

Georgia Tech Transformation Overview

Problem: Apply UI/UX to an outdated application

What kind of app?

Primary Issues

My Role

Approach, Heuristics, Examples

Request for Building Access

Official Full Name:	Stephen Troutman	Immediate Supervisor:	David Lee
Dept / Lab / Company Name:	GTRE (200)	GIT Number:	862816145
Place of Birth:	Mass, USA	Date of Birth:	07/05/1982
Work Phone:		Home Phone:	Not Published
Emergency Contact:	Troutman, Alice Emma	Emergency Phone:	770-423-1075
Height: (in inches)		Weight:	
Hair Color:		Eye Color:	
Reason:	<input checked="" type="radio"/> New Employee <input type="radio"/> New Badging System		
Citizenship:	<input type="radio"/> US Citizen <input type="radio"/> Permanent Resident of the US <input type="radio"/> Foreign National Country		

Explain Why Access Is Required (Contractors indicate the type of services being provided):

Affiliation:

- ☐ Georgia Tech Research Institute (GTRI) Employee
☐ Georgia Institute of Technology (GIT) Employee / Student
☐ Long Term Visitor (Contractor, Sponsor, Visiting Faculty / Staff, Visiting Scholar)

Keep Existing Building Accesses: ☒ Yes ☐ No

Is After-Hours Access required (5 PM - 8 AM)? ☐ Yes ☐ No

Approval: Department / Lab Authorized: Select Closest Approver ▼

PIN Number Four Numeric Digits: ☐ New Pin ☐ Keep Old Pin

Comments for Approver:

Old Designs

Proposal ID #

With Initiator
Lab Approvals
B&P Number Assignment
Proposal Preparation
Routing Sheet Approvals
Package Preparation
In OSP/Others
Final Disposition

Create Proposal Request

Request to write a Proposal

Proposal Information	Sponsor Information
<p>Proposal ID: <input type="text" value="0079"/></p> <p>Proposal Title: <input style="width: 100%;" type="text"/></p> <p>Costpoint Title: <input style="width: 100%;" type="text"/> <small>(25 characters maximum)</small></p> <p>Initiation Date: 12/18/2015</p> <p>Initiator: Rodriguez, Stefano (0790-030 - andrguez,St)</p> <p>PD/PI: <input style="width: 100%;" type="text"/> <input type="button" value="O"/> <small>(Type in the last name of the person you are searching for and select from dropdown)</small></p> <p>Document Type: <input style="width: 100%;" type="text" value="PROPOSAL CONTRACT"/></p> <p>Department: 0790-030</p> <p>Costpoint Org: 0790-030-000-14000-INTL (0790-030-14000-INTL)</p> <p>Division/Branch: <input style="width: 100%;" type="text" value="0790-030-000-14000-INTL"/></p> <p>Organization Code: 0790-030-14000-INTL</p>	<p>Sponsor: <input style="width: 100%;" type="text" value="please start typing"/> <input type="button" value="O"/> <small>(Type in a word in the name of the sponsor you are searching for and select from dropdown)</small></p> <p><input type="checkbox"/> Check this box if an existing Contracting Customer was not located. Type the Contracting Customer name in the above box.</p> <p>Prime Sponsor: <input checked="" type="radio"/> Federal <input type="radio"/> State <input type="radio"/> Industry <input type="radio"/> Internal <input type="radio"/> Other</p> <p>Proposal Type: <input checked="" type="radio"/> Contracts <input type="radio"/> Grants <input type="radio"/> Service Agreements</p> <p>Award Type: <input style="width: 100%;" type="text" value="New"/></p> <p>Contract Type: <input style="width: 100%;" type="text" value="Cost Plus Fixed Fee"/></p> <p>Business Area: <input type="button" value="Not Assigned"/> <input type="button" value="I"/> <small>(please click to select)</small></p> <p>For New Proposal: <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p>Technical Customer: <input type="button" value="Not Assigned"/> <input type="button" value="I"/> <small>(please click to select)</small></p> <p><input type="checkbox"/> Check this box if an existing technical customer was not located. Type the customer name in the text box below.</p> <p>Technical Customer <input style="width: 100%;" type="text"/></p>

Old Designs

eRouting: Proposal Request

ReportsMy ActionsMy RequestsAbout

Search

Proposal Request

Proposal Request Data

Attachments

History

Related Items

Proposal Request P4311

Take Actions

Proposal Request: Proposal Request Data

[PDPI/OWNER]

Proposal Request Created

In Approval

Proposal Request Approved

Proposal Request with PD/PI or Initiator

P4311

test

(PD/PI) | Created on 10/25/2019

Key Personnel

Name:

Department Org ID:

Optional.

Email:

Phone Number:

Optional.

Proposal Home Department:

Campus Address and Mail Code:

Optional.

