

### **METHOD DESCRIPTIONS**

### **BEGIN USER**

### User.editMyContactInfo(contactDict)

Preconditions: The provided dictionary must contain all of the necessary fields (first/last name, email address, home address, phone number) and any assignments to the phone number key inside the dictionary must be 10 numbers.

Postconditions: If valid changes, the user's contact information is set to the input fields, all assignments to this user will be updated, the GUI will display all the changes. If missing or invalid inputs, it will display an error message.

Side-Effects: ---

contactDict: input – dictionary contains keys named after all of the user's fields who's values are used to update the user's fields.

### User.getContactInfo()

Preconditions: all fields for a user have been correctly validated in the constructor.

Postconditions: no change to the host object, returns a dictionary: keys named after the user's fields and values associated with each field.

Side-Effects: ---

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### User.login(id, password)

Preconditions: given an id that exists in the system and the associated password for that ID Postconditions: opens application for the role associated with the given ID. Error message displayed if invalid username or password.

Side-Effects: ---

Id: input – an integer to uniquely identify each user

Password: input – a string to unlock the application for each unique ID.

### User.getID()

Preconditions: ID field for a user have been correctly validated in the constructor, every user contains a unique ID from every other user.

Postconditions: No change to host object, returns an integer representing the User's unique identifier.

Side-Effects: ---

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### User.getPassword()

Preconditions: password fields for a user have been correctly validated in the constructor, the password is more than 4 characters long (minimum requirement).

Postconditions: No change to host object, returns a string representing the password for the User's login.

Side-Effects: ---

### User.viewAllTAAsgmt()

Preconditions: There must be at least one active TA.

Postconditions: no change to the host object or the respective sections, it displays all TAs and their assignments. If no TA's, displays a messages indicating there is no TAs.

Side-Effects: ---

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### User.emailUser(recipEmail, body)

Preconditions: the recipient email must be provided and must be an existing user, the email's body must not be null.

Postconditions: the body is sent to the recipient's email address, and the "sending" user will also be sent the email in their "sent" tab.

Side-Effects: ---

recipEmail: input – String represents the user receiving the email, will be used to validate whether the email is sent to an existing user.

body: input – String representing the body of an email.

### **BEGIN ADMIN**

### Admin.createCourse(courseInfo)

Preconditions: The course to be created cannot contain an ID of an already existing course/section. All fields required for a course must be provided in the parameter.

Postconditions: Course with empty assignments and 1 section (a lecture) is created, it is displayed in the GUI and users can now be assigned to it. If provided duplicate ID or missing inputs, displays error message.

Side-Effects: ---

courseInfo: input – dictionary contains keys named after all of the course's fields who's values are used to enter the course's fields.

### Admin.createInstructor(instrInfo)

Preconditions: The instructor to be created cannot contain an ID of an already existing User. All fields required for a instructor must be provided in the parameter.

Postconditions: Instructor with empty assignments is created, the instructor can now be assigned to courses. If provided duplicate ID or missing inputs, displays error message.

Side-Effects: ---

instrInfo: input – dictionary contains keys named after all of the instructor's fields who's values are used to enter the instructor's fields.

### Admin.createTA(TAInfo)

Preconditions: The TA to be created cannot contain an ID of an already existing User. All fields required for a TA must be provided in the parameter.

Postconditions: TA with empty assignments is created, the TA can now be assigned to courses. If provided duplicate ID or missing inputs, displays error message.

Side-Effects: ---

TAInfo: input – dictionary contains keys named after all of the TA fields who's values are used to enter the TA's fields.

### Admin.removeCourse(activeCourse)

Preconditions: The course trying to remove must exist.

Postconditions: the course will be removed from the schedule of classes GUI, and no user can be assigned to it. If provided non-existent course, displays error message.

Side-Effects: The respective sections and assignments to this course will also be removed.

activeCourse: in out - This course will be used to in a search to traverse the courses table to remove. The parameter's state will be mutated: all user assignments/sections are removed.

### Admin.removeAccount(activeUser)

Preconditions: The account trying to remove must exist.

Postconditions: the account will be removed from the schedule of classes GUI, and no course/section can link to this user. If provided non-existent account, displays error message.

