UNIVERSITY OF MARYLAND UNIVERSITY COLLEGE (UMUC)

USER GUIDE AND TEST CASE DEVELOPMENT PLAN

EMPLOYEE'S TIME MANAGEMENT SYSTEM VERSION 1.0

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Revision History

Date	Version	Description	Author	Signature
03/31/2017	1.0	Document Creation, and drafted initial outline, and combining all teams collaboration sections	Wendy Velasquez Ebanks	WCVE

Document Approval

Name	Date	Version Signed	Signature

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1. Introduction

The present document contains the Software Test Specification and user guide for the **Employee's Time Management System.**

1.1 Purpose

The purpose of the Software Test Specification is to document and track the necessary information required to effectively define the approach used in the testing of the Employee Time Management System. The intended audiences for this document are the project manager, project and testing team; by providing a testing framework to perform black box (UX component requirements) and white box (algorithmic and logical) tests against the software created and validate design and all remaining requirements previously specified.

1.2 Scope

The testing documentation presented is scoped to the specific list of test cases in specific areas of the architectural context diagram, the software components and use cases are associated with each test case presented. The test specification includes a list of the features to be tested for each of the use case, the description each test case needed to fully assess the use case, and the test procedures, or steps, necessary to execute each of the test cases.

The Employee Time Management system application is intended to provide the following major functions:

a) User authentication and verification.
b) Employee's worked hours recording, verification and confirmation.
c) Employee's timesheet submission.
d) Supervisor's Timesheet management and timesheet approvals.
e) Timesheet Report generation.

1.3 Outline

The outline below presents the items found on each test case

a) Test case specification identifier

b) Test items

c) Input specifications

d) Output specifications

1.3.1 Test Case Specification Identifier

The case specification identifier below is for the first version of the software test description.

ETMS-SR-01 April 20, 2017

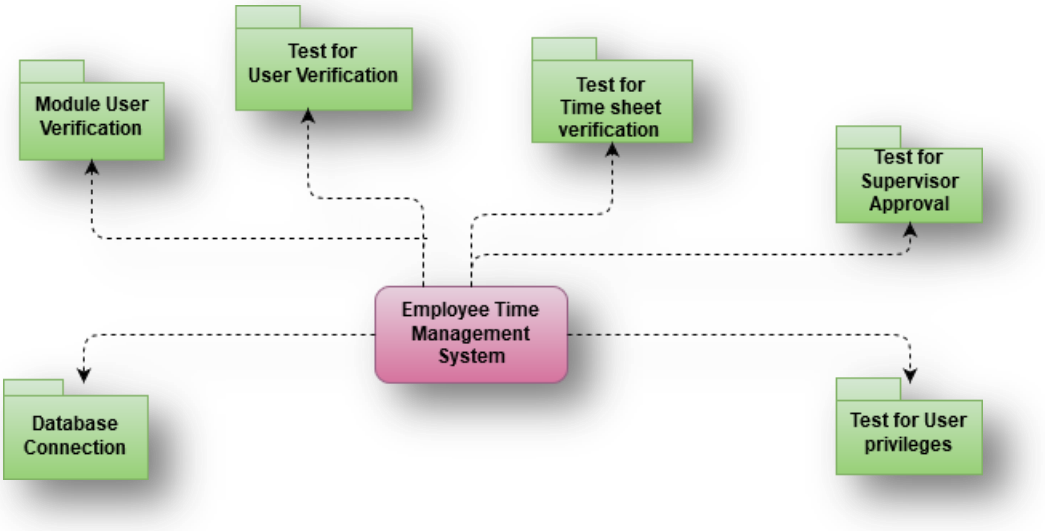
1.3.2 Features to be tested

The following is a list of features that will be tested:

Test Case ID	Feature to be test
ETMS-IR-01, ETMS-SR-01, ETMS-SR-05, ETMS-SCR -03	Ability to login with valid username and password
ETMS-IR-02, ETMS-PR-01	Validation of preset-schedule on the employee interface
ETMS-IR-03	Data integrity validation
ETMS-IR-04	Validation of all required data fields
ETMS-OR-01, ETMS-OR-03	Ability to generate accurate soft-reports to the end user
ETMS-OR-02	Ability to display a confirmation of hours currently entered
ETMS-OR-04	Ability to display hours worked per user, per time period
ETMS-OR-05	Ability to retrieve historical data and display it
ETMS-SR-02, ETMS-SR-04	Assess the security of system connection
ETMS-SR-03	Ability to verify user system privileges
ETMS-SR-06, ETMS-SCR -01,	Functionality of the system will be displayed based on user privileges

ETMS-SCR -02	
ETMS-SCR -04	Ensuring that error file is generated with the correct formatting.
ETMS-PR -02	Ensure replication is done successfully
ETMS-PR -03	Ensure portability of the system in any device

Only the modules shown in the diagram below are being evaluated:



1.3.3 Features not to be tested

It is assumed that every time the system is being enhanced or upgrade there is a process in place in order to make those changes effectively in a way that works with the current structure of the system. It is also assumed that all items processed in the results as part of the reports will be correctly placed. Therefore, the module that relates to reports will not be fully tested in this version. In addition, this section refers to the functionality and validation of reports generated.