Prime Executing Unit:

New Design

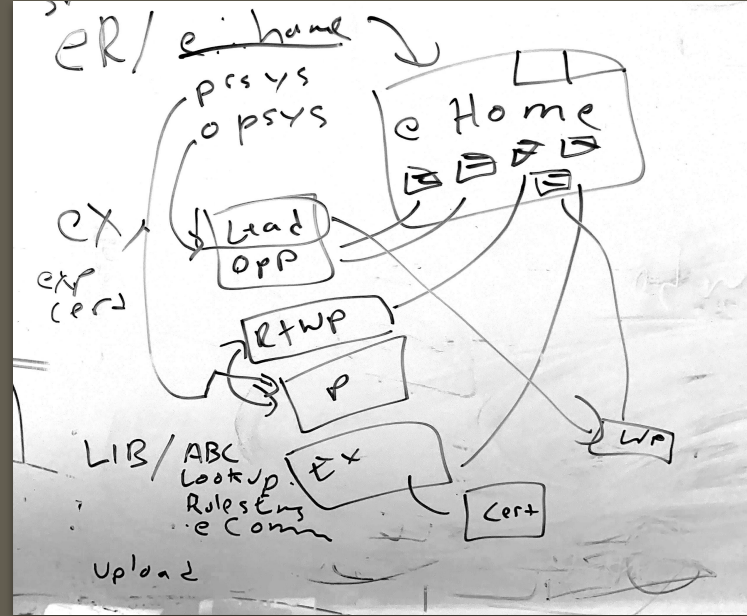
What kind of apps?

Internal web applications:

- Research Contracts
- Proposals
- Security Arrangements

Needs:

- Apps route documents to different users for review and approval
- Expect similar behaviour in each
- Would link to each other in subprocesses



Initial Problem

- Front end had no design process or standards
- Customers were not satisfied
- App development time was unacceptable

What was my role?

A new role in the department: UI and UX

- Increase customer satisfaction and product acceptance
- Reduce engineer rework from miscommunication or bad designs
- Give the customer a feeling of a valuable purchase

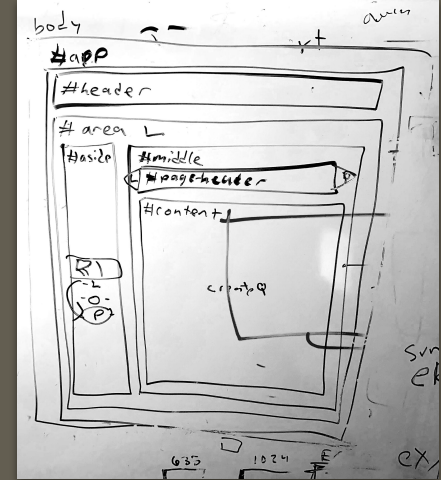
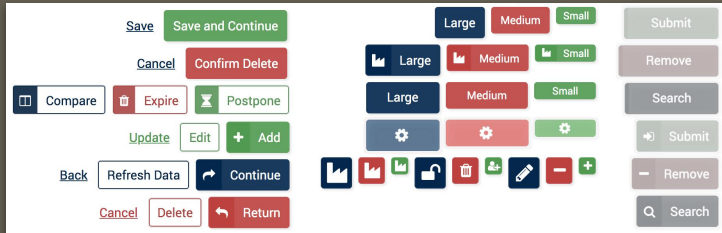
Approach

- Create styling
- Streamline workflows
- Modify default framework
- Establish standards

Initial UI Steps - Extend Bootstrap

Implement Bootstrap and add custom framework modifications:

- Collapsible sidebar and menus
- Title bars: global menu, app menu, page title, content header
- Support two column layout for fields
- Theme style was too broad, no color palette, needed branding
- Mobile and responsive
- Extend buttons



Initial UI - Scalability Issues

Bootstrap added powerful pre-built classes but

- Every detail needed to be re-specified for every element and form field
- Every engineer needed Bootstrap expertise

```
<div class="row">
... <div class="form-group">
... <div class="col-lg-6 col-md-6 col-sm-6 col-xs-12">
... <div class="col-md-offset-1 col-lg-11 col-md-11 col-sm-12 col-xs-12" ng-class="{true: 'esd-validation'}"
... <label for="email">Email Address:</label>
... <input ng-disabled="disableForGtId" name="email" id="email" type="email" .. ng-model="email">
... <p class="esd-field-info">
... <span>Please enter an email address the user has access to. All instructions are in the
... <p class="esd-field-message"><span class="text-danger" ng-show="createBadge">
... </p>
... </div>
... </div>
... <div class="col-lg-6 col-md-6 col-sm-6 col-xs-12">
... <div class="col-lg-11 col-md-11 col-sm-12 col-xs-12" ng-class="{true: 'esd-validation'}"
... <label for="workPhone">Work Phone #:</label>
... <input ng-disabled="disableForGtId" type="text" name="workPhone" id="workPhone">
... <p class="esd-field-info">
... <p class="esd-field-message"><span class="text-danger" ng-show="createBadge">
... </p>
... </div>
... </div>
... </div>
</div>
```

