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FACULTY OF ENGINEERING
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Test Plan, Test Design Specifications and Test Cases
Version 1

CENG 408
Innovative System Design and Development II

Rule and Munus: AI Based Game Development Project

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1. INTRODUCTION

1.1 Version Control

Version No	Description of Changes	Date
1.0	First Version	March 28, 2025

1.2 Overview

This document is a guideline to the users that are chosen as testers and developers of the project itself.

1.3 Scope

The scope of the document is determining the outline of the test plan, test design specifications and the test cases by considering the use cases.

1.4 Terminology

Acronym	Definition
GUI	Graphical User Interface (GUI)
AI	Artificial Intelligent
PP	Peace Phase
WP	War Phase
STR	Strength
DEX	Dexterity
INT	Intelligence
WIS	Wisdom
CON	Constitution
CHA	Charisma
AB	AI Behaviour(s)

2. FEATURES TO BE TESTED

2.1 Graphical User Interface (GUI)

The game has 2 main GUI sections as Menu GUI and In Game GUI. Both sections have their own components that have to be tested under their corresponding functions.

2.2 Peace Phase (PP)

PP is chosen as the starting phase so that a tutorial should be started depending on the player's desire. This phase includes town management, attribute allocation, interacting with NPC's and inventory management functions to be tested.

2.3 War Phase (WP)

Next element of the cycle WP also has a tutorial that should be started depending on the player's desire. This phase includes gathering, going to the coliseum, combating and inventory management functions to be tested.

2.4 AI Behaviors (AB)

As mentioned in previous documents, AI should behave like a real player as much as possible. AI behaviours will be tested under this condition by considering AI's decisions.

3. ITEM PASS/FAIL CRITERIA

3.1 Exit Criteria

- 100% of the test cases are executed

- 95% of the test cases passed

- All High Priority test cases passed

- At least 80% of the Medium Priority test cases passed

4. REFERENCES

[1]https://github.com/CankayaUniversity/ceng-407-408-2024-2025-Rule-and-Munus-AI-Based-Game-Development-Project/wiki/Software-Design-Document
[2]https://github.com/CankayaUniversity/ceng-407-408-2024-2025-Rule-and-Munus-AI-Based-Game-Development-Project/wiki/Software-Requirements-Specification-Document-(SRS)

5. TEST DESIGN SPECIFICATIONS

5.1 Graphical User Interface (GUI)

5.1.1 Subfeatures to be tested

5.1.1.1 **Play Button (GUI.PLY_BTN)**

Player can click the "Play" button in the main menu. Then the game menu will appear which has two button that are "Continue" and "New Game" to select.

5.1.1.2 **Setting Button (GUI.STTS_BTN)**

Player can click the "Setting" button in the main menu. Then the settings menu will appear which has the "Credits" button and "Sound Adjustment" bar.

5.1.1.3 **Credits Button (GUI.CRD_BTN)**

Player can click the "Credits" button in the settings menu. Then project members and advisors will be displayed on the panel.

5.1.1.4 **Back Button (GUI.BACK_BTN)**

Player can click the "Back" button that will appear on every menu except the main menu. Player can go back to the previous menu by clicking this button.

5.1.1.5 **Sound Adjustment Bar (GUI.SND_ADJ_BAR)**

Player can drag the button on the "Sound Adjustment" bar that will appear on the settings menu. This will increase/decrease the both music and effect sounds.

5.1.1.6 **Graphical Adjustment Button(s) (GUI.GRP_ADJ_BTN)**

Player can click the "Graphics" button(s) that will appear on the settings menu. Player can select "low", "medium" or "high" graphics which will be displayed under the "Graphics" button.

5.1.1.7 **Continue Button (GUI.CNT_BTN)**

Player can click the "Continue" button in the game menu to continue the game from the last save. This button only be intractable if there is a saved game.

5.1.1.8 **New Game Button (GUI.NW_GM_BTN)**

Player can click the "New Game" button in the game menu to create a new game. Then the new game menu will appear that has the character attributes selection section.

5.1.1.9 **Name Specification Text Bar (GUI.NM_SPCF_TXT_BAR)**

Player can click the "Name" text bar in the new game menu and input a string.

5.1.1.10 Class Selection Dropdown Menu (GUI.CLS_SLC_DRP_MEN)

Player can click the "Class" button in the new game menu and select a class.

5.1.1.11 Race Selection Dropdown Menu (GUI.RC_SLC_DRP_MEN)

Player can click the "Race" button in the new game menu and select a race.

5.1.1.12 Attribute Point Increase/Reduce Button(s) (GUI.ATT_PT_INC_RDC_BTN)

Player can click the "+" or "-" buttons of the corresponding attributes in the new game menu. This will allocate the available attribute points depending on the player's choice.

5.1.1.13 Start Button (GUI.STRT_BTN)

Player can click the "Start" button in the new game menu then the game will start. This button only be intractable if the player filled all character preferences.

5.1.1.14 Display Health, Stamina and Level Panel (GUI.DSPL_PRPS_PNL)

A panel that contains the current "Levet", "Health" and "Stamina" will be displayed on the left corner of the screen in given order.

5.1.1.15 Inventory Indicator (GUI.INV_INDC)

An indicator that has a bag icon and directs the "Inventory" if the player clicks on it.

5.1.1.16 Drop Item Button (GUI.DRP_ITM_BTN)

Player can click the "Drop" button of the corresponding item which will remove the item from the inventory and destroy it.

5.1.1.17 Building Interaction Button (GUI.BLD_INTR_BTN)

Player can click the "Interaction" button of the corresponding building. Then the building specific panel will be displayed.

5.1.1.18 Build Button (GUI.BLD_BTN)

Player can click the "Build" button of the corresponding building on the corresponding building panel.

5.1.1.19 Upgrade Button (GUI.UPGRD_BTN)

Player can click the "Upgrade" button of the corresponding building on the corresponding building panel.