1.4 Approach

The Employee Time Management System will test and verify that user requirements are met and that the software is functioning properly by

developing test cases against the system requirements specification and the system design specification. Tests will be conducted by the development team to ensure functions are running properly after the entire system has been deployed in the test environment. The tests validate that the Employee Time Management System is handling data properly and functioning as expected.

1.5 Test Environment

1.5.1 Hardware

A modern computer with a RAM memory of at least 1GB or greater; the end user terminal needs no storage, and the server needs a minimum of 10GB. The computer must have the necessary items for the user to interact with the system such as Keyboard, mouse, and a graphics card that provide good resolution to obtain better results during the testing phase.

1.5.2 Software

Functional integration testing will be conducted in an environment designed to simulate the actual environment in which the software will be deployed. To simulate this environment, the completed software package will be installed on a virtual server. The virtual server will be built to mimic the specifications of the server at the client's facility. The tests will be conducted on a workstation, which that has at least windows 8 or later version and using three popular browsers; Internet Explorer, Firefox, and Chrome. Structural unit testing will be conducted in the Eclipse IDE development environment by the developers using JUnit tests. Web pages will be validated through the HTML and CSS validator from the W3 Open Source. Driver modules will be written, where necessary, to test specific unit functionality.

1.5.3 Communications

The communications for the system are discussed on section 9.1.4 of the requirements specifications.

1.5.4 Tools

The tools needed for the system are discussed on section 7.2 of the requirements specifications.

1.5.5 Data

Testers of the ETMS should be prepared with the following data in order to obtain successful completion of use test cases:

1. Employee data basic information
   a) Test names (first, last)
   b) Tests Addresses (Street, State, and zip code)
   c) Dummy phone numbers, SSN, emails
2. Data ranges for working hours
   a) Test work schedules shifts (morning, afternoon, night, flexible, max-flex, regular)

1.6. Test Identification

Test Case ID: ETMS-IR-01, ETMS-SR-01, ETMS-SR-05, ETMS-SCR -03

1. This is an authentication test that will verify the ability of a customer to login with a valid username and password.
2. This test will emulate a standard user attempting to login to the MySQL server utilizing the web front-end of ETMS.
3. This test will emulate a user changing their password through the ETMS front-end.
4. This test will emulate a user without access attempt to sign on

Test Case ID: ETMS-IR-02, ETMS-PR-01

1. This test will validate the existence of a preset-schedule on the employee interface
2. This test will emulate a supervisor setting the shift schedule for an existing subordinate user

Test Case ID: ETMS-IR-03

1. This test validates the consistency and integrity of the data.

Test Case ID: ETMS-IR-04

1. This test ensures that all required fields are filled and validated, in order to avoid SQL injection.

Test Case ID: ETMS-OR-01, ETMS-OR-03

1. This test will retrieve a user's report and display it, ensuring that the data presented is correct, and for the authenticated user.

2. This test verifies that the super user role is able to manage the regular user's actual Time marked up against the preset-schedule report.

Test Case ID: ETMS-OR-02

1. This test emulates a user clocking out for the day at key points in the pay period.

Test Case ID: ETMS-OR-05

1. This test case is to ensure the system's ability to generate a report of a historical pay period.

Test Case ID: ETMS-SR-02, ETMS-SR-04

1. This test case ensures that all client and server communications are encrypted using Transport Security Layer (TSL) to protect personally identifiable information (PII) and are using public-key cryptography to authenticate the connection through the use of certificates.
2. This test assesses the level of security in the connection to the system.

Test Case ID: ETMS-SR-03

1. This test case verifies that users have privilege levels based on their credentials.

Test Case ID: ETMS-SR-06, ETMS-SCR -01, ETMS-SCR -02

1. This test verifies that the principle of least privilege through the access granted and being followed on different privilege levels set in the database (user, supervisor, and administrator).
2. This test determines that a user is only able to access the system if their credentials have already been added to the system.
3. This test validates that a user has access to features of the system based on their credentials and role (user, supervisor, and administrator).

Test Case ID: ETMS-SCR -04

1. This test validates that an error log is created when the program encounters an error.

Test Case ID: ETMS-PR -02

1. This test validates that the database is able to be copied and replicated generating a confirmation report.

Test Case ID: ETMS-PR -03

1. This test case validates that the system is able to be run portably on multiple devices as well as browser versions and configurations.

1.7. Pass/fail criteria

The system must pass the criteria specific in each test case to pass testing. Any deficiencies noted in tested will be addressed by the development team. Once all identified deficiencies have been remedied, failed test cases will be repeated until all test cases are passed successfully.

2. Architectural Context Diagram Mapping

2.1 User interface

This section is specifically for those who will interact with the Employee Time management system (users, supervisors, and administrators). They all will be able to use the system through a graphical user interface (GUI); access to the GUI does not require any external interface other than a keyboard and mouse.