Introduce Components

Lead change to use reusable templated components

- Reduced html/classes coding by 95%
- Still supported customization
- Extremely quick front end development
- Uniform style
- Consistent accessibility solutions
- Flexbox positioning
- UI resizing for screens/devices
- Basic validation
- Easy to update/maintain all at once
- Reusable

Old

HTML/CSS/Label/Tooltip/Input/Validation/Info

```
<div class="row">
  <div class="form-group">
    <div class="col-lg-6 col-md-6 col-sm-6 col-xs-12">
      <div class="col-md-offset-1 col-lg-11 col-md-11 col-sm-12 col-xs-12" ng-class="{true: 'esd-validation'}"
        <label for="email">Email Address:</label>
        <input ng-disabled="disableForGtId" name="email" id="email" type="email" ng-model="formObj.email" />
        <p class="esd-field-info">
          <span>Please enter an email address the user has access to. All instructions are in the user manual.
        </p>
        <p class="esd-field-message"><span class="text-danger" ng-show="createBadge">
      </div>
    </div>
    <div class="col-lg-6 col-md-6 col-sm-6 col-xs-12">
      <div class="col-lg-11 col-md-11 col-sm-12 col-xs-12" ng-class="{true: 'esd-validation'}"
        <label for="workPhone">Work Phone #:</label>
        <input ng-disabled="disableForGtId" type="text" name="workPhone" id="workPhone" />
        <p class="esd-field-info">
          <p class="esd-field-message"><span class="text-danger" ng-show="createBadge">
      </div>
    </div>
  </div>
</div>
```

New

Components with Attributes

```
<section class="ef-section">
  <h3>Basic</h3>
  <!-- text-field -->
  <field-container>
    <template="text">
      <field-id="email">
        <label="Email Address">
          <tooltip="Please enter an email address the user has access to. All instructions are in the user manual.">
            <target-property="formObj.textField">
      </field-container>
    </field-container>
  </field-container>
  <!-- text-field -->
  <field-container>
    <template="text">
      <field-id="phone">
        <label="Work Phone #">
          <info="Cell or Office ext.">
            <minlength-valid="4">
            <maxlength-valid="10">
            <is-required="true">
            <target-property="formObj.textField">
      </field-container>
    </field-container>
  </field-container>
```

1.
Container Component within jsp

2.
Container Component js uses template and subtemplates

form.jsp

<field-container>

template = "textarea"

field-id = "notes"

label = "Add Note"

<field-container>

<field-container>

fieldContainer.js

```
bindings: {  
  template : "@",  
  fieldId  : "@",  
  label    : "@",  
}
```

templates/
textarea.html

ng-include _label.html

```
<textarea-field  
  field-id="{{${ctrl.fieldId}}}"  
></textarea-field>
```

ng-include _messages.html

templates/
_label.html

<label

for={{\${ctrl.fieldId}}}

{{\${ctrl.label}} </label>

templates/
_messages.html

```
<p>  
  info, validation, etc  
</p>
```

3.
Field Component within
proper template

4.
Field Component js uses template

common/js/
textareaField.js

```
require: {  
  parent: '^fieldContainer',  
  form  : '^form'  
}
```

common/templates/
textareaField.html

<input

id = {{\${ctrl.parent.fieldId}}

</>

Initial UX

- Increase Customer-Developer Communication
- Identify Solutions/Problems
- Questions:
 - What is the decision that needs to be made?
 - What information does a user need to make a decision?
 - What is the source of this information?
 - How can it be displayed clearly?
 - How does the user proceed?
- Form chunking

