



## WEB PROGRAMMING TOOLS AND FRAMEWORKS (WEB322)

**TEST 2: 10% of the final grade**

**Total Marks: 30 marks**

<b>SECTION</b>	<b>WEB322 A</b>
<b>Instructor</b>	<b>Kadeem Best</b>
<b>Date and Time of Exam</b>	Wednesday February 5th, 2020
<b>Course Number</b>	WEB322
<b>Course Name</b>	Web Programming Tools and Frameworks
<b>Duration</b>	1 hour and 45 mins

### EXAM PROCEDURES

- Phones must be turned OFF/SILENT and put in the bag/backpack.
- You are not permitted to leave an exam during the exam period, unless indicated by the instructor. **Please go to the washroom before the exam, as you will not be allowed to leave until you submit a completed exam.**
- **No cheating will be tolerated.** This includes:
  - Talking during the exam.
  - Looking at someone's screen.
  - Taking photos of exam materials
  - Communicating with anyone electronically via, but not limited to, Facebook, WhatsApp Web, Email, Blackboard message, etc
- Your student photo I.D. is required at exams to verify your identity

### ACADEMIC INTEGRITY POLICIES

Academic offenses are taken seriously. You are responsible for reading and respecting the college's **Student Code of Conduct** and **Academic Integrity** policies.

By submitting this test, you agree to adhere to the policies and procedures stated above and understand that offenses can lead to serious academic penalties (Examples include: zero on the assessment, note in student file, course failure, etc).

## Detailed Description

At the beginning of 2020, Seneca College decided to provide students with the option of buying meal packages from their website . You have been hired as a Back-End web developer by “**Seneca College**” to develop a simple meal calculator as a server side web app.

The **simple meal calculator** Web App **MUST** do the following :

- Ask students to enter a meal package code (This can be **K** or **V** or **M**)
- Ask students to enter the quantity of the entered meal packages they want to purchase.
- Ask students to enter a discount code
- Calculate their balance that they are required to pay
- Display their balance

Regarding technologies, Seneca College specifically wants you to use the following :

1. Node.js and Express to set up your Web Server and handle all your routes and business logic.
2. Handlebars to create your views.

Your web app only has **two views**, a **home view** and a **view to show the student’s balance info**.

### User Interfaces

#### Home View

(8 Marks)

The diagram shows a web form titled "Seneca's Meal Calculator". It contains three input fields, each preceded by a label: "Meal Code", "Quantity", and "Discount Code". Below these fields is a button labeled "Generate Bill".

As shown in the above diagram, your home view **MUST** have the **Seneca’s Meal Calculator** heading, a form with the above 3 labels and text boxes, and the **Generate Bill** submit button.

Students should be presented with the home view when they visit the root domain of the web app, for example: **localhost:3000** or **127.0.0.1:3000**

### **FakeDB (Array of Meal Packages)**

**(8 Marks)**

You are required to create an array of 3 employees with the below data . For example :

mealPackageID	mealDescription	unitMealRate	noOfMealsInPackage
K	Keto Package	\$11.50	10
V	Vegan Package	\$7.25	12
M	Meat Package	\$13.15	8

**After the Students enter the required information and submits the form**, your application must “fetch” the correct meal package based on the meal package ID entered in the home page form and then calculate that student’s balance. This is done by searching the array and fetching the “meal” based on the mealPackageID the student entered.

**You are not required to create any models, thus, your Array of Meal Packages does not need to be in a separate file or module**

### **Calculations**

**(8 Marks)**

**Student’s Initial Balance formula :**

$(\text{unitMealRate} * \text{noOfMealsInPackage}) * \text{quantity}$

For example, if a user wants 2 KETO Packages their initial balance will be \$230.00

This is because each Keto package has 10 meals and the unit price per meal is 11.50 and the user in this case wants 2 Keto packages, thus :  $(11.50 * 10) * 2$

**Student’s Discounted Amount formula :**

**Please note, a student is allowed to enter a discount code. At the moment, the only discount code active is “HALFOFF”.** If the user enters said code then their discounted amount will be :

`initialBalance / 2`

For example:

\$230/2 which will give you \$115.00

**If the user leaves the discount code field blank then their discounted amount will be \$0.00**

**Student's Final Balance formula :**

Initial balance - discounted amount

### Students' Balance View

( 6 Marks)



The screenshot shows a web application titled "Seneca's Meal Calculator". It displays the following information:

Meal Description	Keto Package
Quantity : 2	
Initial Balance : \$230.00	
Discounted Amount: \$115.00	
Final Price :\$115.00	

As shown in the above diagram, your web app **MUST** load the student balance view with: Seneca's Meal Calculator heading, meal description, quantity , initial balance, discounted amount and final balance, after the calculations is performed

**Lastly :**

- You can use the **"starter code"** I prepared for you on Blackboard. Go to Course Documents -> Week 5 -> Exam 2 Resources ->Exam Code Starter Package.
- You are **only** allowed to write "Back-End JavaScript" code, no 'Front-End JavaScript" code for this exam.
- No extra marks will be awarded for making the web app pretty.
- Good Luck

**Submission :**

- You are required to Zip your folder and upload to the submission link in Blackboard called "**Exam 2**"
- Please note, you must delete your **node\_modules** folder before zipping and uploading your submission. Thus, your submission should be a zip folder of all your files excluding the node\_modules folder.

# THE END