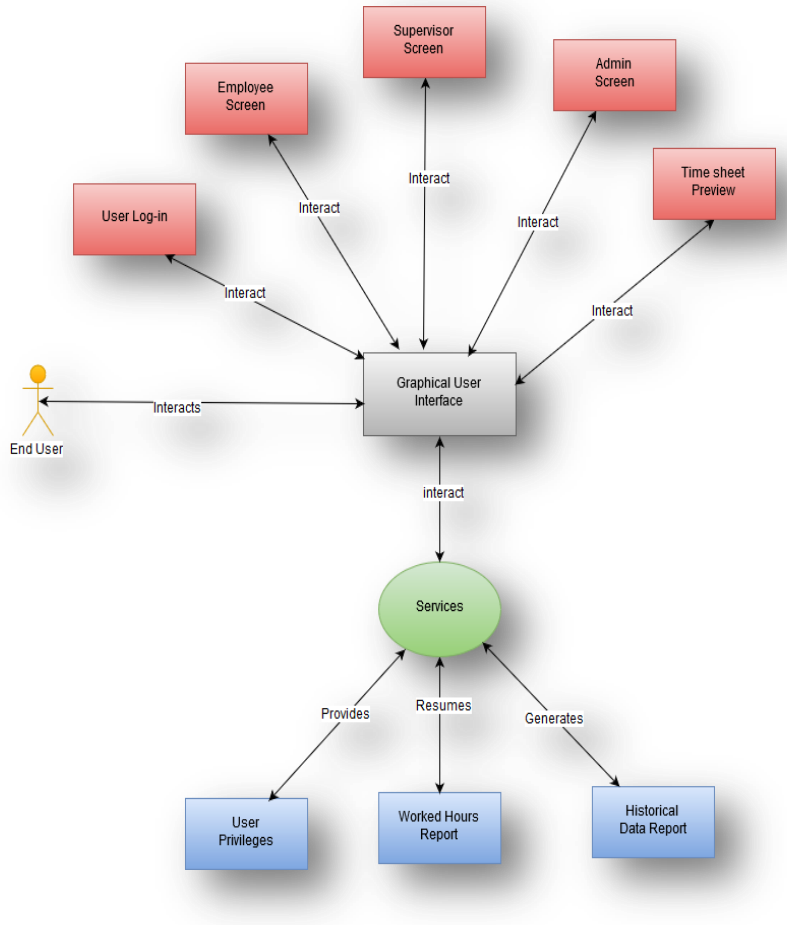


FIGURE 1 ARCHITECTURAL CONTEXT DIAGRAM – USER INTERFACE

2.2 Services

This section is intended to frame the logic of the processes that the ETMS will need to conduct; particularly, where domain objects are identified, such as Punching-in and Punching-out in order to record

the hours that an employee works. The service module provides output to the graphical user interface, and input from the graphical user interface is used to manage domain objects where appropriate.

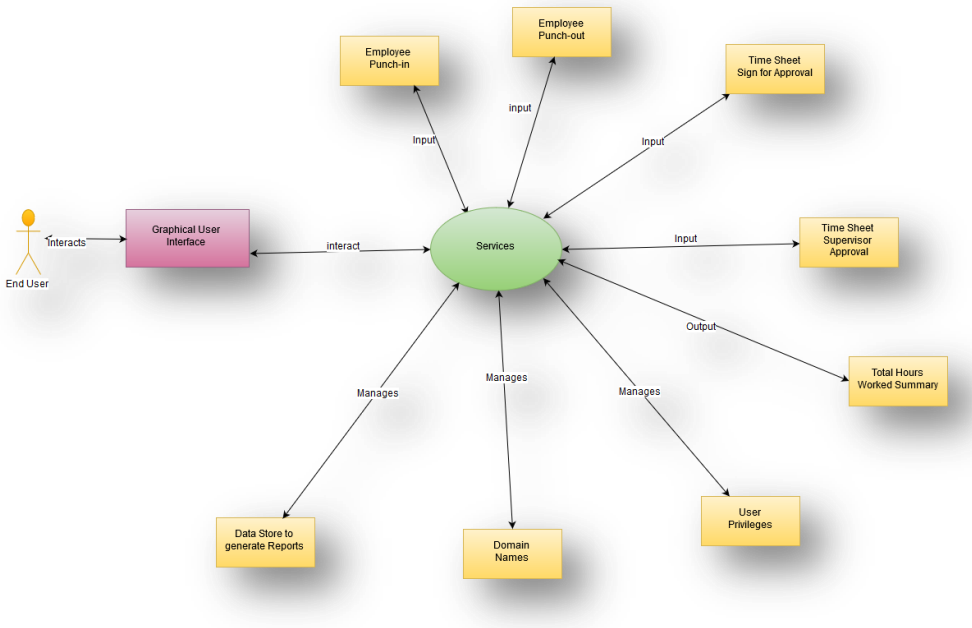


FIGURE 2 ARCHITECTURAL CONTEXT DIAGRAM - SERVICES

2.3 Domain Objects

The model below covers the entities identified that will hold key data to perform a function in the ETMS, and they are referred as domain objects.