Side-Effects: The respective course/section assignments to this user will also be removed.

activeUser: in-out - This user will be used to in a search to traverse the user table to remove.

The parameter's state will be mutated: all course/section assignments are removed.

### Admin.editAccount(activeUser)

Preconditions: the account to edit must exist in the system and the user's input meets formatting requirements for contact information

Postconditions: valid changes to account's state are saved, all GUI elements with this account are updated, course's/sections also reflect any changes. If provided non-existent user, displays error message.

Side-Effects: ---

activeUser: output – This account's information, state, will be modified according to the user's input.

### Admin.courseInstrAsgmt(activeInstr)

Preconditions: The instructor must exist in the system, the instructor has not exceeded their maximum course assignments, and the course trying to assign doesn't already have an instructor

Postconditions: The instructor will receive the course assignment and the course will receive the instructor assignment. If max capacity instructor/course or nonexistent user provided, displays error message.

Side-Effects: ---

activeInstr: in – out: the instructor is used as an input for the course's instructor field and the instructor itself will be assigned to a course.

### Admin.courseTAAsgmt(activeTA, graderStatus)

Preconditions: The TA must exist in the system and the TA has not exceeded their maximum course assignments.

Postconditions: The TA is assigned to the course, the course adds this TA as an assigned User, and the TA is given the declared grader status. If nonexistent user provided or TA is at maximum course assignments, the error message displayed.

Side-Effects: ---

activeTA: in out - the TA is used as an input for the course's List(TA) field, and the TA itself will be assigned to the course. graderStatus: input — applies to the TA object, specifies whether this TA is meant for a lab or just a course.

### Admin.labTAAsgmt(activeTA)

Preconditions: The TA must exist in the system, the TA has not exceeded their maximum lab assignments, the TA hasn't been assigned to grader status, and the lab doesn't already have a TA.

Postconditions: The TA will receive the lab assignment and the lab will receive the TA assignment. If nonexistent TA, full Lab, full TA lab assignments, or grader status is true, then error message displayed.

Side-Effects: ---

activeTA: in – out: the TA is used as an input for the lab's TA field and the TA itself will be assigned to the lab.

### Admin.viewAllCrseAsgmt()

Preconditions: There must be at least one active course.

Postconditions: no change to the host object or the respective course, displays all courses and their User assignments. If no active courses in the system, it displays an error message.

Side-Effects: ---

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### **BEGIN TA**

### TA.hasMaxCrseAsgmts()

Preconditions: Maximum course assignment field has been instantiated in constructor, it is non-negative real number, and any assignments to this TA must be reflected accurately in the TA's state

Postconditions: returns whether the user has reached it's maximum course assignments.

Side-Effects: ---

### TA.hasMaxLabAsgmts()

Preconditions: Maximum lab assignment field has been instantiated in constructor, it is non-negative real number, and any assignments to this TA must be reflected accurately in the TA's state.

Postconditions: returns whether the user has reached it's maximum lab assignments.

Side-Effects: ---

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### TA.assignTACourse(activeCourse)

Preconditions: The "to be assigned" course must exist in the system, The TA has not exceeded their maximum course assignments.

Postconditions: Modifies the TA's state: it is assigned to the course, and the course adds this TA to it's list of TAs.

Side-Effects: ---

activeCourse: in out – the course is used as an input for the TA's list(courses) and the course's state will be mutated to add the TA to it's assigned Users.

### TA.assignTALab(activeLab)

Preconditions: The "to be assigned" lab must be active, the TA hasn't been assigned to grader status, and the lab doesn't already have a TA.

Postconditions: Modifies the TA's state: it will receive the lab assignment and the lab will receive the TA assignment.

Side-Effects: ---

activeLab: in – out: the lab is used as an input for the TA's list(lab) and the lab's state will be mutated to assign the TA.

### **TA.**viewAsgmtsForUser()

Preconditions: The course/section assignments to this user must match the user's assignments to the course/section.

Postconditions: no change to the host object or the respective course, displays all of the user's assignments to Sections or Courses

Side-Effects: ---

### TA.getTACrseAsgmts()

Preconditions: The TA must contain at least one assignment to a course and the TA's assignments to courses reflect any assignments from courses to this TA.

