

System Test Cases

1. **Performance Testing****: investigate the run-time performance within the context of an integrated system and how well and quickly does the system recover from faults
 - a. Street address confirmation using USPS API
 - b. Email address confirmation using JavaMail API
 - c. Test using JMeter
2. **Security Testing****: verify that protection mechanisms built into the system will protect from unauthorized access (hackers, disgruntled employees, fraudsters)
 - a. Test using Grabber tool
3. **Stress (Load) Testing****: place abnormal load on the system
 - a. Test using JMeter
4. **User Acceptance Testing**: verifies that the system works as required and validates that the correct functionality has been delivered
 - a. The following UAT cases are to be implemented

Test Case ID: TC_UI_1			Test Title: Verify Login with Valid Credentials			
Test Priority: High			Description: Test that logging into GGMS with a valid username and password combination authenticates User successfully and displays home page			
Module Name: GGMS Login			Pre-condition: User is not authenticated in GGMS			
Dependencies: Manager must register credentials in GGMS. Trainer must register credentials with assigned id in GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Visit /localhost:8080/		GGMS login page displayed	N/A	N/A	
2	Fill in username field	Username:joe.smith	Username is valid	N/A	N/A	
3	Fill in password field	Password: gymRAT3	Password is valid	N/A	N/A	
4	Click Login button		GGMS authenticates User. Home page displayed	N/A	N/A	
Post-condition: User was authenticated in GGMS						

Test Case ID: TC_UI_2	Test Title: Deny Login with Invalid Credentials
------------------------------	--

Test Priority: High			Description: Test that logging into GGMS with an invalid username and password combination does not authenticate User successfully and displays login page with error message			
Module Name: GGMS Login			Pre-condition: User is not authenticated in GGMS			
Dependencies: Manager must register credentials in GGMS. Trainer must register credentials with assigned id in GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Visit /localhost:8080/		GGMS login page displayed	N/A	N/A	
2	Fill in username field	Username: joe.smith	Username is valid	N/A	N/A	
3	Fill in password field	Password: badPass	Password is invalid	N/A	N/A	
4	Click Login button		GGMS does not authenticate User. Login page displayed with password error message	N/A	N/A	
5	Fill in username field	Username: joe.smith.bad	Username is invalid	N/A	N/A	
6	Fill in password field	Password: gymRAT3	Password is valid (for username joe.smith)	N/A	N/A	
7	Click Login button		GGMS does not authenticate User. Login page displayed with username error message	N/A	N/A	
Post-condition: User was not authenticated in GGMS						

Test Case ID: TC_UI_3			Test Title: Verify Logout			
Test Priority: High			Description: Test that logging out of GGMS unauthenticates User successfully and displays login page			
Module Name: GGMS Logout			Pre-condition: Manager/Trainer is authenticated in GGMS			
Dependencies: Manager/Trainer must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes

1	Visit /localhost:8080/		GGMS login page displayed	N/A	N/A	
2	Click Logout button		GGMS unauthenticates User. Home page displays	N/A	N/A	
Post-condition: User was unauthenticated in GGMS						

Test Case ID: TC_UI_4		Test Title: Verify New User Registration Part 1				
Test Priority: High		Description: Test that registering without an initial id as a new User in GGMS successfully creates and adds a new Manager instance to GGMS and displays home page				
Module Name: GGMS Register New User		Pre-condition: User is not registered in GGMS				
Dependencies: N/A						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Visit /localhost:8080 /		GGMS login page displayed	N/A	N/A	
2	Fill in username field	Username:don.ward	Username is valid	N/A	N/A	
3	Fill in password field	Password: gymCool9	Password is valid	N/A	N/A	
4	Click Register as New User (no id) button		GGMS displays confirmation that credentials are valid and User has been registered as a Manager in GGMS. Manager form displays.	N/A	N/A	
5	Fill in id field	Id: 001	Id is valid	N/A	N/A	Manager id must

						begin with '0'
6	Fill in name field	Name: Don	Name is valid	N/A	N/A	
7	Fill in last name field	Last name: Ward	Last name is valid	N/A	N/A	
8	Fill in address field	Address: street1=777 Main St, street2=Apt 77, city=Dover, state=RI, zip code=41190	Address is valid and verified by USPS API	N/A	N/A	
9	Fill in phone number field	Phone number: 3139998212	Phone number is 10 digit Integer and valid	N/A	N/A	
10	Fill in email field	Email: donward@email.com	Email is valid and verified by JavaMail API	N/A	N/A	
11	Fill in insurance field	Insurance: Aetna	Insurance is valid	N/A	N/A	
12	Click Submit Form button		GGMS displays confirmation that Manager was created and entered into GGMS.	N/A	N/A	
13	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Manager was registered as a new User in GGMS. Manager was created and added to GGMS						

