

# **Usability Test Plan Mafia**

**2.0**

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## Document Overview

This document describes a test plan for conducting a usability test during the development of Mafia. The goals of usability testing include establishing a baseline of user performance, establishing and validating user performance measures, and identifying potential design concerns to be addressed in order to improve the efficiency, end-user satisfaction, and overall game-play experience of this application.

The usability test objectives are:

- To determine design inconsistencies and usability problem areas within the user interface and content areas. Potential sources of error may include:
  - o Navigation errors – failure to locate functions, excessive keystrokes to complete a function, failure to follow recommended screen flow.
  - o Presentation errors – failure to locate and properly act upon desired information in screens, selection errors due to labeling ambiguities.
  - o Control usage problems – improper toolbar or entry field usage.

- Exercise the application or web site under controlled test conditions with representative users. Data will be used to assess whether usability goals regarding an effective, efficient, and well-received user interface have been achieved.
- Establish baseline user performance and user-satisfaction levels of the user interface for future usability evaluations.

This application will be available for general use by any individual or group who wants to play a game of mafia. Testing will be conducted individually as members of the development team interview associates over the next week (1/29/20-2/2/20) and ask specific questions.

## Executive Summary

This usability test will evaluate the overall simplicity of our design and the methods our app will be used by. Is our app easy enough to understand during a first-time playthrough? Will the user understand how to use the online functionality without help from the trainer?

Upon review of this usability test plan, including the draft task scenarios and usability goals for **Mafia**, documented acceptance of the plan is expected.

## Methodology

We will present our list of questions to the potential users we find, and then we will ask them. We will write down the answers that they supply to us in a document that we will summarize later.

## Participants

**The number of participants we need for the testing of our app would need to be between 5 and 25. We will recruit them from people we interact with. The eligibility of the participants depends on their willingness and ability to understand the game of mafia. Their prior knowledge of how the game works would be helpful for the gameplay aspects of our testing, however, we would also like to test 2-5 people who have never played the game of mafia before.**

The participants' responsibilities will be to attempt to complete a set of representative task scenarios presented to them in as efficient and timely a manner as possible, and to provide feedback regarding the usability and acceptability of the user interface. The participants will be directed to provide honest opinions regarding the usability of the application, and to participate in post-session subjective questionnaires and debriefing.

Test participants will be chosen by the development team from known associates. Participants need no special skills or training, and will most likely be between 12-30. However, no specific age range is required. Participants will be tested individually.

## **Training**

**The participants will receive an overview of the rules for the game of Mafia and a cursory explanation of the application. No further training is required.**

## **Procedure**

**Participants will take part in the usability test on campus or on in a another, comfortable environment. A paper prototype with the Web site/Web application and supporting software will be used in a typical office environment. The participant's interaction with the Web site/Web application will be monitored by the facilitator seated in the same office.**

The facilitator will brief the participants on the Web site/Web application and instruct the participant that they are evaluating the application, rather than the facilitator evaluating the participant. Participants will sign an informed consent that acknowledges: the participation is voluntary, that participation can cease at any time, and that the session will be videotaped but their privacy of identification will be safeguarded. The facilitator will ask the participant if they have any questions.

Participants will complete a pretest demographic and background information questionnaire. The facilitator will explain that the amount of time taken to complete the test task will be measured and that exploratory behavior outside the task flow should not occur until after task completion. At the start of each task, the participant will read aloud the task description from the printed copy and begin the task. Time-on-task measurement begins when the participant starts the task.

**The facilitator will instruct the participant to 'think aloud' so that a verbal record exists of their interaction with the Web site/Web application. The facilitator will observe and enter user behavior, user comments, and responses in the Google Document.**

After each task, the participant will complete the post-task questionnaire and elaborate on the task session with the facilitator. After all task scenarios are attempted, the participant will complete the post-test satisfaction questionnaire.

[For Remote Testing]

Participants will take part in the usability test via remote screen-sharing technology. The participant will be seated at their workstation in their work environment. Verbal communication will be supported via telephone.

The facilitator will brief the participant and instruct that he or she is evaluating the Web site/Web application, rather than the facilitator evaluating the participant. Participants will complete a pretest demographic and background information questionnaire. Sessions will begin when all participant questions are answered by the facilitator. The facilitator will inform the participant that time-on-task will be measured and that exploratory behavior outside the task flow should not occur until after task completion.

The facilitator will instruct the participant to read aloud the task description from the printed copy and begin the task. Time-on-task measure will begin. The facilitator will encourage the participants to 'think aloud' and that a verbal record will exist of the task-system interaction. The facilitator will observe and enter user behavior and comments, and system interaction in a data logging application.