5.1.1.20 Blacksmith Panel (GUI.BLSM_PNL)

A panel that contains the "Craft Item" button(s) under the corresponding item slots and their costs will be displayed on the screen.

5.1.1.21 Craft Item Button (GUI.CRFT_ITM_BTN)

Player can click the "Craft Item" button of the corresponding item slot. Each button of the item slot will be intractable if and only if the player has sufficient materials.

5.1.1.22 Market Panel (GUI.MRKT_PNL)

A panel that contains the "Sell Item" and "Buy Item" button(s) under the corresponding items and their values/costs will be displayed on the screen.

5.1.1.23 Sell Item Button (GUI.SLL_ITM_BTN)

Player can click the "Sell Item" button of the corresponding item. Then the item will be removed from the inventory and material value will be added to the stock of the player.

5.1.1.24 Buy Item Button (GUI.BY_ITM_BTN)

Player can click the "Buy Item" button of the corresponding item. Then the item will be added to the inventory and material cost will be subtracted from the stock of the player.

5.1.1.25 Display Opponent Information Panel (GUI.DSPL_OPP_INF_PNL)

A panel that contains the current "Health", "Stamina" and level informations of the opponent will be displayed on the right upper corner of the "War Scene"

5.1.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
GUI.PLY_BTN.01	2.1.1	H	Click the "Play" button int the main menu, The game menu will appear with "Continue" and "New Game" buttons.

TC ID	Requirements	Priority	Scenario Description
GUI.STTS_BTN.01	2.1.2	M	Click the "Setting" button in the main menu. The settings menu appears with "Credits" and "Sound Adjustment" options.

TC ID	Requirements	Priority	Scenario Description
GUI.CRD_BTN.01	2.1.3	L	Click the "Credits" button in the settings menu. Project members and advisors are displayed.

TC ID	Requirements	Priority	Scenario Description
GUI.BACK_BTN.01	2.1.4	H	Click the "Back" button. Return to the previous menu, except the main menu.

TC ID	Requirements	Priority	Scenario Description
GUI.SND_ADJ_BAR.01	2.1.5	M	Drag the "Sound Adjustment" bar in the settings menu. Adjusts both music and effect sounds.

TC ID	Requirements	Priority	Scenario Description
GUI.GRP_ADJ_BTN.01	2.1.6	M	Click the "Graphics" button in the settings menu. Options "Low", "Medium", and "High" are displayed.

TC ID	Requirements	Priority	Scenario Description
GUI.CNT_BTN.01	2.1.7	H	Click the "Continue" button in the game menu. Continues the game from the last save. Only active if a save exists.

TC ID	Requirements	Priority	Scenario Description
GUI.NW_GM_BTN.01	2.1.8	M	Click the "New Game" button in the game menu. The new game menu with character attribute selection appears.

TC ID	Requirements	Priority	Scenario Description
GUI.NM_SPCF_TXT_BAR.01	2.1.9	M	Click the "Name" text bar in the new game menu and input a string.

TC ID	Requirements	Priority	Scenario Description
GUI.CLS_SLC_DRP_MEN.01	2.1.10	M	Click the "Class" button in the new game menu and select a class.

TC ID	Requirements	Priority	Scenario Description
GUI.RC_SLC_DRP_MEN.01	2.1.11	M	Click the "Race" button in the new game menu and select a race.

TC ID	Requirements	Priority	Scenario Description
GUI.ATT_PT_INC_RDC_BTN.01	2.1.12	H	Click "+" or "-" buttons for attributes in the new game menu. Allocates available attribute points.

TC ID	Requirements	Priority	Scenario Description
GUI.STRT_BTN.01	2.1.13	H	Click the "Start" button in the new game menu. The game starts if all character preferences are filled.

TC ID	Requirements	Priority	Scenario Description
GUI.DSPL_PRPS_PNL.01	2.1.14	M	A panel displays current "Level", "Health", and "Stamina" on the left corner of the screen.

TC ID	Requirements	Priority	Scenario Description
GUI.INV_INDC.01	2.1.15	M	Click the inventory indicator (bag icon). Opens the inventory panel.

TC ID	Requirements	Priority	Scenario Description
GUI.DRP_ITM_BTN.01	2.1.16	M	Click the "Drop" button for an item. The item is removed from inventory and destroyed.

TC ID	Requirements	Priority	Scenario Description
GUI.BLD_INTR_BTN.01	2.1.17	M	Player can click the "Interaction" button of the corresponding building. Then the building specific panel will be displayed.

TC ID	Requirements	Priority	Scenario Description
GUI.BLD_BTN.01	2.1.18	M	Click the inventory indicator (bag icon). Opens the inventory panel.

TC ID	Requirements	Priority	Scenario Description
GUI.UPGRD_BTN.01	2.1.19	M	Player can click the "Upgrade" button of the corresponding building on the corresponding building panel.

TC ID	Requirements	Priority	Scenario Description
GUI.BLSM_PNL.01	2.1.20	H	A panel that contains the "Craft Item" button(s) under the corresponding item slots and their costs will be displayed on the screen.

TC ID	Requirements	Priority	Scenario Description
GUI.CRFT_ITM_BTN.01	2.1.21	H	Player can click the "Craft Item" button of the corresponding item slot. Each button of the item slot will be intractable if and only if the player has sufficient materials.

TC ID	Requirements	Priority	Scenario Description
GUI.MRKT_PNL.01	2.1.22	H	A panel that contains the "Sell Item" and "Buy Item" button(s) under the corresponding items and their values/costs will be displayed on the screen.

TC ID	Requirements	Priority	Scenario Description
GUI.SLL_ITM_BTN.01	2.1.23	H	Player can click the "Sell Item" button of the corresponding item. Then the item will be removed from the inventory and material value will be added to the stock of the player.

