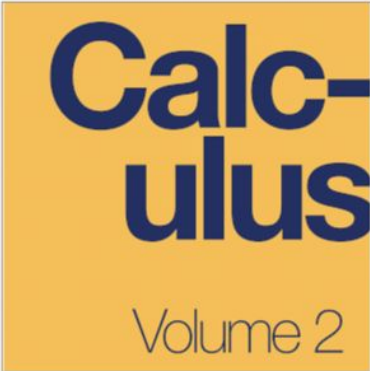


Calculus

By James Stewart

Physical Stock: 0

OUT OF STOCK



Calculus Volume 2

By Gilbert Strang

Physical Stock: 232

ORDER CA\$140.00

Bookstore Search

Easily search textbooks by name or course ID, books for each course in the system, or a personalized collection of books for all courses you are enrolled in.

NEW ORDER

Book: Introduction to Psychology

Authors: Charles Stangor

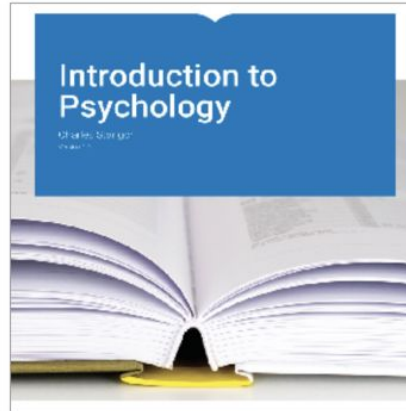
Associated Course: PSYC1010

Deliverable: PDF Sent to admin@uoit.ca

Sub Total: CA\$150.00

HST (13%): CA\$19.50

Total: CA\$169.50



Your PDF document will be sent to your email within 30 minutes of placing the order. If you change your mind within this time, you may cancel the order on your dashboard or orders page.

Once your order is delivered, the total cost of the order will be automatically added to your tuition.

How Are We Helping?

The university has taken the responsibility of ensuring all areas are frequently sanitized while only allowing those who have taken the COVID-19 Pre-Screening test to enter buildings on campus. In addition, to simplify the purchase process and limit physical contact, the cost of all orders are added directly to the students tuition providing the student with more time to make a payment.

ORDER CA\$169.50

Not Ready? [Back to Browse](#)

Product Order for PDFs

Quick, simple and efficient interface for placing an order for a virtual textbook document.

Associated Course: PHY1010



Physical Copy

CA\$160.00

CA\$20.80

CA\$180.80



Product Order for Physical Copies

Simple and efficient method of scheduling a pick up that follows COVID-19 Health and Safety guidelines.

Please select a time between 9:00 AM and 5:00 PM to come pick up your physical copy from the university bookstore. If you change your mind before the pick up time, you may cancel the order on your dashboard or orders page.

Once your order has been picked up, the total cost of the order will be automatically added to your tuition.

COVID-19 Safety Protocols & Measures


During these difficult times we ask that everyone follows the restrictions and guidelines placed on the campus for the safety of all students and faculty. Be sure to take the COVID-19 Pre-Screening Test before coming to campus to pick up your order. While on campus we kindly ask that you do your best to keep a six feet distance from others when possible and wear your mask at all times.

How Are We Helping?

The university has taken the responsibility of ensuring all areas are frequently sanitized while only allowing those who have taken the COVID-19 Pre-Screening test to enter buildings on campus. In addition, to simplify the purchase process and limit physical contact, the cost of all orders are added directly to the students tuition providing the student with more time to make a payment.

ORDER CA\$180.80

Not Ready? [Back to Browse](#)

 Dashboard Orders Bookstore Search Books Management Logout

Bookstore Orders

Welcome John (100100045)

My Orders

ID	Book	Cost	Pick Up	
27	Physics	\$181	11/27/2020, 12:33:57 PM	CANCEL
28	Introduction to Psychology	\$169	PDF	CANCEL

Last Updated: 2020-11-25, 4:36:49 PM

Archived Orders

ID	Book	Cost	Pick Up	
26	Physics	\$181	11/27/2020, 4:23:13 PM	CANCELLED


Last Updated: 2020-11-25, 4:36:49 PM

User Order Page

Allows users to view or cancel their active orders as well as view their full order history.

Management Interface

Allows faculty to cancel or confirm active orders, view all archived orders, and search for user's order profile.

DashboardOrdersBookstoreSearch BooksManagementLogout

Administrator Dashboard

This area is only available to administrators, but has been made public for the prototype.

SEARCH STUDENT

Active Orders

ID	Book	Cost	Pick Up	Student ID	Status		
13	Physics	\$160	12/9/2020, 2:36:24 PM	100100039	ACTIVE	CANCEL	CONFIRM
25	Introduction to Engineering	\$181	11/25/2020, 3:27:26 PM	100100039	ACTIVE	CANCEL	CONFIRM
27	Physics	\$181	11/27/2020, 12:33:57 PM	100100045	ACTIVE	CANCEL	CONFIRM
28	Introduction to Psychology	\$169	PDF	100100045	ACTIVE	CANCEL	CONFIRM

Last Updated: 2020-11-25, 4:42:05 PM

Archived Orders

ID	Book	Cost	Pick Up	Student ID	Status
15	Introduction to Psychology	\$150	PDF	100100039	COMPLETED
16	Introduction to Engineering	\$160	11/24/2020, 2:56:26 PM	100100039	CANCELLED
20	Introduction to Psychology	\$169	PDF	100100040	CANCELLED

Administrator Dashboard

Profile | Results for '100100045'

SEARCH STUDENT

Active Orders

ID	Book	Cost	Pick Up	Student ID	Status		
27	Physics	\$181	11/27/2020, 12:33:57 PM	100100045	ACTIVE	CANCEL	CONFIRM
28	Introduction to Psychology	\$169	PDF	100100045	ACTIVE	CANCEL	CONFIRM

Last Updated: 2020-11-25, 4:44:47 PM

Archived Orders

ID	Book	Cost	Pick Up	Student ID	Status
26	Physics	\$181	11/27/2020, 4:23:13 PM	100100045	CANCELLED

Last Updated: 2020-11-25, 4:44:47 PM

Enrolled Courses

Course ID	Course Name	
SOFE3770	Software Design	BROWSE BOOKS
PHY1010	Physics I	BROWSE BOOKS

Student Order Profile

Example of result page displayed upon searching for bookstore data linked to a student ID.

Thank you for listening!

Any Questions?