After each task, the participant will complete the post-task questionnaire and elaborate on the task session. After all tasks have been attempted, the participant will complete a post-test satisfaction questionnaire.

## **Roles**

The roles involved in a usability test are as follows. An individual may play multiple roles and tests may not require all roles.

### **Trainer**

- Provide training overview prior to usability testing

## **Facilitator**

- Provides overview of study to participants
- Defines usability and purpose of usability testing to participants
- Assists in conduct of participant and observer debriefing sessions
- Responds to participant's requests for assistance

## **Data Logger**

- Records participant's actions and comments

## **Test Observers**

- Silent observer
- Assists the data logger in identifying problems, concerns, coding bugs, and procedural errors
- Serve as note takers.

## **Test Participants**

- Provides overview of study to participants
- Defines usability and purpose of usability testing to participants
- Assists in conduct of participant and observer debriefing sessions
- Responds to participant's requests for assistance

## **Ethics**

All persons involved with the usability test are required to adhere to the following ethical guidelines:

- The performance of any test participant must not be individually attributable. Individual participant's name should not be used in reference outside the testing session.
- A description of the participant's performance should not be reported to his or her manager.

# Usability Tasks

## Round 1

1. How does the user want to communicate when online? (Mic, Video, Chat, etc?)
2. How would the user prefer to submit votes?
3. Would the user like a set amount of day/night time, or be able to adjust it?
4. Does the user want themes, and if so, what kinds? (seasonal, specific, geographical, time periods, etc?)
5. Would the user use an online play? How would the user use online play?
6. Would the user use quickplay? What does that mean to you? (expectations)
7. Would you rather have the option to create an account immediately, or get signed in as a guest and then have the option of creating an account?
8. How does the user feel about the overall design and flow of the app?
9. How would the user feel about single sign-on vs. create your own account? (Ask about accounts in general). If this app required an account, what is the ideal way to create an account?
10. Would the user enjoy/use skins if they were available?
11. Would the user want a dedicated screen for rules, or an option on every screen to reference the rules? Should roles be included in that list?

## Round 2

1. How does the user want to communicate when online? (Mic, Video, Chat, etc?)
2. How would the user prefer to submit votes?
3. Would the user like a set amount of day/night time, or be able to adjust it?
4. Does the user want themes, and if so, what kinds? (seasonal, specific, geographical, time periods, etc?)
5. Would the user use an online play? How would the user use online play?
6. Would the user use quickplay? What does that mean to you? (expectations)
7. Would you rather have the option to create an account immediately, or get signed in as a guest and then have the option of creating an account?
8. How does the user feel about the overall design and flow of the app?
9. How would the user feel about single sign-on vs. create your own account? (Ask about accounts in general). If this app required an account, what is the ideal way to create an account?
10. Would the user enjoy/use skins if they were available?
11. Would the user want a dedicated screen for rules, or an option on every screen to reference the rules? Should roles be included in that list?

## Round 3

1. Layout/Flow?



- a. What if anything would you change?
  - b. Does anything feel out of place, goofy, unintuitive, strange, awkward?
2. Color Schemes, Theme, Feel? (aesthetic)
3. Accounts screen/page? (full page vs. pop-up)
4. Simple Enough?
5. Do they like how gameplay works, is it intuitive/understandable? (ask specifically about voting)
6. What information would you like to see after the game, if any? (results)
7. General walkthrough and thoughts.

#### Round 4

1. For choosing the number of roles, do people prefer +/- buttons or to type in the number?
2. Do they like the layout for the current create game screen?
3. Ready and Back buttons ordering? Do they like which side they are on?
4. Do these instructions make sense (If you had never played mafia before, or haven't played mafia before)? If they don't make sense, what kind of instructions do you want to see?
5. What kind of theme would you like to see? (If you had to pick one or two)? What kinds of changes on the app would you want to see with that theme?
6. Should we scrap the join game screen and put the password box on the home page?
7. Should we put the password box from the create game screen on the home page? (The user would create the password before they alter the settings of the game or join a game)

## Usability Metrics

Usability metrics refers to user performance measured against specific performance goals necessary to satisfy usability requirements. Scenario completion success rates, adherence to dialog scripts, error rates, and subjective evaluations will be used. Time-to-completion of scenarios will also be collected.

### Scenario Completion

Each scenario will require, or request, that the participant obtains or inputs specific data that would be used in course of a typical task. The scenario is completed when the participant indicates the scenario's goal has been obtained (whether successfully or unsuccessfully) or the participant requests and receives sufficient guidance as to warrant scoring the scenario as a critical error.

## **Critical Errors**

Critical errors are deviations at completion from the targets of the scenario. Obtaining or otherwise reporting of the wrong data value due to participant workflow is a critical error. Participants may or may not be aware that the task goal is incorrect or incomplete.