Test Case ID: TC_UI_5	Test Title: Verify New User Registration Part 2
Test Priority: High	Description: Test that registering with an initial id as a new User in GGMS successfully adds login

			credentials to an existing Trainer instance in GGMS and displays home page			
Module Name: GGMS Register New User			Pre-condition: User is not registered in GGMS			
Dependencies: Trainer must be hired by Manager, i.e., Trainer must be created and added to GGMS by Manager.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Visit /localhost:8080/		GGMS login page displayed	N/A	N/A	
2	Fill in username field	Username: jerry.jones	Username is valid	N/A	N/A	
3	Fill in password field	Password: gymFun4	Password is valid	N/A	N/A	
4	Click Register as New User (have id) button		GGMS displays confirmation that credentials are valid and User has been registered as a Trainer in GGMS. Trainer form displays.	N/A	N/A	
5	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Trainer was registered as a new User in GGMS						

Test Case ID: TC_UI_6			Test Title: Verify Trainer Form Submission			
Test Priority: Med			Description: Test that, as a Manager authenticated in GGMS, completing a Trainer form creates and adds a new Trainer instance to GGMS			
Module Name: GGMS Hire Trainer			Pre-condition: Manager is authenticated in GGMS			
Dependencies: Manager must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Trainer form button		Trainer form displays	N/A	N/A	
2	Fill in id field	Id: 100	Id is valid			Customer id must

						begin with '1'
3	Fill in name field	Name: Bob	Name is valid	N/A	N/A	
4	Fill in last name field	Last name: Barker	Last name is valid	N/A	N/A	
5	Fill in address field	Address: street1=123 Main St, street2=Apt 12, city=Denver, state=CO, zip code=80222	Address is valid and verified by USPS API	N/A	N/A	
6	Fill in phone number field	Phone number: 1234567890	Phone number is 10 digit Integer and valid	N/A	N/A	
7	Fill in email field	Email: bobbarker@email.com	Email is valid and verified by JavaMail API	N/A	N/A	
8	Fill in insurance field	Insurance: Aetna	Insurance is valid	N/A	N/A	
9	Fill in work schedule field	Work Schedule: [Monday, 9:30 AM, 3:30 PM], [Tuesday, 10:00 AM, 4:30 PM]	Work schedule is valid	N/A	N/A	
10	Fill in qualifications fields	Qualifications: Personal trainer certified, CPR	Qualifications are valid	N/A	N/A	
11	Click Submit Form button		GGMS displays confirmation that Trainer was created and entered into GGMS.	N/A	N/A	
12	Click OK button on Confirmation message		Home page displays	N/A	N/A	

Post-condition: Trainer was created and entered into GGMS

Test Case ID: TC_UI_7			Test Title: Verify Trainer Form Modification			
Test Priority: Low			Description: Test that, as a Manager authenticated in GGMS, modifying a Trainer form updates an existing Trainer instance in GGMS			
Module Name: GGMS Modify Trainer			Pre-condition: Manager is authenticated in GGMS			
Dependencies: Manager must be logged into GGMS. Manager must perform search for Trainer to be modified.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Edit button on Trainer		Trainer form displays	N/A	N/A	
2	Change text in name field	Name: Tim	Name is valid	N/A	N/A	
3	Click Submit Form button		GGMS displays confirmation that Trainer was modified in GGMS.	N/A	N/A	
4	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Trainer was modified in GGMS						

Test Case ID: TC_UI_8		Test Title: Verify Customer Form Submission				
Test Priority: Med		Description: Test that, as a Manager authenticated in GGMS, completing a Customer form creates and adds a new Customer instance to GGMS				
Module Name: GGMS Register Customer		Pre-condition: Manager is authenticated in GGMS				
Dependencies: Manager must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Customer form button		Customer form displays	N/A	N/A	
2	Fill in id field	Id: 200	Id is valid			Customer id must begin with '2'

3	Fill in name field	Name: Bill	Name is valid	N/A	N/A	
4	Fill in last name field	Last name: Ford	Last name is valid	N/A	N/A	
5	Fill in address field	Address: street1=246 Main St, street2=Apt 24, city=Bryan, state=TX, zip code=77800	Address is valid and verified by USPS API	N/A	N/A	
6	Fill in phone number field	Phone number: 9876543210	Phone number is 10 digit Integer and valid	N/A	N/A	
7	Fill in email field	Email: billford@email.com	Email is valid and verified by JavaMail API	N/A	N/A	
8	Fill in insurance field	Insurance: Medicaid	Insurance is valid	N/A	N/A	
9	Select membership status	Status: ACTIVE	Status is valid	N/A	N/A	
10	Click Submit Form button		GGMS displays confirmation that Customer was created and entered into GGMS.	N/A	N/A	
11	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Customer was created and entered into GGMS						