TC ID	Requirements	Priority	Scenario Description
GUI.BY_ITM_BTN.01	2.1.24	H	Player can click the "Buy Item" button of the corresponding item. Then the item will be added to the inventory and material cost will be subtracted from the stock of the player.

TC ID	Requirements	Priority	Scenario Description
GUI.DSPL_OPP_INF_PNL.01	2.1.25	H	A panel that contains the current "Health", "Stamina" and level informations of the opponent will be displayed on the right upper corner of the "War Scene"

5.2 Peace Phase (PP)

5.2.1 Subfeatures to be tested

5.2.1.1   Town Management (PP.TM)

The player can build and upgrade buildings and interact with panels such as the Market and Blacksmith.

5.2.1.2   Stat Point Allocation (PP.STP)

The player can assign stat points to attributes like STR, DEX, and INT, with changes reflected in the character panel.

5.2.1.3   NPC Interaction (PP.NPC)

The player can interact with NPCs that become available based on town progression and unlocked buildings.

5.2.1.4   Inventory Management (PP.INV)

The player can open the inventory, drop items, and equip or unequip gear.

5.2.1.5   Tutorial (PP.TUT)

If enabled, the tutorial panel is shown at the start of Peace Phase and can be skipped or completed by the player.

5.2.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
PP.TM.01	2.2.1	H	The player builds a new building in town.
PP.TM.02	2.2.1	M	The player upgrades an existing building.

TC ID	Requirements	Priority	Scenario Description
PP.STP.01	2.2.2	H	The player assigns stat points and the character attributes update correctly.
PP.NPC.01	2.2.3	M	The player interacts with an NPC after unlocking it through town progression.

TC ID	Requirements	Priority	Scenario Description
PP.INV.01	2.2.4	H	The player opens the inventory from the UI.
PP.INV.02	2.2.4	M	The player drops an item and it is removed from the inventory.
PP.INV.03	2.2.4	M	The player equips and unequips an item correctly.

TC ID	Requirements	Priority	Scenario Description
PP.TUT.01	2.2.5	H	The tutorial appears when a new game starts with tutorial enabled.
PP.TUT.02	2.2.5	L	The player skips the tutorial and enters the game.
PP.TUT.03	2.2.5	L	The player completes all tutorial steps and continues to the Peace Phase.

5.3 War Phase (WP)

5.3.1 Subfeatures to be tested

5.3.1.1   Gathering (WP.G)

The player directs the process of collecting resource materials by rolling dice and determines whether an encounter will occur.

5.3.1.2   Opponent Founded (WP.OF)

The player determines whether an encounter has occurred during resource gathering and considers the option to fight or flee.

5.3.1.3   Going to the Colosseum (WP.GC)

The player goes to the Colosseum to join the tournament and progress through the stages.

5.3.1.4   Starting Combat (WP.SC)

When the combat starts, the player enters the fight by taking attacking or defending actions in accordance with the combat mechanics.

5.3.1.5   Rolling the Dice (WP.RD)

The player rolls dice to determine the process of gathering materials, enemy encounters, battle success rates (attack, defense, escape), and enemy types.

5.3.1.6   Attacking with the Current Weapon (WP.ACW)

The player attacks the opponent using his/her current weapon and the damage dealt to the opponent is calculated correctly.

5.3.1.7   Attack with a Spell (WP.AS)

The player attacks using spell mana and the spells' effects work correctly.

5.3.1.8   Movement (WP.M)

The player moves right or left in the combat area to position strategically

5.3.1.9   Defending (WP.D)

The player takes defensive actions to reduce incoming damage and calculations are processed correctly.

5.3.1.10   Ending the Turn (WP.ET)

When the player runs out of available action points or manually ends his/her round, the transition to the next round occurs smoothly.

5.3.1.11   **Finish Phase (WP.FP)**

The player can complete the battle phase, advance to the next phase in the Colosseum, or return to the city with the collected resources.

5.3.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
WP.G.01	2.3.1	H	The player collects resources by rolling the dice and gets the correct amount of resources.
WP.G.02	2.3.1	H	The player collects resources by rolling dice and encounters an enemy.
WP.G.03	2.3.1	M	The player rolls the dice but fails to collect resources and does not receive any resources.
WP.G.04	2.3.1	H	The player rolls dice, collects resources, and encounters enemies, but an error occurs during resource collection.

TC ID	Requirements	Priority	Scenario Description
WP.OF.01	2.3.2	H	The player encounters an enemy and chooses to either fight or flee.
WP.OF.02	2.3.2	H	The player encounters an enemy and chooses to fight, combat options become active.
WP.OF.03	2.3.2	H	If the player encounters an enemy and chooses the escape option, the player can successfully escape.

TC ID	Requirements	Priority	Scenario Description
WP.GC.01	2.3.3	H	The player goes to the arena and selects the appropriate tournament stage to participate in.
WP.GC.02	2.3.3	H	The player selects the appropriate tier in the arena to participate in the tournament, but has not reached the sufficient tier to participate in the tournament.

TC ID	Requirements	Priority	Scenario Description
WP.SC.01	2.3.4	H	The player begins the battle and can perform the actions of attacking, defending, or moving.
WP.SC.02	2.3.4	H	Accurate Reflection of Resources and the Situation of Shortage of Resources when War Begins.

TC ID	Requirements	Priority	Scenario Description
WP.RD.01	2.3.5	M	The player rolls the dice and depending on the result, the resource collection process is affected accordingly
WP.RD.02	2.3.5	M	The player rolls the dice and the result triggers a combat encounter, affecting attack/defense rates
WP.RD.03	2.3.5	M	The player rolls the dice, but encounters an unexpected situation and the resource collection process is interrupted

TC ID	Requirements	Priority	Scenario Description
WP.ACW.01	2.3.6	H	The player attacks using their current weapon and the damage calculation is done correctly.
WP.ACW.02	2.3.6	H	The player attacks an enemy and the damage taken is reduced due to the enemy's armor. Armor is an accurate calculation of how much the player will reduce the damage from their attack.

