



# Software Test Plan

Project name: Bear Banking

Purpose of project: To create a fully functional online banking system

## Features To Be Tested/Not To Be Tested

- Database – The database will be the primary item that is going to be tested. It will require in depth testing to ensure not only the performance of the database but also the accuracy of the database.
- Site – The site will have a substantial amount of UAT to ensure that it is easy and intuitive to use. There will also be some performance testing on the site to ensure that it can handle the projected number of customers.
- Authentication Server – The authentication server will need to be tested to ensure the security of the server and ensure that there are no back doors into the system.

## Testing Pass/Fail Criteria

- Database endurance test – The database must be able to handle 500 concurrent users for a period of 48 hours without having any signs of decreased performance.
- Database Speed Test – The database must be able to return a query withing 0.5 seconds repeatably.
- Site speed test – The site should be able to load a page within 0.75 seconds including getting the data from the database.
- Database Stress test – The database will be loaded with 1000 requests at once if the database is able to complete all requests within 0.5 seconds then the number of requests will increase by 500 and the test will be repeated. This will continue until the time to complete requests increases above 0.5 seconds.
- Site stress test – The site will be subjected to 1000 simulated users accessing the site to see if the site crashes or slows down. If the site handles it then the number of users are increased by 200 and repeated until the site crashes or starts to slow down.
- Fault injection test – The database will be sent false information that is designed to break the database the amount of information will be recorded the database must be able to handle small amounts of false data without causing a complete corruption.
- Reliability testing – The database will be supplied with 100 accounts with the same information and the test will make sure that the database returns the same results from each account.
- UAT – A group of at least 50 users will use the site for a period of 2 weeks and provide full feedback on the site

## Testing Approach

Almost all tests will be done through software. The test will be written with TeamCity. TeamCity allows you to write test scripts for software to test almost any aspect of the software it works great with databases and websites allowing us to easily do the testing.

## Testing Cases

- An account will have a deposit of \$300 made to it followed by a withdraw of \$300
- An account will invest \$20 then the investment will be sold
- A tax report will be generated off an account that has had numerous transactions
- A Lost card report will be completed
- A debit transaction of \$3 will be made
- A loan request will be submitted then approved then payed off
- A recent transaction report will be requested
- An in the middle attack will be attempted
- Multiple deposits from different sources will be done at the same time
- A withdraw of \$300 will be attempted on an account with only \$100 in it
- Multiple simultaneous withdraws equaling \$300 total will be attempted on an account with only \$100

## Testing Materials (Hardware/Software Requirements)

TeamCity will be used for the automated testing a computer will be needed to run it on. TeamCity has a cloud based version that simulates multiple clients connecting so there will be no need for additional hardware beyond that.

## Testing Schedule

Testing Activity	Duration	Resource	Comments
Test Plan Creation	5 days	Test Manager	
Test Specification Creation	10 days	Test Leads	
Test Specification Team Review	5 days	Project Team	
Component Testing	20 days	Component	

Testing Activity	Duration	Resource	Comments
		Testers	
Integration Testing	20 days	Component and System Testers	
System Testing	15 days	System Testers	
Performance Testing	5 days	System Testers	
Use Case Validation	10 days	System Testers	
Alpha Testing	5 days	Product Managers/Analysts	
Beta Testing/Pilot Program	20 days	Pilot Program End-Users	

## Risks and Contingencies Matrix

Risk	Probability	Risk Type	Owner	Contingencies/Mitigation Approach
Do not have enough skilled workers to test components as they are ready for testing.	25%	Project Resources	Testing Manager	Testing schedule will be adjusted based on available resources.
Testing team member turnover	10%	Project Resources	Testing Manager	Adjust testing schedules. Make sure testing team members are cross-trained on testing techniques in case a team member leaves the organization.