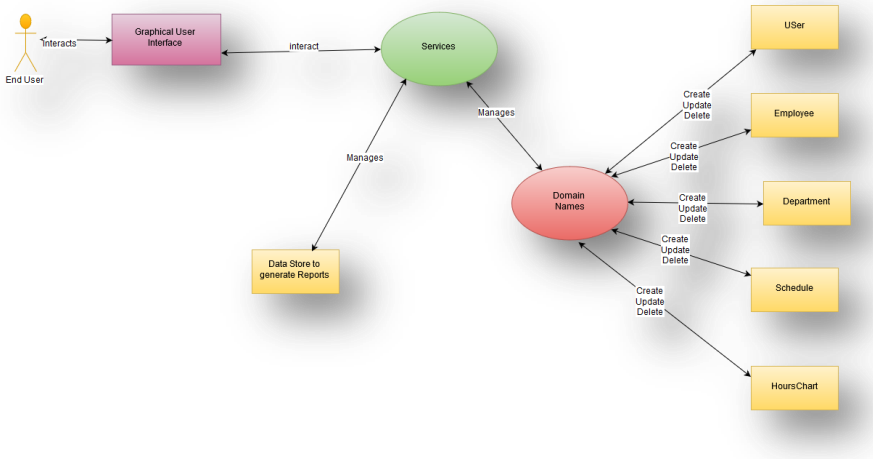


FIGURE 3 ARCHITECTURAL CONTEXT DIAGRAM - DOMAIN OBJECTS

3. References

[1] IEEE Standard 1233-98: Guide for Developing System Requirements Specification

[2] IEEE Software Engineering Standards Committee, "IEEE Std 829 - 1998, IEEE Standard for Software Test Documentation", September 16, 1998

[3] IEEE Standard 1058-1998: Standard for Software Project Management Plans

[4] R. Darnall and J. Preston, Project management from simple to complex, 1st ed. The Saylor Academy, 2010.

[5] D. Levy, "Use Case Examples -- Effective Samples and Tips", Gatherspace.com, 2014. [Online]. Available: http://www.gatherspace.com/static/use_case_example.html

4. Traceability Matrix

The traceability matrix provides a linkage between the initial software requirements (SRS) and software Development Design (SDD) and the System Tests Specifications (STS) with use cases defined

Category	Use Case ID	Req. ID	Test Case ID	Requirement Description	Test Case Description	Pass/Fail
UI	**SRS 9.2.1-1**	IR-1	ETMS-IR-01	The user shall be authenticated by inputting its credentials when log-in to the system.	Validate that user is authenticated when logging the system	
UI	**SRS 9.2.1-2**	IR-2	ETMS-IR-02	The user shall be able to input his/her hours according to the schedule previously set and submit them for review.	Validate that the user inputs his/her hours and submit his/her timesheet	

UI	**SRS 9.2.1-3**	IR-3	ETMS-IR-03	User data shall be validated when entered in order to avoid duplications and reinforce integrity.	evaluates that user data is validated to maintain DB integrity
UI	**SRS 9.2.1-4**	IR-4	ETMS-IR-04	The system shall request the necessary information from the user in order to generate historical and current reports for the user.	Assess completeness of required user data in the DB.
UI	**SRS 9.2.2 – 1**	OR-1	ETMS-OR-01	The System shall be able to generate soft and copy reports to the user.	Assess that System provides expected overview of Hours worked.
UI	**SRS 9.2.2-2**	OR-2	ETMS-OR-02	The system shall be able to provide a confirmation of work hour's submission.	Evaluates that a confirmation screen is presented after submission.
UI	**SRS 9.2.2-3**	OR-3	ETMS-OR-03	The system shall be able to generate a report based on current hours marked, and remaining hours to mark.	Asses report formatting is accurate and presents expected information on Hours worked and remaining.
UI	**SRS 9.2.2-4**	OR-4	ETMS-OR-04	The system shall provide a summary of hours worked by day and throughout the week.	Tests generation of summary report on hours worked

UI	**SRS 9.2.2-5**	OR-5	ETMS-OR-05	The system shall be able to retrieve historical data from the user for up to two years and provide it in a form of report.	Tests retrieval of stored information on previous submissions.
Services	**SRS 9.3.1-1**	SR-1	ETMS-SR-01	The system shall be able to authenticate a user to the database, verifying the account exists and is active.	Validates that a user is able to login using valid credentials only.
Services	**SRS 9.3.1-2**	SR-2	ETMS-SR-02	The system shall secure all connections between client and server using Transport Layer Security (TLS), and certificate verification.	Validates a connection will only occur if TLS has been properly set up on both the client and server.
Services	**SRS 9.3.1-3**	SR-3	ETMS-SR-03	The system shall allow users to be assigned different job roles which have different privilege levels.	Validates that a user is assigned to a specific job role.
Services	**SRS 9.3.1-5**	SR-5	ETMS-SR-05	The system shall force all passwords to follow a strict and secure password policy.	Validates that a user can only create a password that follows the password policy.
Services	**SRS 9.3.1-6**	SR-6	ETMS-SR-06	The system shall assure a specific privilege level can only access data required for the job role.	Validates that a user is only able to access data related to their job role.

