Electronic Field Input System

Team 5
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The Problem

- Surveys done by hand, mailed, and entered into Excel
  - Potential for loss
  - Inaccuracies in transcription
  - Long time to access the data

Client Requirements

- Electronic Input System
  - Creel (Top priority)
  - Raw Fish
  - FWIN
- Easily updatable and maintainable
- Fully functional with the database
- Run on Getac Tablet
- Solution can't depend on an Internet connection

2/8/05

Franklin D. Roosevelt Lake Creel Survey Form

Date (mm/dd/yy)							Survey Type	1				Creel Clerk Initials
	0	5	2	4	1	4						J E m

Weekday: 6

Section: 1

Start Work: 0 9 0 0
Finish Work: 2 1 0 0

Start Creel: 1 0 0 0
Finish Creel: 2 0 0 0

Page 1 of 2

Total hours Creeled: 10.0

Comment #	Location	Party #	Party Size	Time Checked	No. of Anglers	Angler Type	Start Time	End Time	Complete Trip	Zipcode	Target Species 1	Target Species 2	Species Caught	Released / Kept	Total Length (mm)	Weight (g)	Species Origin	Mark	Fin Clip	Tag Color	Tag Number
5	1		3	1330	3	1	0630	1315	1	99206	3	0	3	1/15	EST. 380 mm		2	0	0	0	
						1	0630	1315	1	99206	3	0	3	1/15	EST. 385 mm		2	0	0	0	
						1	0630	1315	1	99206	3	0	3	1/10	EST. 390 mm		2	0	0	0	
5	6		3	1340	3	1	0700	1320	1	99206	3	0	3	1/8	EST. 370 mm		2	0	0	0	
						1	0700	1320	1	99206	3	0	3	1/8	EST. 380 mm		2	0	0	0	
						1	0700	1320	1	99206	3	0	3	1/4	EST. 385 mm		2	0	0	0	
													7	0			2	0	0	0	No. Pike 24
5	5		2	1410	2	1	0700	1350	1	99141	3	0	3	0/7			0	0	0	0	
						1	0700	1350	2	99141	3	0	3	0/12			0	0	0	0	
			3	1520		1	0800	1510	1	99109	3	0	3	1/3	EST. 280		2	0	0	0	
						1	0800	1510	1	99109	3	0	3	1/3	EST. 285		2	0	0	0	
						1	0800	1510	1	99109	3	0	3	1/3	EST. 370		2	0	0	0	
5			2	1650	2	1	0700	1510	1	99141	3	0	3	1	395	505	2	0	0	0	
						1	0700	1510	1	99141	3	0	3	1	395	465	2	0	0	0	
													3	1	422	640	2	0	0	0	
													3	1	382	465	2	0	0	0	
													3	1	425	570	2	0	0	0	
													3	1	410	545	2	0	0	0	
5			2	1640	2	1	0800	1620	1	99206	3	0	3	1	395	500	2	0	0	0	
						1	0800	1620	1	99206	3	0	3	1	390	490	2	0	0	0	
													3	1	380	435	2	0	0	0	
													3	1	390	435	2	0	0	0	
													3	1/10	EST. 387 mm		2	0	0	0	

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Notes:

