



**ÇANKAYA UNIVERSITY
FACULTY OF ENGINEERING
COMPUTER ENGINEERING DEPARTMENT**

Test Plan, Test Design Specifications and Test Cases
Version 1

CENG 408
Innovative System Design and Development II

CAMPUS KART RACING GAME

Prepared by

*Ozan Çetiner
Esra Şahin
Buğra Doğan
Nurettin Cem Altunbulduk*

Advisor: *Murat Saran*

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1. INTRODUCTION

1.1 Version Control

Version No	Description of Changes	Date
1.0	First Version	Mar 30, 2021

1.2 Overview

The user interface, controls and game mechanics specified in the SRS document in this document will be tested.

1.3 Scope -ESRA

This document includes use cases, test design stages and the operation of test cases. The information about the features of CKRG to be tested such as login and add user are explained in detail in the second chapter. The features that will not be tested are mentioned in chapter 3. The rules of the success rate in the test are explained in the 4th section, Item Pass / Fail Criteria. Test design specifications are in chapter 6.

1.4 Terminology

Acronym	Definition
CKRG	Campus Kart Racing Game
SRS	Software Requirements Specification
SDD	Software Design Document
OS	Operating System
PC	Personal Computer
TP	Test Plan
TDS	Test Design Specifications
AI	Artificial Intelligence
GUI	Graphical User Interface
SPM	Single Player Mode
MPM	Multi Player Mode
PUN	Photon Networking
OPT	Options
NPC	Non Playable Character

CST	Customization
TC	Test Case

2. FEATURES TO BE TESTED

All features such as GUI, Single Player Mode, Multi Player Mode will be tested respectively. Details about these features can be found in Test Design Specifications that is chapter 6.

2.1 Graphical User Interface (GUI)

The graphical user interface is used in this project and consists of four main parts. These are single player mode, multiplayer mode, customization and options. The player interacts with the game through the interface. The interface includes components such as text, button, input area.

2.2 Single Player Mode (SPM)

This part includes test cases and test plan of Single Player Mode. The single player mode has objects like NPC and interfaces like pause, resume, main menu. These requirements will be tested later in the document.

2.3 Multi Player Mode (MPM)

This part includes test cases and test plan of Multi Player Mode. The multi player mode has objects like other players and interfaces like main menu. These requirements will be tested later in the document.

2.4 Customization (CST)

This part includes test cases and test plan of Customization. In this section, users will be able to customize their vehicle. These requirements will be tested later in the document.

2.5 Options (OPT)

This part includes test cases and test plan of Options. In this section, users will be able to test features such as resolution, texture quality, sound on / off. These requirements will be tested later in the document.

3. FEATURES NOT TO BE TESTED

Multiplayer mode has not been tested yet because of the paid server.

4. ITEM PASS/FAIL CRITERIA

All medium and high priority criterias that pass and fail in the project, explained briefly. Details about these criterias can be found in the following part.

4.1 Pass/Fail Table

Item to Test	Feature	Expected Input	Expected Output	Pass / Fail
Single Player Mode	Players can play the game in single player mode.	Players choose the game mode on the main menu.	The game must perform the selected mode without any problem.	Pass
Multiplayer Mode	Players can play the game in multiplayer mode.	Players choose the game mode on the main menu.	The game must perform the selected mode without any problem.	- (Not been tested yet because of server need)
Customization	Players can customize their car.	Players tap “customize” button on the menu.	The customization screen must be displayed without any problem.	Pass
Options	Players can make custom settings with this item.	Players tap “options” button on the menu.	The options/settings screen must be displayed without any problem.	Pass
Exit	Players can leave the game with this item.	Players tap “exit” button on the menu.	Players must exit the game without any problem.	Pass
Pause	Players can stop the game with this item.	Players tap “pause” button on the game screen.	The game must be stopped and displayed the “continue” choice on the game screen without any problem.	Pass

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Continue	Players can continue to stopped game.	Players tap “continue” button on the game screen.	The stopped game must be continued without any problem.	Pass
Music On/Off	Players can deactivate or activate music of the game.	Players tap “music on/off “ button on the menu.	The music must be turned on and off without any problem.	Pass
Sound On/Off	Players can deactivate or activate sound of the game.	Players tap “sound on/off “ button on the menu.	The sound must be turned on and off without any problem.	Pass
Select Color	Players can change the color of car.	Players tap “select color“ button on the menu.	The select color section must be displayed without any problem.	Pass
Change Part	Players can change, add car parts.	Players tap “change part“ button on the menu.	The change part section must be displayed without any problem.	Pass
Change Nickname	Players can change their nickname on the game screen.	Players tap “change nickname“ button on the menu.	The change nickname section must be displayed without any problem and must be allowed the users to change their nicknames.	Pass

- 91.6% of the test cases are executed
- 91.6% of the test cases passed
- All High and Medium Priority test cases passed except Multiplayer Game Mode because of paid server needed. This item will be tested in the following times.