Postconditions: Returns a list of the Courses assigned to this TA. Displays if no current assignments

Side-Effects: ---

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### TA.getTALabAsgmts()

Preconditions: The TA must contain at least one assignment to a lab and the TA's assignments to labs reflect any assignments from labs to this TA.

Postconditions: Returns a list of the labs assigned to this TA. Displays if no current assignments

Side-Effects: ---

### TA.getGraderStatus()

Preconditions: Unique TA has been instantiated.

Postconditions: Returns whether or not the TA has been assigned a grader status.

Side-Effects: ---

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### **BEGIN INSTRUCTOR**

### Instructor.hasMaxCrseAsgmts()

Preconditions: Maximum course assignment field has been instantiated in constructor, it is non-negative real number, and any assignments to this Instructor must be reflected accurately in the Instructor state

Postconditions: returns whether the user has reached it's maximum course assignments.

Side-Effects: ---

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### Instructor.assignInstrCourse(activeCourse)

Preconditions: Given a course that exists in the system, the course can't already have an instructor, and the instructor's course assignments are less than the maximum capacity.

Postconditions: the instructor is assigned the course and the course is assigned the instructor. If non-existent course or maximum capacity instructor/course, then error message displayed.

Side-Effects: ---

activeCourse: in out – the instructor is assigned to the given course and the given course itself is modified to include the new instructor assignment.

### Instructor.assignMyTA(activeTA)

Preconditions: TA must exist in the system, TA must be assigned to one of my courses, TA can't have grader status, the lab to assign the TA to can't already have a TA.

Postconditions: Modifies the TA's state: it is assigned to a lab, and the lab is assigned to this TA. Displays error message if TA isn't assigned to this course, TA has grader status, or the lab is already full.

Side-Effects: ---

activeTA: input output – a TA that is assigned to one of the instructor's courses, it will be used to modify one of the instructor's course's lab's assignments and will be mutated to be assigned the lab.

### Instructor.notifyTAs(body)

Preconditions: notifying instructor must contain a unique email address, there must be  $\geq$  1 TA in the database, the notification body can't be empty.

Postconditions: If the body is not empty, the body's message will be sent to all the TAs and will be sent to the instructor's "sent" tab. If there isn't a body or any TAs, an error message is displayed.

Side-Effects: ---

Body: input – string representing the message the instructor is trying to send.

### Instructor.viewInstrTAAsgmt()

Preconditions: The instructor's assigned courses must contain at least one TA.

Postconditions: no change to the host object or the respective course, displays all of the TA's assigned to courses that are under the Instructor.

Side-Effects: ---

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### Instructor.getInstrCrseAsgmts()

Preconditions: Any assignments, from a course to this instructor, must be reflected by the instructor's assignments to courses.

Postconditions: no change to the host object or the respective course, returns a list of the courses the instructor is assigned to.

Side-Effects: ---

### **BEGIN COURSE**

### Course.addInstructor(activeInstructor)

Preconditions: Course doesn't already have an instructor, the instructor hasn't exceeded their max course assignments.

Postconditions: course is assigned to instructor and instructor assigned to course. Error displayed for maximum capacity reached for instructor or course.

Side-Effects: ---

activeInstructor: in out - This instructor will used to take up this courses instructor slot and it will have to be assigned to this course, it's state will be modified in the process.

### Course.addTA(activeTA)

Preconditions: TA hasn't exceeded their max course assignments, the TA hasn't already been assigned to this course.

Postconditions: course is assigned to TA and the TA assigned to course. Error displayed for maximum capacity reached for TA.

Side-Effects: ---

activeTA: in out - This TA will be added to this course's list of TAs, and the TA will have to be assigned to this course.

### Course.removeAssignment(activeUser)

Preconditions: The user we're trying to remove exists, and the user is assigned to this course Postconditions: the user's assignments to this course will be removed and the courses assignments to the user will be removed. Error message displayed if non existent user or user that isn't assigned to the course.

Side-Effects: ---

activeUser: in out – This user will be used to search for a matching user in the course so it can be removed, then all the user's assignments to/from this course will be removed.

### Course.removeCourse()

Preconditions: course must be active in the schedule of classes system.

Postconditions: this course will be removed from the schedule of classes GUI and no user can be assigned to it.

Side-Effects: The respective sections and assignments to this course will also be removed.