TC ID	Requirements	Priority	Scenario Description
WP.ACS.01	2.3.7	M	The player attacks using magic, and mana and magic effects are calculated correctly.
WP.ACS.02	2.3.7	M	The player casts a spell, but the spell cast fails due to insufficient mana.
WP.ACS.03	2.3.7	M	The player tries to use magic but the magic attack fails.

TC ID	Requirements	Priority	Scenario Description
WP.M.01	2.3.8	H	The player moves left or right on the battlefield and takes strategic positions
WP.M.02	2.3.8	H	The player wants to move but is stuck with movement restrictions.

TC ID	Requirements	Priority	Scenario Description
WP.D.01	2.3.9	H	The player reduces damage by blocking incoming attacks and the calculations are made correctly, but is stuck with movement restrictions.
WP.D.02	2.3.9	H	The player defends but the damage reduction calculation is incorrect.

TC ID	Requirements	Priority	Scenario Description
WP.ET.01	2.3.10	H	The player ends the round manually and moves on to the next stage without any problems.
WP.ET.02	2.3.10	H	The player wants to end the round, but the phase transition system is faulty and cannot continue.

TC ID	Requirements	Priority	Scenario Description
WP.FP.01	2.3.11	H	The player completes the battle phase. The player returns to the city with the resources he collected without any problems.
WP.FP.02	2.3.11	H	The player completes the battle phase, checks the inventory in the city and correctly stores the resources the player has collected.

5.4 AI Behaviours (AB)

5.4.1 Subfeatures to be tested

5.4.1.1   Accessing PP and WP Functions (AB.AC)

The AI needs to properly access and use both PP and WP functions to make decisions based on the current context.

5.4.1.2   Making Reasonable Decisions (AB.MRD)

AI needs to make logical decisions based on past, present and future conditions.

5.4.1.2.1   Considering Past (AB.MRD.CP)

The AI evaluates past combat history and player characteristics, making decisions that align with past patterns or weaknesses.

5.4.1.2.2   Analyzing Present (AB.MRD.AP)

Artificial intelligence analyzes both the warriors' characteristics (health, attack, defense) and their equipment in order to make the best decisions during battle.

5.4.1.2.3   Calculating Future (AB.MRD.CF)

AI predicts the consequences of actions in the near future to maximize the chances of success.

5.4.1.3   Making Mistake (AB.MM)

The AI sometimes makes mistakes or bad decisions, which makes combat feel more human.

5.4.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
AB.AC.01	2.4.1	H	The AI correctly accesses the PP and WP functions required to initiate a combat phase.

TC ID	Requirements	Priority	Scenario Description
AB.MRD.CP.01	2.4.2.1	M	The AI is successful in determining its strategy by taking into account the player's combat history.

TC ID	Requirements	Priority	Scenario Description
AB.MRD.AP.01	2.4.2.2	H	AI accurately analyzes the current situation, taking into account the statistics of both the player and the opponent.
AB.MRD.AP.02	2.4.2.2	H	The AI underestimates the player's equipment, leading to poor decisions.

TC ID	Requirements	Priority	Scenario Description
AB.MRD.CF.01	2.4.2.3	L	AI successfully predicts the future consequences of its actions.

TC ID	Requirements	Priority	Scenario Description
AB.MM.01	2.4.3	M	The AI makes an unexpected mistake during combat, for example using an attack that is inappropriate for the situation.
AB.MM.02	2.4.3	M	AI makes human-like mistakes, such as misjudging enemy capabilities

6 Detailed Test Cases

6.1   GUI.S_STRT_BTN.01

TC_ID	GUI.PLY_BTN.01
Purpose	Opens the game menu from the main menu.
Requirements	2.1.1
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Main menu is displayed..
Setup	Game is launched, and the main menu is visible.
Procedure	[A01] Click the "Play" button in the main menu.
Cleanup	Return to the main menu.

6.2   GUI.STTS_BTN.01

TC_ID	GUI.STTS_BTN.01
Purpose	Opens the settings menu.
Requirements	2.1.2
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Main menu is displayed.
Setup	Game is launched, and the main menu is visible.
Procedure	[A01] Click the "Settings" button in the main menu.
	[V01] The settings menu appears with "Credits" button and "Sound Adjustment" bar.
Cleanup	Return to the main menu.

6.3 GUI.CRD_BTN.01

TC_ID	GUI.CRD_BTN.01
Purpose	Displays project members and advisors.
Requirements	2.1.3
Priority	Medium
Estimated Time Needed	1 Minutes
Dependency	Settings menu is displayed.
Setup	Settings menu is open.
Procedure	[A01] Click the "Credits" button in the settings menu.
	[V01] A panel displaying project members and advisors appears.
Cleanup	Return to the settings menu.

6.4 GUI.BACK_BTN.01

TC_ID	GUI.BACK_BTN.01
Purpose	Returns to the previous menu.
Requirements	2.1.4
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Any menu other than the main menu is displayed.
Setup	Open any sub-menu.
Procedure	[A01] Click the "Back" button.
	[V01] The previous menu appears.
Cleanup	-

6.5   GUI.SND_ADJ_BAR.01

TC_ID	GUI.SND_ADJ_BAR.01
Purpose	Adjusts sound levels.
Requirements	2.1.5
Priority	Medium
Estimated Time Needed	1 Minutes
Dependency	Settings menu is displayed.
Setup	Settings menu is open.
Procedure	[A01] Drag the "Sound Adjustment" bar.
	[V01] Music and effect sounds increase or decrease accordingly.
Cleanup	Return to the settings menu.