5. REFERENCES

- [1] CKRG_SRS_V1.0, December 12, 2020. Available:
[https://github.com/CankayaUniversity/ceng-407-408-2020-2021-Cross-Platform-Campus-Kart-Racing-Game/wiki/Software-Requirements-Specification-\(SRS\)](https://github.com/CankayaUniversity/ceng-407-408-2020-2021-Cross-Platform-Campus-Kart-Racing-Game/wiki/Software-Requirements-Specification-(SRS)) [Accessed: 1-Apr-2021]
- [2] CKRG_SDD_V1.0, December 25, 2020. Available:
[https://github.com/CankayaUniversity/ceng-407-408-2020-2021-Cross-Platform-Campus-Kart-Racing-Game/wiki/Software-Design-Document-\(SDD\)](https://github.com/CankayaUniversity/ceng-407-408-2020-2021-Cross-Platform-Campus-Kart-Racing-Game/wiki/Software-Design-Document-(SDD)) [Accessed: 1-Apr-2021]

6. TEST DESIGN SPECIFICATIONS

6.1 Graphical User Interface (GUI)

6.1.1 Subfeatures to be tested

6.1.1.1 Play Single Player Mode (GUI.PSP.BTN)

Players play the single player mode by clicking this button.

6.1.1.2 Play Multi Player Mode (GUI.PMP.BTN)

Players play the multi player mode by clicking this button.

6.1.1.3 Customization (GUI.CST.BTN)

Players can open the customization panel with this button.

6.1.1.4 Options (GUI.OPT.BTN)

Players can open the game settings panel with this button.

6.1.1.5 Exit (GUI.EXT.BTN)

Players can exit the game.

6.1.1.6 Pause (GUI.PAU.BTN)

Players can pause the game if it is in the single player mode.

6.1.1.7 Continue (GUI.CNT.BTN)

Players can continue the game if it is in the single player mode.

6.1.1.8 Music On/Off Button (GUI.MSC.BTN)

Players can turn the music sound on or off with the button.

6.1.1.9 Sound On/Off Button (GUI.SND.BTN)

Players can turn the music sound(car etc.) on or off with the button.

6.1.1.10 Select Color Button (GUI.CLR.BTN)

Players use it to change the vehicle color.

6.1.1.11 Change Part Button (GUI.CGN.BTN)

Players can install new parts on the vehicle.

6.1.1.12 Change Nickname Button (GUI.NCK.BTN)

Players can set their nickname.

6.1.2 Test Cases

TC ID	Requirements	Priority	Scenario Description
GUI.PSP.BTN	3.2.1	H	Select “Play Single Player“ button. After selecting, “Set Nick Name“ will be displayed
GUI.PMP.BTN	3.2.2	H	Select “ Play Multi Player “ button. After selecting, “Game Lobby“ will be displayed
GUI.CST.BTN	3.2.3	H	Select “ Customize “ button. After selecting, “Change Color and Change Part“ will be displayed
GUI.OPT.BTN	3.2.4	H	Select “ Options “ button. After selecting, “Game Settings Panel“ will be displayed
GUI.EXT.BTN	3.2.5	H	Select “ Exit“ button. After selecting, the game will be closed.

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GUI.PAU.BTN	3.2.6	M	<i>Select “ Pause“ button. Pause the game if it is in the single player mode.</i>
GUI.CNT.BTN	3.2.7	M	<i>Select “ Continue“ button. Continue the game if it is in the single player mode.</i>
GUI.MSC.BTN	3.2.8	L	<i>Select “ Music On/Off“ button. After selecting, the music will be closed or opened</i>
GUI.SND.BTN	3.2.9	L	<i>Select “ SoundOn/Off“ button. After selecting, the sound effects will be closed or opened</i>
GUI.CLR.BTN	3.2.10	H	<i>Select “ Select Color “ button. After selecting, the car color effects will change.</i>
GUI.CGN.BTN	3.2.11	H	<i>Select “ Change Parts “ button. After selecting, the part will be added to the vehicle.</i>
GUI.NCK.BTN	3.2.12	H	<i>Select “ Set Nickname “ button. After selecting, the player has a nickname.</i>

7. Detailed Test Cases

7.1 GUI.PSP.BTN

TC ID	GUI.PSP.BTN
Purpose	It is to check whether players play single player mode or not without any problem
Requirements	3.2.1
Priority	High
Estimated Time Needed	3 Minutes
Dependency	GUI.NCK.BTN should be passed
Setup	Non-playable character should be created
Procedure	[A01] Open the game
	[A02] Select “Play Single Player” button
	[A03] Select “Set Nick Name”
	[V01] Observe that players can play with non-playable character on selected mode
Cleanup	Exit single player mode

7.2 GUI.PMP.BTN

TC ID	GUI.PMP.BTN
Purpose	It is to check whether players play multi player mode or not without any problem
Requirements	3.2.2
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	None
Setup	The server must be installed.Also,an internet connection is required.
Procedure	[A01] Open the game
	[A02] Select “Play Multi Player” button
	[A03] Select “Game Lobby” button

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	[V01] Observe that players can play multi player mode with other players without any problem
Cleanup	Exit multi player mode