Test Case ID: TC_UI_9	Test Title: Verify Customer Form Modification
Test Priority: Low	Description: Test that, as a Manager authenticated in GGMS, modifying a Customer form updates an existing Customer instance in GGMS

Module Name: GGMS Modify Customer			Pre-condition: Manager is authenticated in GGMS			
Dependencies: Manager must be logged into GGMS. Manager must perform search for Customer to be modified.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Edit button on Customer		Customer form displays	N/A	N/A	
2	Change text in name field	Name: Tim	Name is valid	N/A	N/A	
3	Click Submit Form button		GGMS displays confirmation that Trainer was modified in GGMS.	N/A	N/A	
4	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Customer was modified in GGMS						

Test Case ID: TC_UI_10			Test Title: Verify Equipment Form Submission			
Test Priority: Med			Description: Test that, as a Manager authenticated in GGMS, completing an Equipment form creates and adds a new Equipment instance to GGMS			
Module Name: GGMS Inventory Equipment			Pre-condition: Manager is authenticated in GGMS			
Dependencies: Manager must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Equipment form button		Equipment form displays	N/A	N/A	
2	Fill in name field	Name: dumbbell	Name is valid	N/A	N/A	
3	Fill in picture field	Picture: null	Picture is valid	N/A	N/A	
4	Fill in quantity field	Quantity: 3	Quantity is valid (non-negative)	N/A	N/A	
5	Click Submit Form button		GGMS displays confirmation that Equipment was created and	N/A	N/A	

			entered into the Inventory of GGMS.			
6	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Equipment was created and entered into the Inventory of GGMS						

Test Case ID: TC_UI_11			Test Title: Verify Equipment Form Modification			
Test Priority: Low			Description: Test that, as a Manager authenticated in GGMS, modifying a Equipment form updates an existing Equipment instance in GGMS			
Module Name: GGMS Modify Equipment			Pre-condition: Manager is authenticated in GGMS			
Dependencies: Manager must be logged into GGMS. Manager must perform search for Equipment to be modified.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Edit button on Equipment		Equipment form displays	N/A	N/A	
2	Change text in quantity field	Quantity: 8	Quantity is valid	N/A	N/A	
3	Click Submit Form button		GGMS displays confirmation that Equipment in the Inventory of GGMS was modified.	N/A	N/A	
4	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Equipment was modified in the Inventory of GGMS						

Test Case ID: TC_UI_12			Test Title: Verify Exercise Form Submission Part 1			
Test Priority: Med			Description: Test that, as a Trainer authenticated in GGMS, completing an Exercise form creates and adds a new Exercise instance to GGMS			
Module Name: GGMS Create Exercise			Pre-condition: Trainer is authenticated in GGMS			
Dependencies: Trainer must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes

1	Click Exercise form button		Exercise form displays	N/A	N/A	
2	Fill in name field	Name: dumbbell squats	Name is valid	N/A	N/A	
3	Fill in equipment field	Equipment: [dumbbell]	Equipment is valid	N/A	N/A	
4	Fill in duration field	Duration: 120 seconds	Duration is valid	N/A	N/A	
5	Click Submit Form button		GGMS displays confirmation that Exercise was created and entered into GGMS.	N/A	N/A	
6	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Exercise was created and entered into GGMS						

Test Case ID: TC_UI_13			Test Title: Verify Exercise Form Submission Part 2			
Test Priority: Med			Description: Test that, as a Trainer authenticated in GGMS, completing an Exercise form creates and adds a new Exercise instance to GGMS			
Module Name: GGMS Create Exercise			Pre-condition: Trainer is authenticated in GGMS			
Dependencies: Trainer must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Exercise form button		Exercise form displays	N/A	N/A	
2	Fill in name field	Name: dumbbell bench press	Name is valid	N/A	N/A	
3	Fill in equipment field	Equipment: [dumbbell]	Equipment is valid	N/A	N/A	
4	Fill in number of sets field	Number of Sets: 3	Number of Sets is valid	N/A	N/A	
5	Fill in repetitions per set field	Repetitions per Set: 8	Repetitions per Set is valid	N/A	N/A	

6	Click Submit Form button		GGMS displays confirmation that Exercise was created and entered into GGMS.	N/A	N/A	
7	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Exercise was created and entered into GGMS						

Test Case ID: TC_UI_14		Test Title: Verify Exercise Form Modification Part 1				
Test Priority: Low		Description: Test that, as a Trainer authenticated in GGMS, modifying an Exercise form updates an existing Exercise instance in GGMS				
Module Name: GGMS Modify Exercise		Pre-condition: Trainer is authenticated in GGMS				
Dependencies: Trainer must be logged into GGMS. Trainer must perform search for Exercise to be modified.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Edit button on Exercise		Exercise form displays	N/A	N/A	
2	Change text in duration field	Duration: 300 seconds	Duration is valid	N/A	N/A	
3	Click Submit Form button		GGMS displays confirmation that Exercise was modified in GGMS.	N/A	N/A	
4	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Exercise was modified in GGMS						