6.6   GUI.GRP_ADJ_BTN.01

TC_ID	GUI.GRP_ADJ_BTN.01
Purpose	Changes graphical settings.
Requirements	2.1.6
Priority	Medium
Estimated Time Needed	1 Minutes
Dependency	Settings menu is displayed.
Setup	Settings menu is open.
Procedure	[A01] Click the "Graphics" button.
	[V01] Options "Low", "Medium", and "High" appear.
	[A02] Select an option.
	[V02] The graphics settings change accordingly.
Cleanup	Return to the settings menu.

6.7   GUI.CNT_BTN.01

TC_ID	GUI.CNT_BTN.01
Purpose	Continues from the last saved game.
Requirements	2.1.7
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Saved game exists.
Setup	Game menu is displayed with an existing save..
Procedure	[A01] Click the "Continue" button.
	V01] Game resumes from the last saved state.
Cleanup	-

6.8   GUI.NW_GM_BTN.01

TC_ID	GUI.NW_GM_BTN.01
Purpose	Starts a new game.
Requirements	2.1.8
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Game menu is displayed.
Setup	Game menu is visible.
Procedure	[A01] Click the "New Game" button.
	[V01] The new game menu appears with character selection options.
Cleanup	-

6.9   GUI.NM_SPCF_TXT_BAR.01

TC_ID	GUI.NM_SPCF_TXT_BAR.01
Purpose	Allows the player to input a character name.
Requirements	2.1.9
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	New game menu is displayed.
Setup	New game menu is visible.
Procedure	[A01] Click the "Name" text bar.
	[A02] Enter a string..
	[V01] The inputted name appears in the text field.
Cleanup	-

6.10   GUI.CLS_SLC_DRP_MEN.01

TC_ID	GUI.CLS_SLC_DRP_MEN.01
Purpose	Allows the player to select a class from the dropdown menu.
Requirements	2.1.10
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	New game menu is displayed.
Setup	New game menu is visible.
Procedure	[A01] Click the "Class" dropdown menu.
	[A02] Select a class from the list.
	[V01] The selected class is displayed in the dropdown.
Cleanup	-

6.11   GUI.RC_SLC_DRP_MEN.01

TC_ID	GUI.RC_SLC_DRP_MEN.01
Purpose	Allows the player to select a race from the dropdown menu.
Requirements	2.1.11
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	New game menu is displayed.
Setup	New game menu is visible.
Procedure	[A01] Click the "Race" dropdown menu.
	[A02] Select a race from the list.
Cleanup	-

6.12   GUI.ATT_PT_INC_RDC_BTN.01

TC_ID	GUI.ATT_PT_INC_RDC_BTN.01
Purpose	Allows the player to increase or decrease attribute points.
Requirements	2.1.12
Priority	High
Estimated Time Needed	3 Minutes
Dependency	New game menu is displayed.
Setup	New game menu is visible, attribute points are available.
Procedure	[A01] Click the "+" button of any attribute.
	[A02] Observe the attribute value increasing.
	[A03] Click the "-" button of the same attribute.
	[A04] Observe the attribute value decreasing.
	[V01] The attribute points update accordingly.
Cleanup	-

6.13   GUI.STRT_BTN.01

TC_ID	GUI.STRT_BTN.01
Purpose	Allows the player to start the game if all character preferences are set.
Requirements	2.1.13
Priority	High
Estimated Time Needed	2 Minutes
Dependency	Character preferences are filled..
Setup	New game menu is visible, all fields are completed.
Procedure	[A01] Click the "Start" button.
	[V01] The game begins.
	[V02] If any preference is missing, the button remains inactive.
Cleanup	-

6.14   GUI.DSPL_PRPS_PNL.01

TC_ID	GUI.DSPL_PRPS_PNL.01
Purpose	Displays player health, stamina, and level.
Requirements	2.1.14
Priority	High
Estimated Time Needed	2 Minutes
Dependency	Game is running.
Setup	Player is in-game.
Procedure	[A01] Attend the treatment.
	[V01] A panel displays the player's level, health, and stamina.
Cleanup	-

6.15   GUI.INV_INDC.01

TC_ID	GUI.INV_INDC.01
Purpose	Allows access to inventory.
Requirements	2.1.15
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	Game is running.
Setup	Player is in-game.
Procedure	[A01] Click the inventory indicator.
	[V01] The inventory menu opens.
Cleanup	-

6.16   GUI.DRP_ITM_BTN.01

TC_ID	GUI.DRP_ITM_BTN.01
Purpose	Allows the player to drop an item from inventory.
Requirements	2.1.16
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	Inventory is open.
Setup	Player has at least one item in inventory.
Procedure	[A01] Click the "Drop" button next to an item.
	[V01] The item is removed from inventory and destroyed.
Cleanup	-

6.17   GUI.BLD_INTR_BTN.01

TC_ID	GUI.BLD_INTR_BTN.01
Purpose	Allows interaction with buildings.
Requirements	2.1.17
Priority	Medium
Estimated Time Needed	1 Minutes
Dependency	Player is near a building.
Setup	Player is in-game near a building.
Procedure	[A01] Click the "Interaction" button.
	[V01] The building-specific panel appears.
Cleanup	-

6.18   GUI.ADC_ADDQ.01

TC_ID	GUI.BLD_BTN.01
Purpose	Allows building construction.
Requirements	2.1.18
Priority	Medium
Estimated Time Needed	3 Minutes
Dependency	Building interaction panel is open.
Setup	Player has sufficient resources.
Procedure	[A01] Click the "Build" button.
	[V01] The building is constructed.
Cleanup	-

6.19   GUI.UPGRD_BTN.01

TC_ID	GUI.UPGRD_BTN.01
Purpose	Allows upgrading buildings.
Requirements	2.1.19
Priority	Medium
Estimated Time Needed	3 Minutes
Dependency	Building panel is open.
Setup	Player has sufficient resources.
Procedure	[A01] Click "Add Question" button from the admin page.
	[V01] The building upgrades.
Cleanup	-