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### Course.viewAsgmtsForCrse()

Preconditions: All of the course's user assignments must have a matching assignment to this course. Must be at least one user assignment to this course.

Postconditions: no change to the host object or the respective users, displays all of the course's users who are assigned to this specific course.

Side-Effects: ---

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### Course.viewSectionsForCrse()

Preconditions: Sections must be correctly instantiated to belong to the course and the course must respectively contain any section assigned to this course.

Postconditions: no change to the host object or the respective sections, displays all of the course's sections who are a part of this specific course.

Side-Effects: ---

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### Course.viewCrseInfo()

Preconditions: All course information must be correctly instantiated in the constructor. Postconditions: no change to the host object or the respective sections, displays all of the

course information (name, ID, course description, semester, modality, sections, assignments)

Side-Effects: ...

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### **BEGIN SECTION**

### Section.getID()

Preconditions: Section has been assigned a unique ID at instantiation.

Postconditions: returns an integer representing the sections unique ID

Side-Effects: ...

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### Section.getParentCourse()

Preconditions: Section must always be assigned a parent course, as per composition, and the section should not exist if the course is removed.

Postconditions: returns a course object representing the course that the section belongs to.

Side-Effects: ...

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### **BEGIN LAB SECTIONS**

### Lab.getLabTAAsgmt()

Preconditions: the TA field within the lab section has been correctly set to a TA that is assigned to this lab. Must be a TA assigned to return.

Postconditions: no changes to the lab's state, just return the TA that is currently assigned. If no TA assigned then error message displayed.

Side-Effects: ---

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### Lab.addTA(activeTA)

Preconditions: the lab cannot already have a TA assigned, the TA cannot be assigned to grader status.

Postconditions: the TA will be assigned to this section, and the section will be assigned to the TA. Will display error message if assigning a TA with grader status, or if the Lab is already full.

Side-Effects: ---

activeTA: in out: the specific TA we want to assign to the lab and have the lab assigned to the TA

### Lab.removeTA()

Preconditions: there must be a TA assigned to the lab section

Postconditions: the TA is removed from the lab section, the lab and TA itself still exist. Error displayed if no TA present.

Side-Effects: ---

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### **BEGIN LECTURE**

### Lecture.getLecInstrAsgmt()

Preconditions: the instructor field within the lecture section has been correctly instantiated to be a instructor.

Postconditions: no changes to the lecture's state, just return the instructor that is currently assigned to the lecture. Error displayed if there isn't an instructor assigned.

Side-Effects: ---

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### Lecture.addInstructor(activeInstr)

Preconditions: the lecture cannot already have an instructor assigned.

Postconditions: the instructor will be assigned to this section, and the section will be assigned to the TA instructor