End User
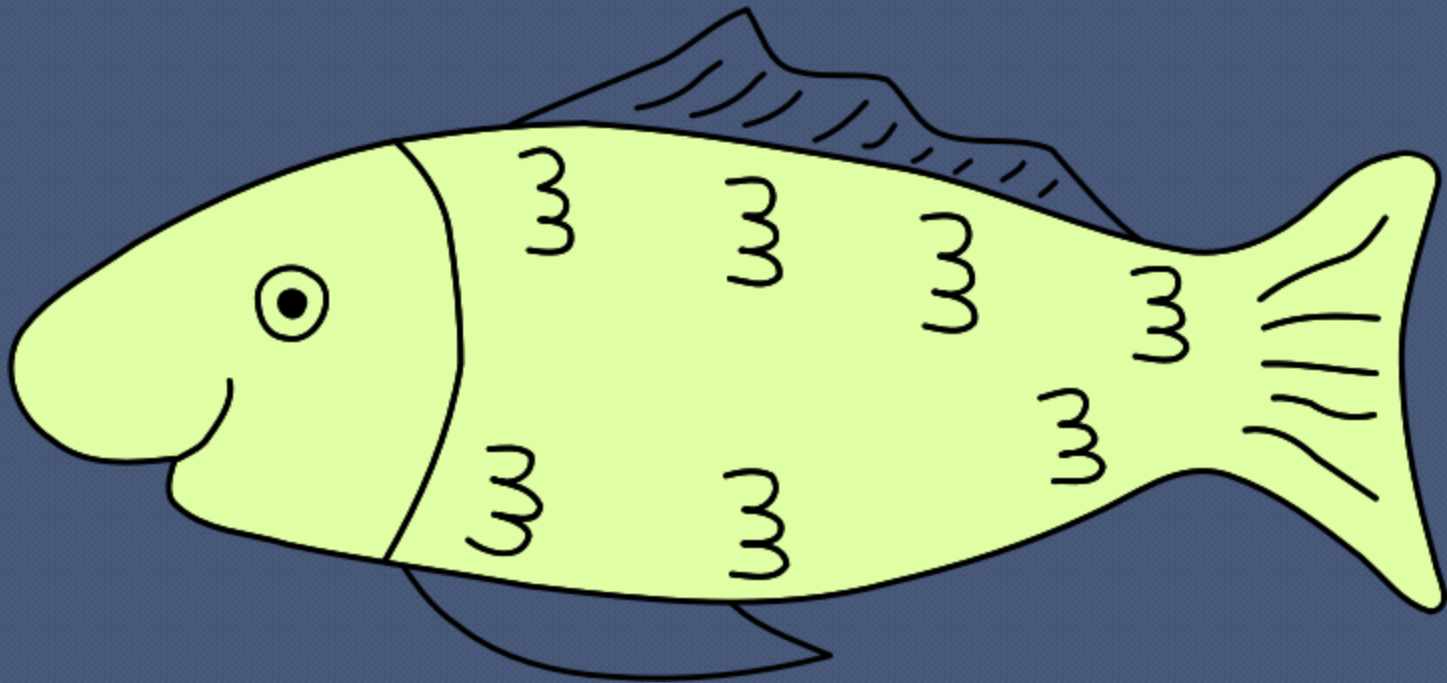
- Creel Clerk
  - Two types
    - Stationary
    - Bus Route
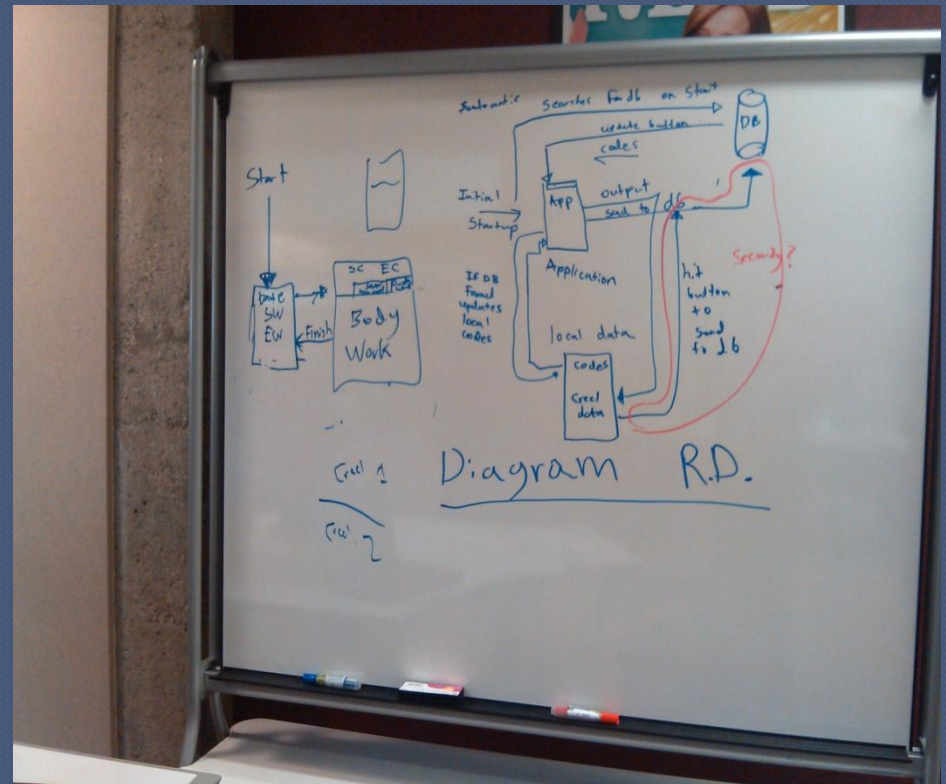 - Trained how to do Creel survey
  - Varying computer skills