6.20   GUI.DSPL_OPP_INF_PNL.01

TC_ID	GUI.DSPL_OPP_INF_PNL.01
Purpose	Displays opponent's health, stamina, and level.
Requirements	2.1.20
Priority	High
Estimated Time Needed	2 Minutes
Dependency	Player is in a war scene.
Setup	Opponent is visible.
Procedure	[A01] Observe the right upper corner.
	[V01] Opponent's health, stamina, and level are displayed.
Cleanup	-

6.21   GUI.CRFT_ITM_BTN.01

TC_ID	GUI.CRFT_ITM_BTN.01
Purpose	Allows the player to craft an item if sufficient materials are available.
Requirements	2.1.21
Priority	High
Estimated Time Needed	3 Minutes
Dependency	Player has sufficient materials to craft.
Setup	Player is in-game, and the crafting menu is open.
Procedure	[A01] Click the "Craft Item" button of the corresponding item slot.
	[A02] Ensure the player has sufficient materials to craft the item.
	[V01] If materials are sufficient, the item is crafted, and the materials are deducted.
	[V02] If materials are insufficient, the button is inactive or a message is displayed.
Cleanup	-

6.22   GUI.MRKT_PNL.01

TC_ID	GUI.MRKT_PNL.01
Purpose	Displays the market panel with "Sell Item" and "Buy Item" buttons.
Requirements	2.1.22
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	Player is in-game, and the market menu is open.
Setup	Player is near or inside the market.
Procedure	[A01] Open the market panel.
	[A02] Observe that both "Sell Item" and "Buy Item" buttons are visible under their respective items.
	[V01] The items have their respective values/costs displayed.
Cleanup	-

6.23   GUI.SLL_ITM_BTN.01

TC_ID	GUI.ADC_UPDQ.01
Purpose	Allows the player to sell an item in the market.
Requirements	2.1.23
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	Market panel is open, and the player has items in their inventory.
Setup	Player has at least one item in their inventory to sell.
Procedure	[A01] Click "Update Question" button from the admin page.
	[A02] Confirm that the item is removed from the inventory.
	[V01] The material value of the item is added to the player's stock.
Cleanup	-

6.24   GUI.BY_ITM_BTN.01

TC_ID	GUI.BY_ITM_BTN.01
Purpose	Allows the player to buy an item from the market.
Requirements	2.1.24
Priority	Medium
Estimated Time Needed	1 Minutes
Dependency	Market panel is open, and the player has enough material resources.
Setup	Player is in the market and has enough resources to buy an item.
Procedure	[A01] Click the "Buy Item" button of the corresponding item.
	[A02] Ensure the player has enough materials to purchase the item.
	[V01] If sufficient resources are available, the item is added to the inventory, and the cost is deducted from the stock.
	[V02] If insufficient resources are available, the purchase cannot be completed, and a message is displayed.
Cleanup	-

6.25   GUI.DSPL_OPP_INF_PNL.01

TC_ID	GUI.DSPL_OPP_INF_PNL.01
Purpose	Displays opponent's health, stamina, and level information in the war scene.
Requirements	2.1.25
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Player is in a war scene.
Setup	Player is in-game, engaged in combat or war scene.
Procedure	[A01] Observe the right upper corner of the screen.
	[V01] A panel appears showing the opponent's health, stamina, and level information.
Cleanup	-

6.26   PP.TM.01

TC_ID	PP.TM.01
Purpose	Allows the player to build a new building in town.
Requirements	2.2.1
Priority	High
Estimated Time Needed	2 Minutes
Dependency	Town management UI must be active.
Setup	Player is in the Peace Phase with available resources..
Procedure	[A01] Click on an empty plot of land.
	[A02] Select a building from the menu and confirm.
	[V01]] The new building appears and becomes functional..
Cleanup	Save game state after building construction.

6.27   PP.TM.02

TC_ID	PP.TM.02
Purpose	Allows the player to upgrade an existing building.
Requirements	2.2.1
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	The player must own a building that is upgradable.
Setup	Player is in the Peace Phase with required upgrade materials.
Procedure	[A01] Click on an existing building.
	[A02] Select upgrade option.
	[V01] The building level increases and provides enhanced functions.
Cleanup	-

6.28   PP.STP.01

TC_ID	PP.STP.01
Purpose	Allows the player to assign stat points.
Requirements	2.2.2
Priority	High
Estimated Time Needed	2 Minutes
Dependency	The player has available stat points.
Setup	Player is in Peace Phase, character screen is open.
Procedure	[A01] Click on the '+' next to a stat.
	[A02] Confirm allocation.
	[V01] Stat value increases and points are deducted from available pool.
Cleanup	-Close the character screen.

6.29   PP.NPC.01

TC_ID	PP.NPC.01
Purpose	Allows the player to interact with unlocked NPCs.
Requirements	2.2.3
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	The corresponding building for the NPC must be built.
Setup	The corresponding building for the NPC must be built.
Procedure	[A01] Click on the NPC.
	[V01] The NPC dialog or function window opens.
Cleanup	-

6.30   PPP.INV.01

TC_ID	PP.INV.01
Purpose	Accesses the inventory panel from the UI.
Requirements	2.2.4
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Player must be in Peace Phase.
Setup	Player is in-game and in the town.
Procedure	[A01] Click the inventory icon.
	[V01] Inventory opens with item slots visible.
Cleanup	-Close the inventory window.

6.31   PP.INV.02

TC_ID	PP.INV.02
Purpose	Drops an item from the inventory.
Requirements	2.2.4
Priority	Medium
Estimated Time Needed	1 Minutes
Dependency	Player has at least one item in inventory.
Setup	Inventory is open.
Procedure	[A01] Select an item.
	[A02] Click the "Drop" button.
	[V01] Item is removed from inventory and is no longer accessible.
Cleanup	-

6.32   PP.INV.03

TC_ID	PP.INV.03
Purpose	Equips or unequips an item.
Requirements	2.2.4
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	Equipment slot is available.
Setup	Inventory is open, equipment exists.
Procedure	[A01] Click an item to equip.
	[A02] Click again to unequip.
	[V01] Equipped items show stat bonuses.
	[V02] Unequipped items return to inventory.
Cleanup	Close inventory.