Side-Effects: ---

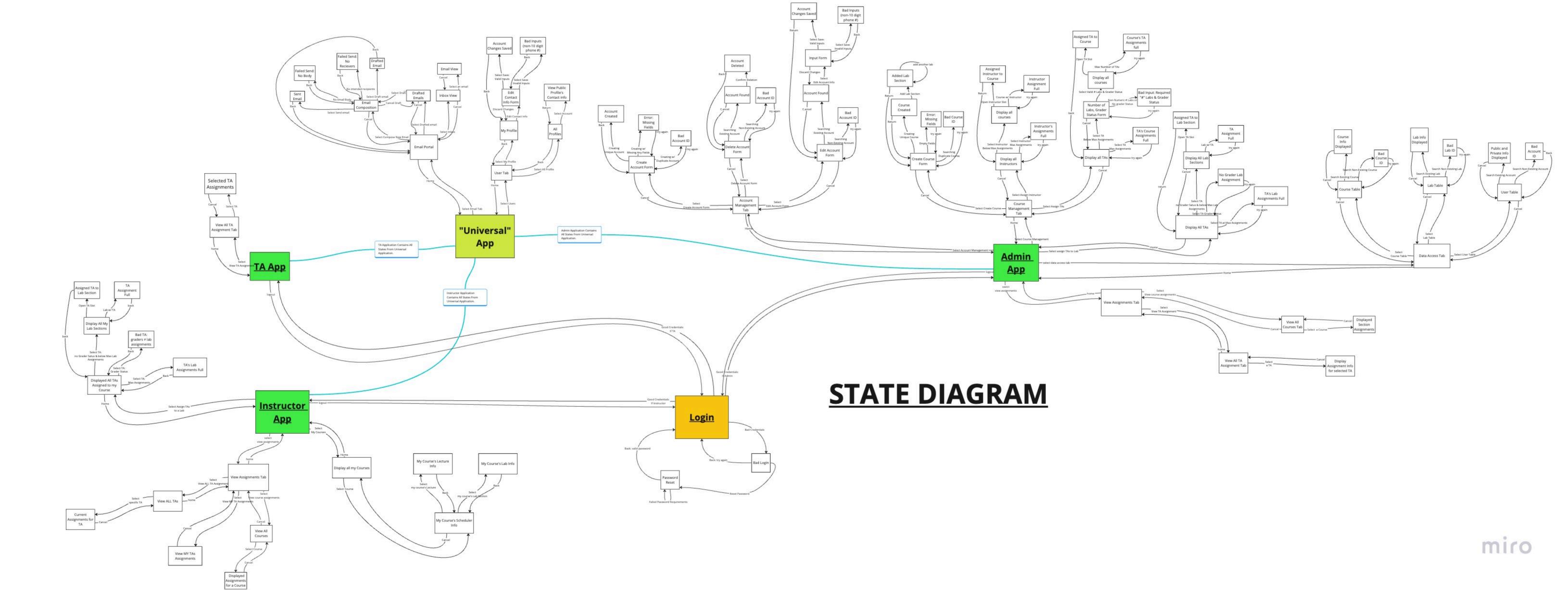
activeInstr: in out: the specific instructor we want to assign to the lecture and have the lecture assigned to the instructor

### Lecture.removeInstructor()

Preconditions: there must be a instructor assigned to the lecture section

| Postconditions: the instructor is removed from the lecture section, the lecture and instructo |
|---|
| itself still exist; they're just not connected any more (as per aggregation).                 |

Side-Effects: ---



## PROTOTYPE: PT 1

## **INSTRUCTOR**

## ADMIN

LININ/EDCAL annlies to All lisers

|                                      | DIVIVERSAL, applies to ALL users      |   |  |   |  |  |  |
|--------------------------------------|---------------------------------------|---|--|---|--|--|--|
| BL #19                               | IO : Password :                       | LOGIN: Bad Credentials  ID  :  Password :  BAD CREDENTIALS (RESET PASSWORD?) <- Select Back                   | LOGIN: Bad Credentials: Password Reset  Enter ID  :  New Password (At least 4 characters) :                | LOGIN: Bad Cred : Password Reset: Bad input  Enter ID :  New Password (At least 4 characters) :  ENTER PASSWORD WITH AT LEAST 4 CHARACTERS  | LOGIN: Bad Cred : Password Reset: Good input  ID  :  Password :  SUCCESSFULLY CREATED NEW PASSWORD     |  |  |
| BL #5<br>BL #13                      | Compose New Email Drafted Email Inbox | Email Body  Cancel Draft Email Send Email   | EMAIL COMPOSITION: Sent Email Successful  Email Successfully Sent  | EMAIL COMPOSITION: Sent w/o Body  EMAIL SEND FAILED: NO EMAIL BODY  | EMAIL COMPOSITION: Sent w/o Recipients  EMAIL SEND FAILED: NO RECIPIENTS  Back                         | EMAIL COMPOSITION: Select Draft Email  Email Drafted  Back |  |
|                                      |                                       | Draft #1 Draft #2 Draft #3 Draft #4 (Select a Draft)  | EMAIL DRAFT: Select Draft  [Intended Recipients (UWM Email) ]:  Email Body  Cancel CANCEL DRAFT Send Email |   |  |  |  |
|                                      |                                       | Email #1 Email #2 Email #3 Email #4 (Select an Email)   | Sender Email Body: Cancel  |   |  |  |  |
| BL #10<br>BL #15<br>BL #16<br>BL# 18 | My Profile All Profiles               | First Name:  Last Name:  Email Address:  Home Address:  Phone Number: () - 0000 - 000000000000000000000000000 | First Name:  Last Name:  Email Address:  Home Address:  Phone Number:  Discard Changes  Save Changes       | USER TAB: My Profile: Edit Contact: Success Change  First Name:  Last Name:  Email Address:  Home Address:  Phone Number: () - 00% - 4000  SUCCESSFULLY CHANGED INFORMATION  Home Edit Contact Info | USER TAB: My Profile: Edit Contact: Invalid Inputs  ENTERRED A NON-10 DIGIT PHONE NUMERIC PHONE NUMBER |  |  |
|                                      |                                       | USER TAB: All Profiles  User #1  User #2  User #3  User #4  | USER TAB: All Profiles: View Profiles Contact Info  User #1  First Name:  Last Name:  Email Address:       |   |  |  |  |
|                                      |                                       | (Select a User)   | Cancel   |   |  |  |  |