Highlights of Our Journey

Initial Ideas

- Automatically try to download updates
- Complete survey
  - Loading screen
  - General work info
  - Data entry
- Store survey data in internal database

After Further Thought…

- Eliminate the loading screen
  - Two use cases
    - At wifi hotspot to update/upload
    - At lake to do surveys
- Store data in log files
  - Uploaded data will be sent through QA
- Display text to eliminate user error
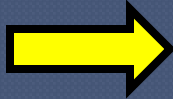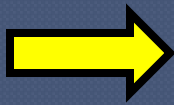 - Send codes to database

Client Suggested Revisions

Species Caught	Kept / Released	Total	Length	Weight	Mark / Tag	Fin Clip	Tag Type	Tag Number	Notes
Rainbow Trout	K R	1	380	712	Y N	Y N	Floy	ABCDEFGHIJ 1234567890	
Kokanee Salmon	K R	1	97	216	Y N				
Rainbow Trout	K R	7							

- Data has relationships
  - Fish kept with tag info
  - Fish kept without tag
  - Fish released

Client Suggested Revisions

- No preselected defaults for toggle switches
- Remove edit/view functionality for previously entered data

"Final" Technology Choices

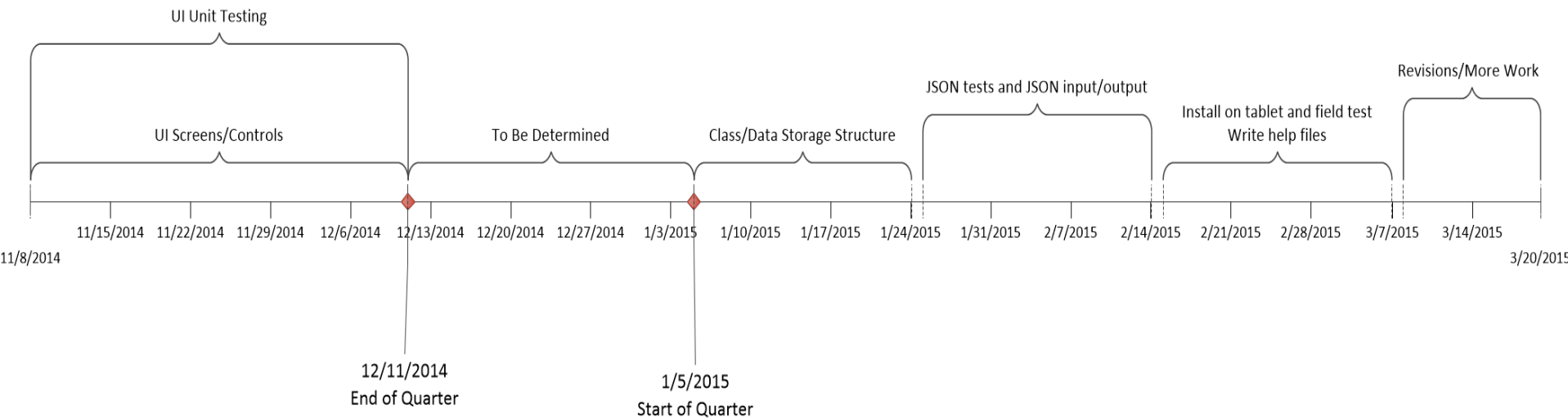- C# Winforms
  - Mix of built in and custom controls
  - Utilize Windows on screen keyboard
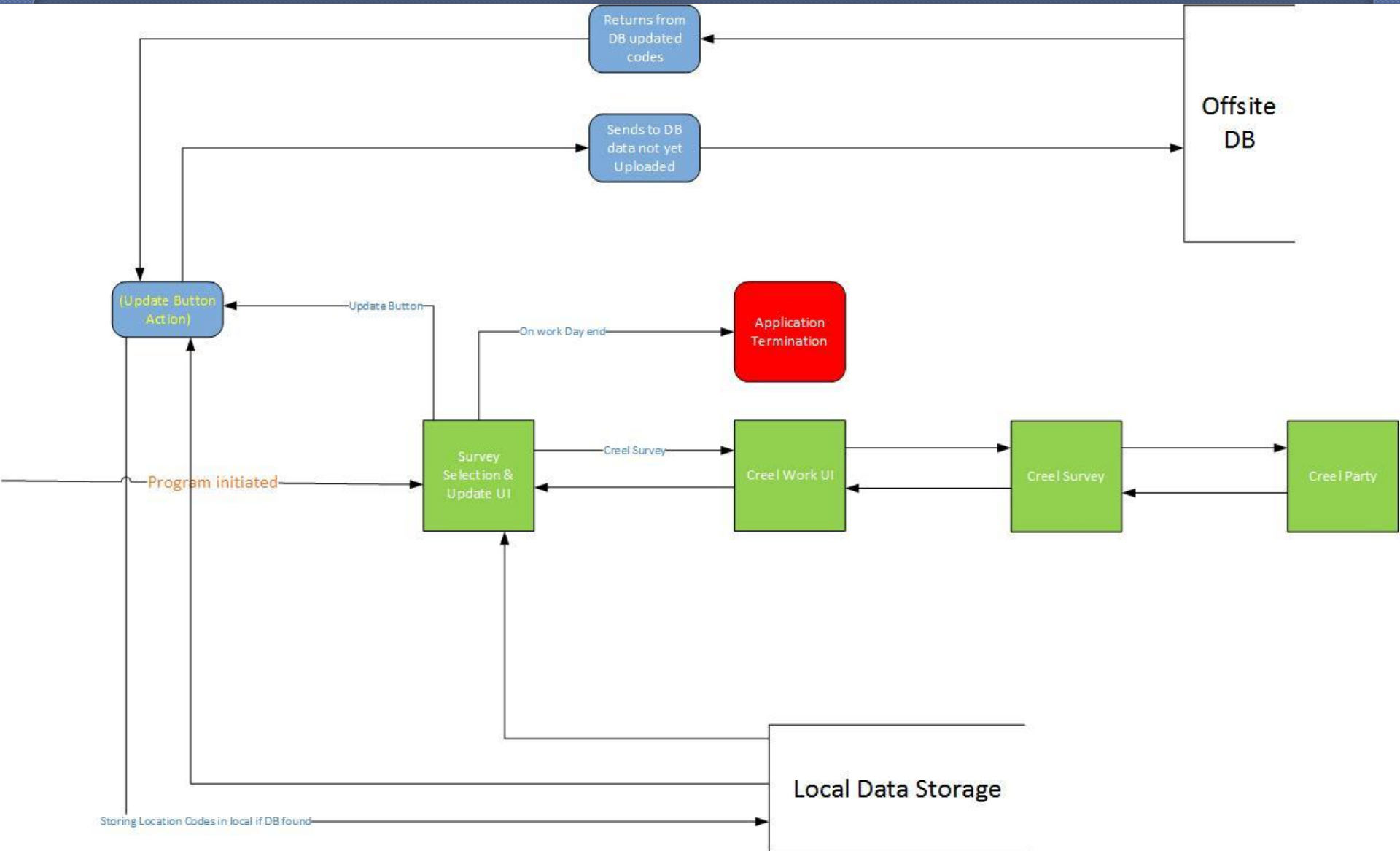- JSON to communicate with database
- Store survey data as log files