Reduce miscommunication and expectation errors

Four Types of Comment Textareas				
Type	Workflow Comment - History Log	Form Additional Details - Form	Non-workflow Comment - Notes	Non-workflow Question - Question-Reply
Description	This is the textarea that is tied to an action and a choice of one to three buttons (usually Approve, Deny, Abstain).	This is the catch-all textarea that is for any additional details or notes within a form.	This is the textarea that is not tied to any workflow and can be used at anytime.	This is the textarea that is not tied to any workflow and can be used at anytime to ask specific users a question.
Write Location	Textarea: Near workflow action buttons.	Textarea: Within form, near other fields but usually the last.	Textarea: Outside of form and workflow actions.	Textarea: Outside of form and workflow actions.
Read Location	Table: History Log Email: Next user in workflow Email: Any specified additional user(s)	Textarea: Field within form in post-submission/readonly mode	Table: History Log Email: (Optional) Any specified user(s)	Table: History Log Email: Any specified user(s)
Example Scenario	Reason for rejecting a proposal.	A piece of misc info about the proposal you are submitting.	A piece of misc info about the proposal that has been submitted.	A question for clarification about a part of the proposal.
User Steps	Enter text (Optional in some cases) Select Additional users to be notified Choose a workflow button that will move the workflow forward - Automatically send the text and choice to the log - Automatically email the text and choice to the appropriate user(s) in the workflow and any selected additional user(s)	Enter text Submit full form	Enter text (Optional) Select users to be notified Add Comment - Automatically send the text to the log - Automatically email the text to any selected user(s)	Enter text Select users to receive question Add Clarification - Automatically send text to the log - Automatically email the text to any selected user(s)
Label	Label this textarea without using the word Comment. Instead use a word or phrase that relates to the workflow action: Approval Details Reason for Closing	Label this textarea without using the word Comment. Instead relate it to the form: Additional Proposal Notes Are there any other details you need to provide?	If separate, label this textarea Comments. Add Note to History Log.	If separate, label this textarea Request Clarification.
Suggested Changes	Keep this textarea with the workflow action buttons in it's own section or area. Label appropriately. Can add text explaining that this text will go to the log and specify the role that will receive it next. popup on action button	Keep this textarea with the form, usually as the last field. Label appropriately. Don't attempt to use this as a place for conversation.	Keep these two fields combined and move it to the History Log section. Can label the field Comments and Clarifications. Can label the button "Add Comment or ask a Question" Can label the section/sidebar History and Comments. Can use an anchor tag on submit to scroll down to bottom of log to show user that their comment has been added.	
		stay in form	near history	near history

Example: What is an “Add Comments” requirement?

ESD Style Guide

Reports

My Actions

My Requests

Help

Getting Started

Field Templates

Autocomplete

Checkbox Group

Radio Group

Datepicker

Grid

Multiselect

Numeric

Select

Text

Text Area

Upload

Buttons & Icons

Colors & Fonts

Elements

Progress Bar

Info Header

App Bar & Sidebar

Radio Group

Using Radio Group

When to Use

Use the radios component when users can only select one option from a list. May also be used as a toggle if validation is needed.

When Not to Use

If users might need to select more than one option, you should use the **Checkbox Group** component instead.

Examples of Radio Group

Simple Radio:

☐ Ship by Mail

☐ Notify via E-mail

☐ Contact by Phone

☐ Update via SMS/Text

☐ Send Fax

Optional.

Extra Long Test (provided):

☐ Option 1

☐ Option 2

Simple Radio:

```
<field-container
  template="radiogroup"
  field-id="radiogroupSimple"
  label="Simple Radio"
  target-property="domainObj.radioId2"
  lookup-list="domainObj.lookupListLong"
>
</field-container>
```

Extra Long Test (provided):

```
<field-container
```

Create Design System and Library

Apply Interaction Design Principles: Visibility of System Status

- History
- Header
- Sidebars are wizard-like, show user location



Proposal RS Pending OSP Approval

P1692

Example: Two dimensional progressbar, show workflow location

- Accept any amount of nodes
- Instertable nodes
- Substeps or substatus
- Tooltips for additional info or currently assigned to list
- Responsive, collapsible
- Fully done in css

Apply Interaction Design Principles: Consistency and Standards

- Standardized: labels, tooltips, inputs, validation, and messages
- Application suite consistency
 - Establish conventions for workflow actions
 - Uniform Search and Notifications

Apply Interaction Design Principles: Match System and Real World

Removed icon ambiguity from

- “Help” link - Does this go to docs or send an email?

Apply Interaction Design Principles: Error Prevention

- Inline validation
- Hints
- Tooltips
- Selects
- Autocompletes

Apply Interaction Design Principles: Error Recovery

- Help Users Recognize, Diagnose, and Recover
- Inline Validation before submit
- Error summary on submit
- Clear error explanation

Apply Interaction Design Principles: User Control and Freedom

- User mistakes, user exploration
- Withdraw
- Save anytime
- Inline validation
- Submission validation

Apply Interaction Design Principles: Recognition > Recall

- Sidebar orders intended processes
- Show Requests and Actions
- Info Header
- Select, Autocomplete

Apply Interaction Design Principles: Flexibility and Efficiency of Use

- Support Power Users
- Clone
- Quick search

Apply Interaction Design Principles: Aesthetic and Minimalist Design

- Direct, brief labels
- Hide irrelevant sections, subsections
- No filler styling
 - Big pages made small
 - Whitespace vs cramped

Apply Interaction Design Principles: Help and Documentation

- Help
- Tooltips
- Hints
- Design System