Services	**SRS 9.3.2-1**	SCR-1	ETMS-SCR-01	A user shall be added into System's log in order to use the system.	Validates that a user is only able to access the system if they have been added
Services	**SRS 9.3.2-2**	SCR-2	ETMS-SCR-02	Accessibility shall be granted based on the user's role.	Validate that a user has access to certain features based on their role
Services	**SRS 9.3.2-3**	SCR-3	ETMS-SCR-03	The system shall restrict access to the server to only hosts that require actual access.	Validate that server access is for users who have been added
Services	**SRS 9.3.2-4**	SCR-4	ETMS-SCR-04	The system shall create an error log file that includes the error type, description, and time it happened.	Validate that an error log is created when the program encounters an error
Services	**SRS 9.3.3-1**	PR-1	ETMS-PR-01	The system shall provide options to super-user in order to set flexible shifts to the user.	Validate that the super-user is able to set shifts for the users
Services	**SRS 9.3.3-2**	PR-2	ETMS-PR-02	The system shall provide for replication of the database.	Validate that database is able to be copied and stored
Services	**SRS 9.3.3-3**	PR-3	ETMS-PR - 03	The system shall be able to provide portability due to its design and web interface.	Validate that the system is capable of being run on various web browsers

5. Test Case Specifications

The test cases provided cover the main functionalities of the Employee time Management System. These tests provide a set of steps that need to be taken logically (White Box) and through design choices (Black Box). All test cases presented have been match with a specific requirement in order to identify missing items in functionality.

5.1 User Interface Test Cases

This set of test cases is intended to verify that the Employee Time Management system's user interface is user friendly.

5.1.1 Specification ID: ETMS-IR-01

Objective: The objective of this test case is to validate that the user will be authenticated when inputting its credentials when log-in to the system.

Test Items: This test will emulate users attempting to sign on to the system

Input Specifications

1. Click in the Username textbox
2. Type in your username
3. Click in the Password textbox
4. Type in your password
5. Click on the Sign in button or press enter after username and password have been inputted.

Output Specifications

1. The Cursor will blink in the Username textbox
2. The username will appear as the user types it
3. The Cursor will blink in the Password textbox
4. Asterisks or dots will appear as the user types to hide the password
5. The button will depress and the user timesheet page will load if the credentials provided were correct, the account exists, and the account is not locked. If the credentials failed an Error message will be displayed to the user specifying bad credentials or a locked account.

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first.

Inter-case Dependencies

None

5.1.2 Specification ID: ETMS-IR-02

Objective: The objective of this test case is to validate that user shall be able to input his/her hours per the schedule previously set and submit them for review.

Test Items: This test will emulate users attempting to enter and submit their timesheet

Input Specifications

1. Insure user of type Employee is logged on
2. User will click on link that says “My Time”
3. On the time sheet page user will click “Submit”
4. Status of the timesheet will be changed from “Not Submitted” to “In Review”
5. User will be unable to edit the timesheet

Output Specifications

1. In the My Time page, the user will see a list of dates corresponding to the current 2 week pay period
2. These dates will be filled in by default to the shift schedule set for the employee (8 hours/ 9 hours/ etc)

3. These dates can be further edited to reflect changes to the users normal schedule

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first.

Inter-case Dependencies

None

5.1.3 Specification ID: ETMS-IR-03

Objective: The objective of this test case is to validate that user data will be validated when entered to avoid duplications and reinforce integrity.

Test Items: This test will emulate users attempting to enter incorrect information

Input Specifications

1. Insure user of type Employee is logged on
2. User will click on link that says “My Time”
3. Set the hours worked for one of the days ‘0:00’
4. Click “Submit”

Output Specifications

1. Upon clicking submit a pop-up will appear on the users screen

2. The popup will note "Incorrect time worked entered for date [mm-dd]. Please correct and resubmit"
3. Note that the status of the timesheet has not changed and is still "Not-Submitted"

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first.

Inter-case Dependencies

None

5.1.4 Specification ID: ETMS-IR-04

Objective: The objective of this test case is to validate that system will request the necessary information from the user to generate historical and current reports for the user.

Test Items: This test will emulate users attempting to enter incorrect information

Input Specifications

1. Insure user of type Employee is logged on
2. User will click on link that "Generate Report"
3. User will select appropriate timesheet from the list
4. Click "Generate"

Output Specifications

1. Upon clicking Generate Report, the user will be presented with a list of all historical and current timesheets
2. Clicking the timesheet from the list will output a document

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first.

Inter-case Dependencies

None

5.1.5 Specification ID: EMS-OR-01

Objective: The objective of this test case is to ensure that the user requirements are met; when a user interacts with an interface item that shall generate a report, a report with the authenticated user's requested data is displayed in an easy-to-read and complete format.

Test Items: This test will request each user-requestable, deliverable report, and display them, ensuring that the data presented is correct, and for the authenticated user. In the case of a super user more reports will be available, but the testing criteria will remain the same.

Input Specifications

1. User logs in utilizing the process set forth in SR-01
2. User selects the reports tab
3. User chooses each available report in sequence.