## TA

# PROTOTYPE: PT II

BL #17

### TA APPLICATION

Email Portal

User Tab

View All TA Assignments tab

Logout

### VIEW ALL TA ASSIGNMENTS TAB

TA #1: (First Name) (Last Name): (ID)

TA #2: (First Name) (Last Name): (ID)

TA #3: (First Name) (Last Name): (ID)

TA #4: (First Name) (Last Name): (ID)

Α ...

(Select a TA)

Cancel

### VIEW ALL TA ASSIGNMENTS Tab: Select TA

Course #1

Section Assignment #...

Lab/Lecture

Course #2

Section Assignment #...

Lab/Lecture

Course #...

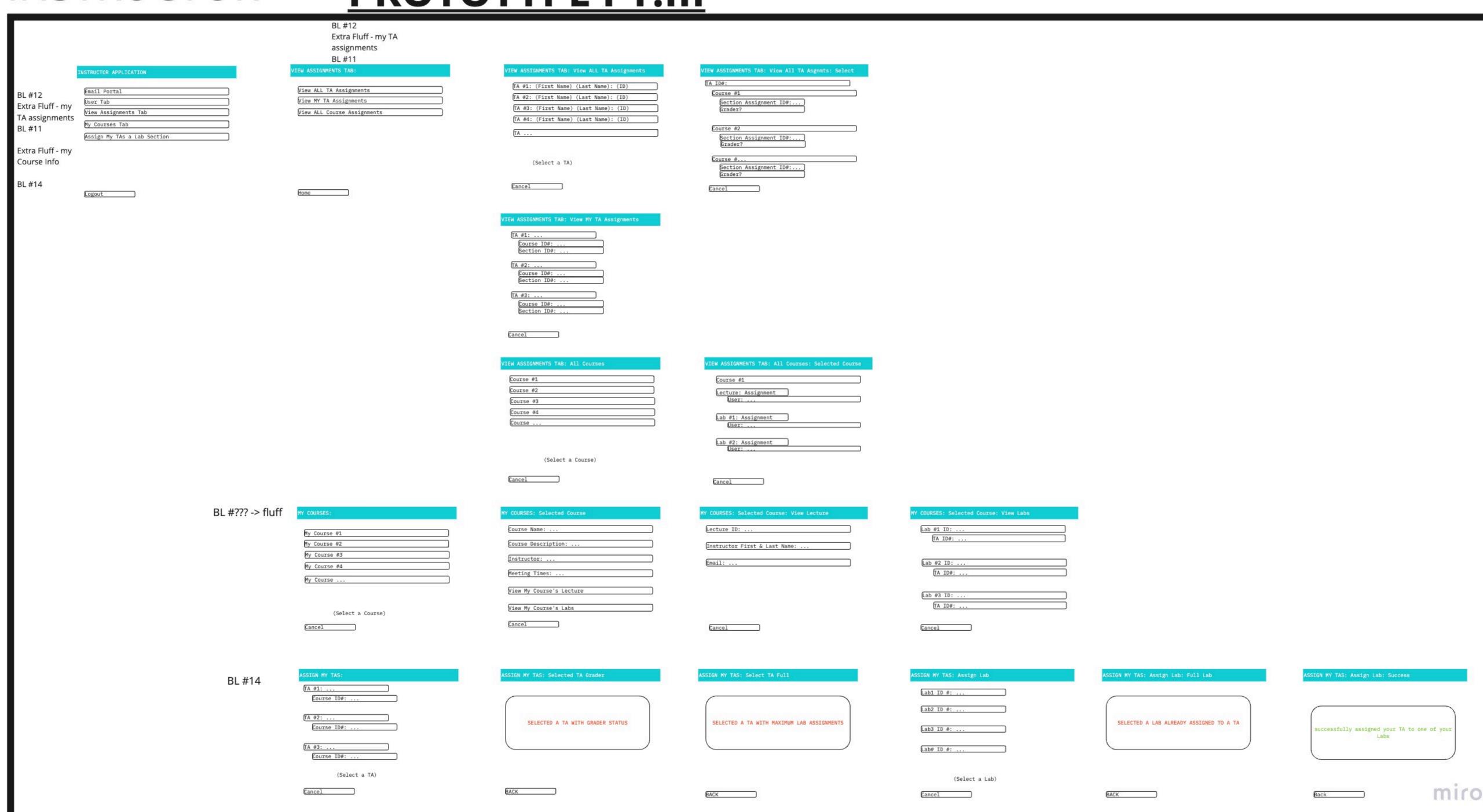
Section Assignment #...