6.33   PP.TUT.01

TC_ID	PP.TUT.01
Purpose	Displays the tutorial when Peace Phase begins..
Requirements	2.2.5
Priority	High
Estimated Time Needed	1 Minutes
Dependency	Tutorial option is enabled.
Setup	Game is started with tutorial setting active.
Procedure	[A01] Begin a new game.
	[A02] Roll the dice and observe the result.
	[V01] Tutorial panel appears with instructions.
Cleanup	-Skip or complete tutorial

6.34   PP.TUT.02

TC_ID	PP.TUT.02
Purpose	Allows the player to skip the tutorial.
Requirements	2.2.5
Priority	Low
Estimated Time Needed	1 Minutes
Dependency	Tutorial is active..
Setup	Tutorial is in progress..
Procedure	[A01] Click the "Skip" button.
	[V01] Player exits tutorial and resumes game normally.
Cleanup	Continue to Peace Phase.

6.35   PP.TUT.03

TC_ID	PP.TUT.03
Purpose	Completes tutorial steps and transitions to Peace Phase.
Requirements	2.2.5
Priority	Low
Estimated Time Needed	2 Minutes
Dependency	Tutorial must be active and followed.
Setup	Tutorial is in progress.
Procedure	A01] Follow tutorial instructions step by step.
	[V01] Completion message appears and tutorial ends..
Cleanup	Game continues in Peace Phase.

6.36   WP.G.01

TC_ID	WP.G.01
Purpose	Player gathers resource materials and determines if an encounter occurs by rolling dice.
Requirements	2.3.1
Priority	High
Estimated Time Needed	3 Minutes
Dependency	Player must be in a resource-gathering area.
Setup	Player has access to the dice-rolling mechanic.
Procedure	[A01] Click the "Gather Resources" button or select the gathering option.
	[A02] Roll the dice and observe the result.
	[V01] If the result meets the encounter threshold, an opponent appears.
	[V02] If the result is below the threshold, resources are gathered successfully.
Cleanup	-

6.37   WP.OF.01

TC_ID	TM.TQ.02
Purpose	Determines whether an opponent appears during resource gathering and allows the player to choose to fight or flee..
Requirements	2.3.2
Priority	High
Estimated Time Needed	5 Minutes
Dependency	Player has rolled the dice during the gathering.
Setup	Player is engaged in resource gathering.
Procedure	[A01] Roll the dice and determine if an opponent appears.
	[V01] If an opponent is found, a choice menu (fight/flee) is displayed.
	[V02] If the player selects "fight," combat begins.
	[V03] If the player selects "flee," an escape sequence starts.
Cleanup	-

6.38   WP.GC.01

TC_ID	WP.GC.01
Purpose	Player enters the Colosseum to participate in a tournament..
Requirements	2.3.3
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	Colosseum must be accessible.
Setup	Player is outside the Colosseum.
Procedure	[A01] Select the option to enter the Colosseum.
	[V01] The player is transitioned to the Colosseum scene.
	[V02] Tournament information (stages, rules) is displayed.
Cleanup	-

6.39　WP.SC.01

TC_ID	WP.SC.01
Purpose	Starts combat when the player enters a fight.
Requirements	2.3.4
Priority	High
Estimated Time Needed	3 Minutes
Dependency	The player is in a battle encounter.
Setup	-An opponent is present.
Procedure	[A01] Initiate the combat.
	[V01] Player and opponent take their respective combat stances.
	[V02] Available combat actions (attack, defend) are displayed.
Cleanup	-

6.40　WP.RD.01

TC_ID	WP.RD.01
Purpose	The player rolls dice to determine outcomes in gathering, encounters, and battle.
Requirements	2.3.5
Priority	High
Estimated Time Needed	5 Minutes
Dependency	Dice-rolling mechanics must be implemented.
Setup	Player has an available dice roll.
Procedure	[A01] Roll the dice in different scenarios (gathering, combat, escaping).
	[V01] The result determines material gain, enemy appearance, or success rate.
	[V02] If in combat, dice affects attack, defense, or escape probabilities.
Cleanup	-

6.41   WP.ACW.01

TC_ID	WP.ACW.01
Purpose	The player attacks an opponent using the current weapon, and damage is calculated correctly.
Requirements	2.3.6
Priority	High
Estimated Time Needed	5 Minutes
Dependency	Player is in combat and has a weapon equipped.
Setup	Player has initiated a battle.
Procedure	[A01] Select the "Attack" option.
	[V01] Damage calculation applies correctly based on weapon stats.
	[V02] Opponent's health reduces accordingly.
Cleanup	-

6.42   WP.AS.01

TC_ID	WP.AS.01
Purpose	The player attacks using a spell, consuming mana, and applying effects correctly.
Requirements	2.3.7
Priority	High
Estimated Time Needed	3 Minutes
Dependency	Player has enough mana and a usable spell.
Setup	Player is in combat.
Procedure	[A01] Select a spell attack.
	[V01] Mana is consumed correctly.
	[V02] Spell effects (damage, debuffs, etc.) apply to the opponent.
Cleanup	-

6.43   WP.M.01

TC_ID	WP.M.01
Purpose	The player attacks using a spell, consuming mana, and applying effects correctly.
Requirements	2.3.8
Priority	High
Estimated Time Needed	3 Minutes
Dependency	Player has enough mana and a usable spell.
Setup	Movement of first person is scripted.
Procedure	[A01] Select a spell attack.
	[V01] Mana is consumed correctly.
	[V02] Spell effects (damage, debuffs, etc.) apply to the opponent.
Cleanup	-