7.3 GUI.CST.BTN

TC_ID	GUI.CST.BTN
Purpose	It is to check whether the vehicle is customized or not with desired customization
Requirements	3.2.3
Priority	High.
Estimated Time Needed	5 Minutes
Dependency	GUI.CLR.BTN and GUI.CGN.BTN should be passed
Setup	None
Procedure	[A01] Open the game
	[A02] Select “Customize” button
	[A03] Select “Change Color and Change Part” button
	[A04] Customize the vehicle
	[V01] Observe that the vehicle is customized with desired customization
Cleanup	Exit customize screen

7.4 GUI.OPT.BTN

TC_ID	GUI.OPT.BTN
Purpose	It is to check whether the settings such as resolution,texture quality are done or not without any problem
Requirements	3.2.4
Priority	High

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Estimated Time Needed	3 Minutes
Dependency	None
Setup	None
Procedure	[A01] Open the game
	[A02] Select “Options” button
	[A03] Do the necessary settings such as resolution,texture quality
	[V01] Observe that the settings such as texture quality,resolution are done by players
Cleanup	Exit options screen

7.5 GUI.EXT.BTN

TC ID	GUI.EXT.BTN
Purpose	It is to check whether players exit the game or not without any problem
Requirements	3.2.5
Priority	High
Estimated Time Needed	2 Minutes
Dependency	None
Setup	None
Procedure	[A01] Open the game
	[A02] Select “exit” button
	[V01] Observe that players exit the game
Cleanup	Exit the game

7.6 GUI.PAU.BTN

TC ID	GUI.PAU.BTN
Purpose	It is to check whether the game is stopped by players or not without any problem
Requirements	3.2.6
Priority	Medium

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Estimated Time Needed	5 Minutes
Dependency	GUI.PSP.BTN should be passed
Setup	None
Procedure	[A01] Open the game
	[A02] Open single player mode
	[A03] Tap “pause” button on game screen
	[V01] Observe that the game is stopped by players on single player mode
Cleanup	Exit single player mode

7.7 GUI.CNT.BTN

TC ID	GUI.CNT.BTN
Purpose	It is to check whether the game that is stopped can be continued by players or not without any problem
Requirements	3.2.7
Priority	Medium
Estimated Time Needed	5 Minutes
Dependency	GUI.PAU.BTN should be passed
Setup	None
Procedure	[A01] Open the game
	[A02] Open “Play Single Player” button
	[A03] Tap “pause” button on game screen
	[A04] Tap “continue” button on game screen
	[V01] Observe that the stopped game is continued by players on single player mode
Cleanup	Exit single player mode

7.8 GUI.MSC.BTN

TC ID	GUI.MSC.BTN
Purpose	It is to check whether the music is opened or not or is closed or not without any problem
Requirements	3.2.8
Priority	Low
Estimated Time Needed	3 Minutes
Dependency	GUI.OPT.BTN should be passed
Setup	None
Procedure	[A01] Open the game
	[A02] Select “music on/off” button
	[V01] Observe that the music is opened or closed by players
Cleanup	Return the game menu

7.9 GUI.SND.BTN

TC ID	GUI.SND.BTN
Purpose	It is to check whether the music is opened or not or is closed or not without any problem
Requirements	3.2.9
Priority	Low
Estimated Time Needed	3 Minutes
Dependency	GUI.OPT.BTN should be passed
Setup	None
Procedure	[A01] Open the game
	[A02] Select “sound on/off” button
	[V01] Observe that the sound is opened or closed by players
Cleanup	Return the game menu

7.10 GUI.CLR.BTN

TC ID	GUI.CLR.BTN
Purpose	It is to check whether the car color is changed by player or not without any problem
Requirements	3.2.10
Priority	High
Estimated Time Needed	3 Minutes
Dependency	None
Setup	None
Procedure	[A01] Open the game
	[A02] Select “Customize” button
	[A03] Select “Change Color” button
	[A04] Select the color
	[V01] Observe that the car color is changed by player
Cleanup	Return the game menu

7.11 GUI.CGN.BTN

TC ID	GUI.CGN.BTN
Purpose	It is to check whether the car part is changed by player or not without any problem
Requirements	3.2.11
Priority	High
Estimated Time Needed	3 Minutes
Dependency	None
Setup	None
Procedure	[A01] Open the game
	[A02] Select “Customize” button
	[A03] Select “Change Part” button
	[A04] Select the part
	[V01] Observe that the part is changed by player

Cleanup	Return the game menu
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7.12 GUI.NCK.BTN

TC_ID	GUI.NCK.BTN
Purpose	It is to check whether nickname of the player is changed or not without any problem
Requirements	3.2.12
Priority	High
Estimated Time Needed	3 Minutes
Dependency	None
Setup	None
Procedure	[A01] Open the game
	[A02] Open “Play Single Player” button
	[A03] Tap “set nickname” button
	[A04] Create a new nickname
	[V01] Observe that the nickname of the player is changed
Cleanup	Return the game menu