Lab/Lecture

Cancel

### INSTRUCTOR

## PROTOTYPE PT.III



**ADMIN** 

BL #7

## PROTOTYPE PT IV - a) 1st half of Admin

BL #?? -> fluff Extra Fluff - ADMIN APPLICATION VIEW ASSIGNMENTS TAB: VIEW ASSIGNMENTS TAB: View ALL TA Assignments VIEW ASSIGNMENTS TAB: View All TA Asgnmts: Select TA #1: (First Name) (Last Name): (ID) view View ALL TA Assignments Course #1 TA #2: (First Name) (Last Name): (ID) assignments User Tab View ALL Course Assignments Section Assignment ID#:... Grader? TA #3: (First Name) (Last Name): (ID) View Assignments Tab TA #4: (First Name) (Last Name): (ID) Account Management Tab Course Management Tab Section Assignment ID#:... Grader? BL #3 Assign TAs to Lab Tab Course #... Section Assignment ID♥:... Grader? (Select a TA) Cancel Logout BL #1 BL #7 VIEW ASSIGNMENTS TAB: View All Course Assignments /IEW ASSIGNMENTS TAB: View All Crse Asgnmts: Select BL #8 Course #1 Course #1 Course #2 Lecture: Assignment Course #3 Course #4 Lab #1: Assignment Lab #2: Assignment BL #2 Cancel BL #3 BL #4 ACCOUNT MANAGEMENT TAB: Create Account: Bad ID ACCOUNT MANAGEMENT TAB: Create Account: Success CCOUNT MANAGEMENT TAB: Create Account: Missing Field ACCOUNT MANAGEMENT TAB Create Account Form Edit Account Form BAD ID: TRIED TO CREATE DUPLICATE ACCOUNT successfully created account MISSING ACCOUNT FIELDS Try Again Try Again CCOUNT MANAGEMENT TAB: Delete Account Form CCOUNT MANAGEMENT TAB: Delete Account: Bad ID ACCOUNT MANAGEMENT TAB: Delete Account: Found ACCOUNT MANAGEMENT TAB:Delete Account: Found: Success Search for Account (Enter ID):\* First Name: . Last Name: ... SEARCHED FOR NON-EXISTANT ACCOUNT Email Address: .. successfully deleted account Home Address: ... Phone Number: () - ### - #### Try Again Confirm Deletion CCOUNT MANAGEMENT TAB: Edit Account Form CCOUNT MANAGEMENT TAB: Edit Account: Bad ID ACCOUNT MANAGEMENT TAB: Edit Account: Found ACCOUNT MANAGEMENT TAB: Edit Account: Found: Input COUNT MANAGEMENT TAB: Edit Account: Input: Invalid Change CCOUNT MANAGEMENT TAB: Edit Account: Input: Valid Changes Search for Account (Enter ID):\* First Name: Last Name: .. SEARCHED FOR NON-EXISTANT ACCOUNT Email Address: .. SUCCESSFULLY CHANGED INFORMATION Home Address: ENTERRED A NON-10 DIGIT PHONE NUMERIC PHONE NUMBER Email Address: Phone Number: () - ### - #### Home Address: Save Changes Return

### -ADMIN PROTOTYPE PT IV - b) 2nd half of Admin