Test Case ID: TC_UI_15		Test Title: Verify Exercise Form Modification Part 2				
Test Priority: Low		Description: Test that, as a Trainer authenticated in GGMS, modifying an Exercise form updates an existing Exercise instance in GGMS				
Module Name: GGMS Modify Exercise		Pre-condition: Trainer is authenticated in GGMS				

Dependencies: Trainer must be logged into GGMS. Trainer must perform search for Exercise to be modified.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Edit button on Exercise		Exercise form displays	N/A	N/A	
2	Change number in number of sets field	Number of Sets: 5	Number of Sets is valid	N/A	N/A	
3	Click Submit Form button		GGMS displays confirmation that Exercise was modified in GGMS.	N/A	N/A	
4	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Exercise was modified in GGMS						

Test Case ID: TC_UI_16		Test Title: Verify Routine Form Submission				
Test Priority: Med		Description: Test that, as a Trainer authenticated in GGMS, completing a Routine form creates and adds a new Routine instance to GGMS				
Module Name: GGMS Create Routine		Pre-condition: Trainer is authenticated in GGMS				
Dependencies: Trainer must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Routine form button		Routine form displays	N/A	N/A	
2	Fill in name field	Name: dumbbell stuff	Name is valid	N/A	N/A	
3	Fill in exercises field	Exercises: [dumbbell squats], [dumbbell bench press]	Exercises are valid	N/A	N/A	
4	Click Submit Form button		GGMS displays confirmation that Routine was created	N/A	N/A	

			and entered into GGMS.			
5	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Routine was created and entered into GGMS						

Test Case ID: TC_UI_17			Test Title: Verify Routine Form Modification			
Test Priority: Low			Description: Test that, as a Trainer authenticated in GGMS, modifying an Routine form updates an existing Routine instance in GGMS			
Module Name: GGMS Modify Routine			Pre-condition: Trainer is authenticated in GGMS			
Dependencies: Trainer must be logged into GGMS. Trainer must perform search for Routine to be modified.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Edit button on Routine		Routine form displays	N/A	N/A	
2	Change exercise in exercises field	Exercises: [dumbbell squats]	Exercises are valid	N/A	N/A	
3	Click Submit Form button		GGMS displays confirmation that Routine was modified in GGMS.	N/A	N/A	
4	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Routine was modified in GGMS						

Test Case ID: TC_UI_18		Test Title: Verify Routine Assignment for Customer				
Test Priority: Med		Description: Test that, as a Trainer authenticated in GGMS, assigning Routine(s) to a Customer updates an existing Customer instance in GGMS				
Module Name: GGMS Assign Routine		Pre-condition: Trainer is authenticated in GGMS				
Dependencies: Trainer must be logged into GGMS. Trainer must perform search for Customer to be modified.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes

1	Click Edit button on Customer		Customer form displays	N/A	N/A	
2	Add routine to assigned routines field	Assigned Routines: [dumbbell stuff]	Assigned Routines are valid	N/A	N/A	
3	Click Submit Form button		GGMS displays confirmation that Customer was assigned a Routine(s) and modified in GGMS.	N/A	N/A	
4	Click OK button on Confirmation message		Home page displays	N/A	N/A	
Post-condition: Customer was assigned Routine(s) and modified in GGMS						

Test Case ID: TC_UI_19		Test Title: Verify Search Form Submission				
Test Priority: High		Description: Test that, as a Manager/Trainer authenticated in GGMS, completing a Search form returns the result found in GGMS with View and Edit buttons				
Module Name: GGMS Search		Pre-condition: Manager/Trainer is authenticated in GGMS				
Dependencies: Manager/Trainer must be logged into GGMS.						
Step	Test Steps	Test Data	Expected Result	Actual Result	Status	Notes
1	Click Search form button		Search form displays	N/A	N/A	
2	Select option in Filter dropdown list	- Filter dropdown option (as Manager) : Customer - Filter dropdown option (as Trainer) : Exercise	Filter dropdown option is valid	N/A	N/A	
3	Fill in name field	- Name (as Manager) : Bill Ford	Name is valid	N/A	N/A	

		- Name (as Trainer): dumbbell squats				
4	Click Submit Form button		GGMS displays result with View and Edit button.	N/A	N/A	
Post-condition: Search was performed in GGMS and a result was returned						

**** Optional to implement but still plan to unless time does not permit**

References

1. <http://rgaucher.info/beta/grabber/>
2. <https://github.com/neuroo/grabber>
3. <http://jmeter.apache.org/>
4. <http://www.softwaretestinghelp.com/what-is-user-acceptance-testing-uat/>
5. <http://www.softwaretestinghelp.com/test-case-template-examples/>