Independent completion of the scenario is a universal goal; help obtained from the other usability test roles is cause to score the scenario a critical error. Critical errors can also be assigned when the participant initiates (or attempts to initiate) an action that will result in the goal state becoming unobtainable. In general, critical errors are unresolved errors during the process of completing the task or errors that produce an incorrect outcome.

## **Non-critical Errors**

Non-critical errors are errors that are recovered from by the participant or, if not detected, do not result in processing problems or unexpected results. Although non-critical errors can be undetected by the participant, when they are detected they are generally frustrating to the participant.

These errors may be procedural, in which the participant does not complete a scenario in the most optimal means (e.g., excessive steps and keystrokes). These errors may also be errors of confusion (ex., initially selecting the wrong function, using a user-interface control incorrectly such as attempting to edit an un-editable field).

Noncritical errors can always be recovered from during the process of completing the scenario. Exploratory behavior, such as opening the wrong menu while searching for a function, **will** be coded as a non-critical error.

## **Subjective Evaluations**

Subjective evaluations regarding ease of use and satisfaction will be collected via questionnaires, and during debriefing at the conclusion of the session. The questionnaires will utilize free-form responses and rating scales.

## **Scenario Completion Time (time on task)**

The time to complete each scenario, not including subjective evaluation durations, will be recorded.

## Usability Goals

The next section describes the usability goals for **Mafia**.

### Completion Rate

The completion rate is the percentage of test participants who successfully complete the task without critical errors. A critical error is defined as an error that results in an incorrect or incomplete outcome. In other words, the completion rate represents the percentage of participants who, when they are finished with the specified task, have an "output" that is correct. Note: If a participant requires assistance in order to achieve a correct output then the task will be scored as a critical error and the overall completion rate for the task will be affected.

**A completion rate of 100% is the goal for each task in this usability test.**

### Error-free rate

Error-free rate is the percentage of test participants who complete the task without any errors (critical or non-critical errors). A non-critical error is an error that would not have an impact on the final output of the task but would result in the task being completed less efficiently.

**An error-free rate of 80% is the goal for each task in this usability test.**

### Time on Task (TOT)

The time to complete a scenario is referred to as "time on task". It is measured from the time the person begins the scenario to the time he/she signals completion.

### Subjective Measures

Subjective opinions about specific tasks, time to perform each task, features, and functionality will be surveyed. At the end of the test, participants will rate their satisfaction with the overall system. Combined with the interview/debriefing session, these data are used to assess the attitudes of the participants.

## Problem Severity

To prioritize recommendations, a method of problem severity classification will be used in the analysis of the data collected during evaluation activities. The approach treats problem severity as a combination of two factors - the impact of the problem and the frequency of users experiencing the problem during the evaluation.

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## Impact

Impact is the ranking of the consequences of the problem by defining the level of impact that the problem has on successful task completion. There are three levels of impact:

- High - prevents the user from completing the task (critical error)
- Moderate - causes user difficulty but the task can be completed (non-critical error)
- Low - minor problems that do not significantly affect the task completion (non-critical error)

## Frequency

Frequency is the percentage of participants who experience the problem when working on a task.

- High: 30% or more of the participants experience the problem
- Moderate: 11% - 29% of participants experience the problem
- Low: 10% or fewer of the participants experience the problem

## Problem Severity Classification

The identified severity for each problem implies a general reward for resolving it, and a general risk for not addressing it, in the current release.

**Severity 1** - High impact problems that often prevent a user from correctly completing a task. They occur in varying frequency and are characteristic of calls to the Help Desk.

Reward for resolution is typically exhibited in fewer Help Desk calls and reduced redevelopment costs.

**Severity 2** - Moderate to high frequency problems with moderate to low impact are typical of erroneous actions that the participant recognizes needs to be undone. Reward for resolution is typically exhibited in reduced time on task and decreased training costs.

**Severity 3** - Either moderate problems with low frequency or low problems with moderate frequency; these are minor annoyance problems faced by a number of participants. Reward for resolution is typically exhibited in reduced time on task and increased data integrity.

**Severity 4** - Low impact problems faced by few participants; there is low risk to not resolving these problems. Reward for resolution is typically exhibited in increased user satisfaction.

## Reporting Results

The Usability Test Report will be provided at the conclusion of the usability test. It will consist of a report and/or a presentation of the results; evaluate the usability metrics against the pre-approved goals, subjective evaluations, and specific usability problems and recommendations for resolution. The recommendations will be categorically sized by development to aid in implementation strategy. The final report is anticipated to be delivered to the Project UCD Contact by **3/25/2020**.