4. After all reports are generated and reviewed, user logs out using the "logout" button

Output Specifications

1. User is presented with the landing page after successful login
2. User is presented with a list of reports available, depending on user type.
3. User is presented each requested report, with data formatted correctly.
4. User is presented logoff message.

Environmental Needs

1. Working computer with network access
2. Operating System compatible with the ETMS
3. Compatible web browser
4. Mouse, Keyboard, and Monitor
5. Human tester with knowledge of correct output data formats.

Special Procedural Requirements

In the case of a super user the reports available will be for both the super user, and for all of the subordinate users. Test case will cover whether correct report types for user types are available.

Inter-case Dependencies

Use case test depends on successful completion of SR-01, SR-03 and SRS 9.1.1.

5.1.6 Specification ID: EMS-OR-02

The system shall be able to provide a confirmation of work hours submission.

Objective: The objective of this test case is to ensure successful notification of the user in the expected contextual area of the number of hours worked so far in the pay period.

Test Items: This test will emulate a user clocking out for the day at key points in the pay period. The system shall be edited during testing to place the user at

points throughout the period in order to ensure accurate tracking and display of hours worked.

Input Specifications: The user is demonstrated to clock in and/or out.

Output Specifications: The amount of time (numbers of hours, minutes) worked shall display upon the action of clocking in/out

Environmental Needs: Refer to EMTS-OR-01 for environmental constraints on this test.

Special Procedural Requirements: None listed

Inter-case Dependencies: None listed

5.1.7 Specification ID: EMS-OR-03

The system shall be able to generate a report based on current hours marked, and remaining hours to mark.

Objective: The objective of this test case is to verify that the super user role is able to manage the regular user's actual punches vs. schedule report.

Test Items: In this test a super user will audit a regular user using the schedule.

Input Specifications:

1. The login process is completed as a super user.
2. The reports tab is selected.
3. The 'scheduled vs. actual' button is selected.

Output Specifications:

1. The super user is logged into the supervisory interface.
2. All reports available to the user are displayed.
3. The report is displayed showing all subordinate user's punch's accuracy.

Environmental Needs: Refer to EMTS-OR-01 for environmental constraints on this test.

Special Procedural Requirements: None listed

Inter-case Dependencies: None listed

5.1.8 Specification ID: EMS-OR-04

The system shall provide a report of all hours worked per user per time period.

Objective: The objective of this test case is to demonstrate the system's capability of producing the all hours per user report

Test Items: This test will assure the system's capacity to generate the report of all hours worked for all users. In this test a super user shall audit a regular user.

Input Specifications:

1. The login process is completed as a super user.
2. The reports tab is selected.
3. The 'scheduled vs. actual' button is selected.

Output Specifications:

1. The super user is logged into the supervisory interface.
2. All reports available to the user are displayed.
3. The report is displayed showing all subordinate user's hours thus far in the pay period.

Environmental Needs: Refer to EMTS-OR-01 for environmental constraints on this test.

Special Procedural Requirements: None listed

Inter-case Dependencies: None listed

5.1.9 Specification ID: EMS-OR-05

The system shall be able to retrieve historical data from the user for up to two years and provide it in a form of report.

Objective: The objective of this test case is to ensure the system's ability to generate a report of a historical pay period.

Test Items: This test shall be performed as a super user.

Input Specifications:

1. The login process is completed as a super user.
2. The reports tab is selected.

3. The 'scheduled vs. actual' button is selected.
4. A pay period end date is selected.

Output Specifications:

1. The super user is logged into the supervisory interface.
2. All reports available to the user are displayed.
3. The report is displayed showing all subordinate user's time sheets for the selected time period.

Environmental Needs: Refer to EMTS-OR-01 for environmental constraints on this test.

Special Procedural Requirements: None listed

Inter-case Dependencies: None listed

5.2 Service Test Cases

This set of test cases is designed to test the programming interface of the ETMS and it can be done through automated testing or by user testing.

5.2.1 Specification ID: ETMS-SR-01

Objective: The objective of this test case is to authenticate a user to the MySQL database by verifying if their account exists on the server.

Test Items: This test will emulate a standard user attempting to login to the MySQL server utilizing the web front-end of ETMS.

Input Specifications

1. Click in the Username textbox
2. Type in your username
3. Click in the Password textbox
4. Type in your password
5. Click on the Sign in button or press enter after username and password have been inputted.

Output Specifications

1. The Cursor will blink in the Username textbox
2. The username will appear as the user types it

3. The Cursor will blink in the Password textbox
4. Asterisks or dots will appear as the user types to hide the password
5. The button will depress and the user timesheet page will load if the credentials provided were correct, the account exists, and the account is not locked. If the credentials failed an Error message will be displayed to the user specifying bad credentials or a locked account.

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first.

Inter-case Dependencies

None

5.2.2 Specification ID: ETMS-SR-02

Objective: The objective of this test case is to ensure that all client and server communications are encrypted using Transport Security Layer (TSL) to protect personally identifiable information (PII) and are using public-key cryptography to authenticate the connection through the use of certificates.