Timeline

UI Unit Testing

UI Screens/Controls

To Be Determined

Class/Data Storage Structure

JSON tests and JSON input/output

Install on tablet and field test
Write help files

Revisions/More Work

11/8/2014
11/15/2014 11/22/2014 11/29/2014 12/6/2014 12/13/2014 12/20/2014 12/27/2014 1/3/2015 1/10/2015 1/17/2015 1/24/2015 1/31/2015 2/7/2015 2/14/2015 2/21/2015 2/28/2015 3/7/2015 3/14/2015
3/20/2015

12/11/2014
End of Quarter

1/5/2015
Start of Quarter

Current Diagrams

CreelWork

List<CreelSurvey>
- -
TimeSpan startTime
TimeSpan endTime
String initials
String surveyType
String section
String dayComments

CreelSurvey

List<CreelParty>
- -
TimeSpan startTime
TimeSpan endTime
int location

CreelParty

List<CreelFish>
List<CreelAngler>
- -
Int partySize
Int numberAnglers
TimeSpan startTime
TimeSpan endTime
Boolean completeTrip
int targetSpecies1
int targetSpecies2

CreelFish

int speciesCaught
Boolean released
int total
int length
Int weight
int mark
int origin
int finClip
String tagType
String tagNumber
String notes

CreelAngler

int anglerType
String zipCode

Unit Tests

Search

Run All | Run... ▾ | Playlist : All Tests ▾

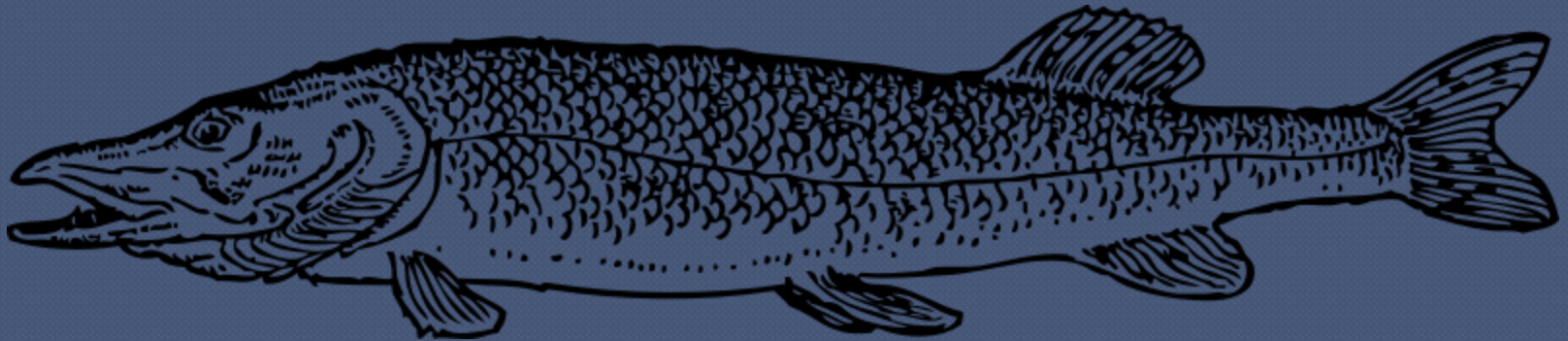|	
✓ CreelAngler_Incorrect_Angler_Type_Higher	< 1 ms
✓ CreelAngler_Incorrect_Angler_Type_Lower	< 1 ms
✓ CreelAngler_Incorrect_Zipcode_Higher	< 1 ms
✓ CreelAngler_Incorrect_Zipcode_Lower	< 1 ms
✓ CreelAngler_Succesful_Input	< 1 ms
✓ CreelFish_Correct_KeptFish	< 1 ms
✓ CreelFish_Correct_ReleasedFish	< 1 ms
✓ CreelFish_Incorrect_FinClip_And_No_TagInfo	< 1 ms
✓ CreelFish_Incorrect_FinClip_Higher	< 1 ms
✓ CreelFish_Incorrect_FinClip_Lower	< 1 ms
✓ CreelFish_Incorrect_KeptFish	< 1 ms
✓ CreelFish_Incorrect_Mark_Higher	< 1 ms
✓ CreelFish_Incorrect_Mark_Lower	< 1 ms
✓ CreelFish_Incorrect_NoFinClip_And_TagInfo	< 1 ms
✓ CreelFish_Incorrect_NoMark_And_End	< 1 ms
✓ CreelFish_Incorrect_ReleasedFish	< 1 ms
✓ CreelFish_Incorrect_SpeciesCaught_Higher	< 1 ms
✓ CreelFish_Incorrect_SpeciesCaught_Lower	< 1 ms
✓ CreelFish_Incorrect_Total_Kept_Higher	< 1 ms
✓ CreelFish_Incorrect_Total_Kept_Lower	< 1 ms
✓ CreelFish_Incorrect_Total_Released_Lower	< 1 ms
✓ CreelParty_Incorret_AnglerNumber	< 1 ms
✓ CreelParty_Incorrect_TargetSpecies1_Higher	< 1 ms
✓ CreelParty_Incorrect_TargetSpecies1_Lower	< 1 ms
✓ CreelParty_Incorrect_TargetSpecies2_Higher	< 1 ms
✓ CreelParty_Incorrect_TargetSpecies2_Lower	< 1 ms
✓ CreelParty_Succesful_Input	< 1 ms
✓ CreelParty_Validate_EndTime	1 ms
✓ CreelSurvey_Succesful_Input	< 1 ms
✓ CreelSurvey_Validate_EndTime	4 ms

Summary

Last Test Run Passed (Tota

✓ 36 Tests Passed

User Interface

Your Inititals	Section	Route	Work Day Start	Work Day End
SMC	Upper	1	10:56:	End

Start New Location

Location Start Time

Location

Time At Location

16

Party Size	No. of Anglers	Start Time	End Time	Complete Trip	Target Species 1	Target Species 2
				Y N	Rainbow Trout	White Sturgeon

⊕ Fish

New Party

End Location

Where We Are Going

- Finish UI
- Code behind for UI
- JSON communication