6.44   WP.M.02

TC_ID	WP.M.02
Purpose	Player moves within the combat area for strategic positioning.
Requirements	2.3.8
Priority	Medium
Estimated Time Needed	3 Minutes
Dependency	Combat scene must allow movement.
Setup	Player is in combat.
Procedure	[A01] Move left or right using the movement keys or buttons.
	[V01] Player's position updates accordingly.
	[V02] No unintended movement restrictions occur.
Cleanup	-

6.45 WP.D.01

TC_ID	WP.D.01
Purpose	The player takes defensive actions to reduce incoming damage.
Requirements	2.3.9
Priority	High
Estimated Time Needed	3 Minutes
Dependency	Player is in combat.
Setup	Opponent is preparing to attack.
Procedure	[A01] Select the "Defend" action.
	[V01] Incoming damage is reduced based on the defense calculation.
	[V02] Defensive stance is visually represented.
Cleanup	-

6.46 WP.ET.01

TC_ID	WP.ET.01
Purpose	Ends the player's turn when actions are used up or manually ended.
Requirements	2.3.10
Priority	Medium
Estimated Time Needed	3 Minutes
Dependency	Turn-based combat system must be implemented.
Setup	Player is in combat
Procedure	[A01] Use all available actions or manually end turn.
	[V01] Control shifts to the opponent.
	[V02] UI updates to reflect turn transition.
Cleanup	-

6.47   WP.FP.01

TC_ID	WP.FP.01
Purpose	Player completes the battle phase and either advances or returns to the city.
Requirements	2.3.11
Priority	High
Estimated Time Needed	3 Minutes
Dependency	The player has won or lost the combat.
Setup	Player is at the end of a battle
Procedure	[A01] If victorious, select to advance or return to the city.
	[V01] If advancing, next battle phase loads.
	[V02] If returning, resources are correctly added.
Cleanup	-

6.48   AB.AC.01

TC_ID	AB.AC.01
Purpose	The AI correctly accesses the PP and WP functions required to initiate a combat phase.
Requirements	2.4.1
Priority	High
Estimated Time Needed	2 Minutes
Dependency	
Setup	The AI system is active and ready to initiate combat.
Procedure	[A01] Make sure the AI works in a combat scenario.
	[A02]Trigger a combat phase where AI must access PP and WP functions.
	[V01] Verify that the AI correctly retrieves and implements the required functions.
Cleanup	Reset AI combat phase parameters.

6.49   AB.MRD.CP.01

TC_ID	AB.MRD.CP.01
Purpose	The AI successfully determines its strategy by taking into account the player's combat history.
Requirements	2.4.2.1
Priority	Medium
Estimated Time Needed	3 Minutes
Dependency	Previous combat records must be available.
Setup	The AI needs to have access to historical data regarding the player's past conflicts.
Procedure	[A01] Start a new combat phase where AI must decide its strategy..
	[A02]Have the AI pull the player's past battle logs.
	[V01] Verify that the AI adjusts its strategy based on historical data.
Cleanup	Clear AI decision-making logs for the next test.

6.50   AB.MRD.AP.01

TC_ID	AB.MRD.CP.01
Purpose	Artificial intelligence accurately analyzes the current situation, taking into account the characteristics of both the player and the opponent.
Requirements	2.4.2.2
Priority	High
Estimated Time Needed	3 Minutes
Dependency	Player and opponent attributes must be correctly initialized.
Setup	AI is in an active combat scenario with access to opponent stats.
Procedure	[A01] The AI loads the player's and opponent's characteristics.
	[A02]The AI processes these attributes and determines an appropriate combat action.
	[V01] Verify that AI chooses an action based on real-time analytics.
Cleanup	Reset AI decision-making for a new battle.

6.51   AB.MRD.AP.02

TC_ID	AB.MRD.AP.02
Purpose	The AI underestimates the player's equipment, which leads to poor decisions.
Requirements	2.4.2.2
Priority	High
Estimated Time Needed	3 Minutes
Dependency	AI decision-making process should be functional.
Setup	AI is active in combat, but does not properly evaluate player equipment.
Procedure	[A01] Initiate a battle scenario where AI must evaluate player stats.
	[A02]Make the AI incorrectly judge the effect of the player's equipment.
	[V01] Observe if AI selects a suboptimal strategy due to incorrect equipment analysis.
Cleanup	Adjust AI evaluation parameters for the next test.

6.52   AB.MRD.CF.01

TC_ID	AB.MRD.CF.01
Purpose	AI successfully predicts the future consequences of its actions.
Requirements	2.4.2.3
Priority	Low
Estimated Time Needed	2 Minutes
Dependency	-
Setup	AI is active in combat with prediction logic in place.
Procedure	[A01] AI performs an action based on predicted future outcomes.
	[A02] AI evaluates potential competitor reactions.
	[V01] Verify AI selects an action that aligns with the predicted scenario
Cleanup	Clear AI decision logs.

6.53   AB.MM.01

TC_ID	AB.MM.01
Purpose	The AI may make an unexpected mistake during combat, for example using an attack that is inappropriate for the situation.
Requirements	2.4.3
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	-
Setup	AI is active in combat and has multiple action choices.
Procedure	[A01] AI evaluates possible actions based on the combat scenario.
	[A02] AI selects an inappropriate attack action
	[V01] Verify that the AI performs an action that a human might misinterpret.
Cleanup	Reset AI for the next battle.

6.54   AB.MM.02

TC_ID	AB.MM.02
Purpose	The AI makes human-like mistakes, such as misjudging enemy capabilities.
Requirements	2.4.3
Priority	Medium
Estimated Time Needed	2 Minutes
Dependency	AI decision-making must be functional.
Setup	AI is in an active combat phase with access to opponent stats.
Procedure	[A01] AI analyzes the opponent's stats.
	[A02] AI incorrectly estimates the opponent's attack power.
	[V01] Verify AI misjudges the opponent, leading to a tactical error.
Cleanup	Reset AI evaluation logic.