Test Items: This test will emulate a standard user attempting to login to the MySQL server utilizing the web front-end of ETMS.

Input Specifications

1. Click in the Username textbox
2. Type in your username

3. Click in the Password textbox
4. Type in your password
5. Click on the Sign in button or press enter after username and password have been inputted.

Output Specifications

1. The Cursor will blink in the Username textbox
2. The username will appear as the user types it
3. The Cursor will blink in the Password textbox
4. Asterisks or dots will appear as the user types to hide the password
5. The button will depress and the user timesheet page will load if the credentials provided were correct, and the TLS connection succeeded.. If the connection failed an Error message will be displayed to the user specifying that the SSL connection failed.

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

The user will need to have the proper certificates and keys created and in the keystore.

Inter-case Dependencies

None

5.2.3 Specification ID: ETMS-SR-03

Objective: The objective of this test case is to verify that users can have different privilege levels based on their role.

Test Items: This test will emulate both a standard user logging-in and a supervisor logging-in through the ETMS front-end.

Input Specifications

1. Click in the Username textbox
2. Type in the user username
3. Click in the Password textbox
4. Type in the user password
5. Click on the Sign in button or press enter after username and password have been inputted
6. Click on the Sign out button
7. Click in the Username textbox
8. Type in the supervisor username
9. Click in the Password textbox
10. Type in the supervisor password
11. Click on the Sign in button or press enter after username and password have been inputted
12. Click on the Sign out button

Output Specifications

1. The Cursor will blink in the Username textbox
2. The username will appear as the user types it
3. The Cursor will blink in the Password textbox
4. Asterisks or dots will appear as the user types to hide the password
5. The button will depress and the user timesheet page will load, the top of the screen text that says “Role:” will be visible. It should state “non-supervisor”.
6. The button will depress and the screen will reset to the login prompt.
7. The Cursor will blink in the Username textbox
8. The username will appear as the supervisor types it

9. The Cursor will blink in the Password textbox
10. Asterisks or dots will appear as the supervisor types to hide the password
11. The button will depress and the supervisor timesheet page will load, the top of the screen text that says "Role:" will be visible. It should state "Supervisor".

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, SSL certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

Requires standard user, and a supervisor user to try accounts.

Inter-case Dependencies

5.2.4 Specification ID: ETMS-SR-05

Objective: The objective of this test case is to verify that the password policy is being enforced by the database server to ensure the use of strong passwords.

Test Items: This test will emulate a user changing their password through the ETMS front-end.

Input Specifications

1. Click in the Username textbox
2. Type in the user username
3. Click in the Password textbox
4. Type in the user password

5. Click on the Sign in button or press enter after username and password have been inputted
6. Click on the Account tab at the top of the page
7. Click on the Change Password tab on the side of the page
8. Click in the Username textbox
9. Type in the user username
10. Click in the Old Password textbox
11. Type in the users old password
12. Click in the New Password textbox
13. Type in the users new password
14. Click in the Confirm New Password textbox
15. Type in the users new password

Output Specifications

1. The Cursor will blink in the Username textbox
2. The username will appear as the user types it
3. The Cursor will blink in the Password textbox
4. Asterisks or dots will appear as the user types to hide the password
5. The button will depress and the user timesheet page will load
6. The Account page will load for that user
7. The Change Password page will load (contains 4 textboxes for username/password)
8. The Cursor will blink in the Username textbox
9. The username will appear as the user types it
10. The Cursor will blink in the Old Password textbox
11. Asterisks or dots will appear as the user types to hide the password
12. The Cursor will blink in the New Password textbox
13. Asterisks or dots will appear as the user types to hide the password
14. The Cursor will blink in the Confirm New Password textbox
15. Asterisks or dots will appear as the user types to hide the password

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

Inter-case Dependencies

5.2.5 Specification ID: ETMS-SR-06

Objective: The objective of this test case is to verify that the principle of least privilege is being followed for the different privilege levels on the database (user, supervisor, administrative). Access should only be granted to the data a user needs in order to perform their work.

Test Items: This test will emulate a user attempting to view another user's timesheet via the web interface.

Input Specifications

1. Click in the Username textbox
2. Type in the user username
3. Click in the Password textbox
4. Type in the user password
5. Click on the Sign in button or press enter after username and password have been inputted
6. User selects the reports tab.

Output Specifications

1. The Cursor will blink in the Username textbox
2. The username will appear as the user types it
3. The Cursor will blink in the Password textbox

4. Asterisks or dots will appear as the user types to hide the password
5. The button will depress and the user timesheet page will load
6. The reports page opens, the user should only be able to see their own reports unless they are a supervisor.

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

Inter-case Dependencies

5.2.6 Specification ID: ETMS-SCR -01

Objective: The objective of this test case is to determine that a user is only able to access the system if they have been added

Test Items: This test will emulate a user that has not been added to the database attempt to sign in, as well as a user that has been added.

Input Specifications

1. User that has NOT been added will click in the Username textbox
2. Type in your username
3. Click in the Password textbox
4. Type in your password
5. Click on the Sign in button or press enter after username and password has been inputted.
6. User that HAS been added will then repeat from step 1

Output Specifications

1. The Cursor will blink in the Username textbox
2. The username will appear as the user types it
3. The Cursor will blink in the Password textbox
4. Asterisks or dots will appear as the user types to hide the password
5. The button will depress and the user timesheet page will load if the user has been added to the system. If the user is not within the database, an error will be generated that prevents the user from signing in.

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first, and add them into the database

Inter-case Dependencies

None

5.2.7 Specification ID: ETMS-SCR -02

Objective: The objective of this test case is to validate that a user has access to certain features of the system based on their role

Test Items: This test will emulate a several users with different roles, attempting to access portions of the system.

Input Specifications

1. User with Employee rights will sign into the system
2. Click on link that says “Manage”
3. Click on link that says “Sign out”
4. User with Supervisor rights will repeat steps 1-4
5. User with Admin rights will repeat steps 1-4

Output Specifications

1. Upon signing in the user will be taken the home screen; clicking the “Manage” link transports the user the management page. If the user is an employee, then the management page will have no features. A super-user will have features such as “change employee shift”. The Admin will have features such as “Add New User”

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first, and add them into the database

Inter-case Dependencies

None

5.2.8 Specification ID: ETMS-SCR -03

Objective: The objective of this test case is to validate that server access is only for users who have been added to the system

Test Items: This test will emulate a user without access attempt to sign on

Input Specifications

1. User will click in the Username textbox
2. Type in your username
3. Click in the Password textbox
4. Type in your password
5. Click on the Sign in button or press enter after username and password has been inputted.

Output Specifications

1. Upon clicking the sign in button, the user will receive a message that states; "User account not found. Please check the spelling of your username and/or password."

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible web browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first, and add them into the database

Inter-case Dependencies

None

5.2.9 Specification ID: ETMS-SCR -04

Objective: The objective of this test case is to Validate that an error log is created when the program encounters an error.

Test Items: This test will emulate running the system on an out of date browser and generating the error log.

Input Specifications

1. User will click in the Username textbox
2. Type in your username
3. Click in the Password textbox
4. Type in your password
5. Click on the Sign in button or press enter after username and password has been inputted.

Output Specifications

1. Upon clicking the sign in button, the user will receive a message that states; "Your current browser is out of date. Please upgrade to the latest version of your current browser."
2. Within the program directory, a file titled "ErrorLog.txt" will be created detailing the exception that the program encountered

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Internet Explorer 6
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first, and add them into the database

Inter-case Dependencies

None

5.2.10 Specification ID: ETMS-PR -01

Objective: The objective of this test case is to verify that the Super-User is able to set shifts for users

Test Items: This test will emulate a Supervisor setting the shift schedule for an existing subordinate user

Input Specifications

1. Super User will sign into the system
2. Click on link that says “Manage”
3. Click on button that says “Manage Employees”
4. Click on “Browse Employees”
5. Select User001
6. Click on option “Set Shift Schedule”
7. Select one of three shift options from the radio button list
8. Click “Apply”

Output Specifications

1. Upon setting the shift for the user, that user’s profile will reflect the selected shift schedule.
2. Viewing User001 in the database will confirm that the schedule has been set

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. Compatible Web Browser
4. Client RSA key and Certificate
5. Mouse
6. Keyboard

7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the Super User first, and add them into the database. Additionally a user account for User001 needs to be set up

Inter-case Dependencies

None

5.2.11 Specification ID: ETMS-PR -02

Objective: The objective of this test case is to validate that the database is able to be copied and replicated

Test Items: This test will emulate an admin user running a copy command

Input Specifications

1. Open mysql shell
2. shell> mysqldump db1 > dump.sql
3. shell> mysqladmin create db2
4. shell> mysql db2 < dump.sql

Output Specifications

1. A new database will be created that is a copy db1 into db2

Environmental Needs

1. MySQL running the system database

Special Procedural Requirements

None

Inter-case Dependencies

None

5.2.12 Specification ID: ETMS-PR -03

Objective: The objective of this test case is to validate that the the system is able to be run portably on multiple machines and browser configurations

Test Items: This test will emulate users attempting to sign on using IE11, Chrome, FireFox

Input Specifications

1. Open IE11
2. User signs on
3. Click on “Check Compatibility” link
4. Close IE11
5. Open Chrome
6. User signs on
7. Click on “Check Compatibility” link
8. Close Chrome
9. Open Firefox
10. User signs on
11. Click on “Check Compatibility” link
12. Close Firefox

Output Specifications

1. Upon signing in and clicking “Check Compatibility” link, a pop up dialog box should appear stating; “You are running a compatible browser!”

Environmental Needs

1. Working computer with network access to the MySQL server
2. The client should have a configuration file setup on their profile (my.cnf/my.ini). Settings for the user's password, the host system, ssl certs/keys, etc. will be configured there.
3. IE11, Chrome, Firefox
4. Client RSA key and Certificate
5. Mouse
6. Keyboard
7. Monitor

Special Procedural Requirements

A MySQL administrator will have to create an account for the user first, and add them into the database

Inter-case Dependencies

None