FVS Test Plan

1   TEST PLAN IDENTIFIER   TEST3

2   RELATED DOCUMENTS

[1]   Specification Document (Assessment 1 Deliverable)
   ○ Requirements
   ○ Project design
   ○ Project plan
[2]   Assessment 2 Test Plan
[3]   IEEE. "Test Plan Outline (IEEE 829 FORMAT)". Available:
http://www.computing.dcu.ie/~davids/courses/CA267/ieee829mtp.pdf

3   INTRODUCTION

This is the second master test plan for the Trains Across Europe (TaxE) game. This plan will address the features implemented in the second iteration of the game and, where applicable, their effects on those implemented in the first iteration.

4   SOFTWARE RISK ISSUES

We have relied on libraries from both the Gradle and LibGDX frameworks to ease the implementation of many of the graphical aspects of the game. We are therefore unable to test details within these external libraries.

5   FEATURES TO BE TESTED

The following is a list of the features to be focused on during this phase of testing, as per the specified requirements:

1. Obstacles
2. Scoring
3. Quantifiable goals

6   FEATURES NOT TO BE TESTED

Features that remain unchanged from the first iteration of the game will likely not feature in this test report, as we will make the assumption that they have already been adequately tested. Additionally any features to be implemented in future iterations will not be tested.

7   APPROACH

We will make use of a mixture of testing techniques in order to test comprehensively:

- Unit testing will be performed to test specific code where possible; we will make use of the JUnit testing framework supported by both the Eclipse and IntelliJ IDEs. This will be done by the developer(s) responsible for each part of the code being tested.

- System testing will be performed to test the system more generally to make sure that the requirements are met from a user standpoint, this will be achieved by running the application and performing tests manually. This will be done by our system testing team.

- Whilst not performing integration tests separately, the majority of our tests can will also be considered as integration tests. We will ensure that our newly implemented features do not break existing parts of the project.

- Due to a very tight time scale we will not be performing acceptance testing.

8   ITEM PASS CRITERIA

- The unit testing will be complete once all of the JUnit tests have passed, and we can therefore expect a working implementation.

- We will class system testing as complete once we are confident that all of the requirements that we set out to test in this iteration are fulfilled consistently.

10   SCHEDULE

The timescale for this iteration of the project is 4 weeks and the testing must also be completed within this timescale. Testing will be performed alongside implementation, however in most cases it will only be documented afterwards due to time constraints.
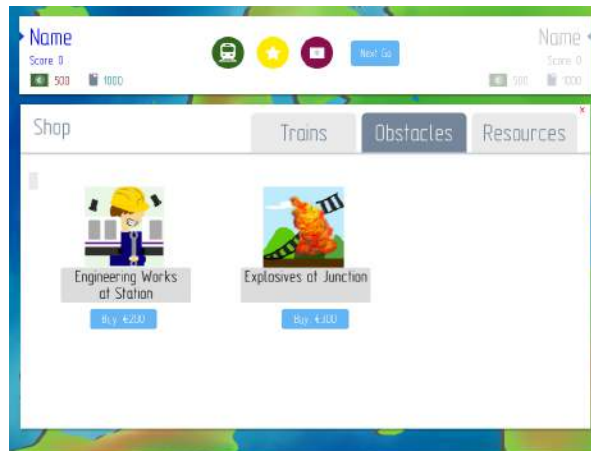
EVIDENCE OF TESTING

1   UNIT TESTING

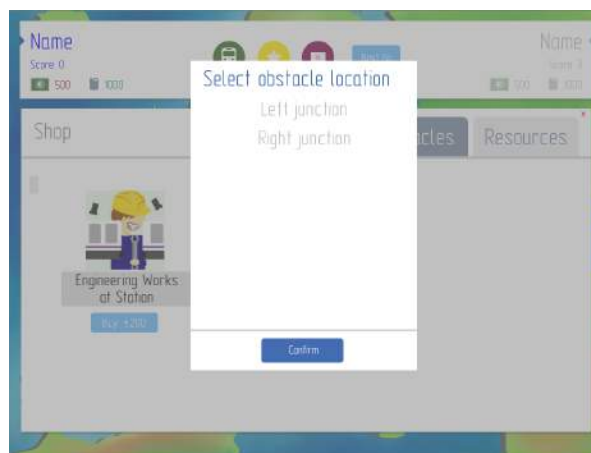| Test name	Test Description	Result
testScore()	Test scores are being applied to players by using a scoreless player and then completing a goal associated with them. This confirms that functioning objectives have been added, in addition to system testing.	Pass
winTest()	Test win code is working by applying a winning score to the player and then running a copy of the code which determines if the player has won. This confirms that new win	Pass

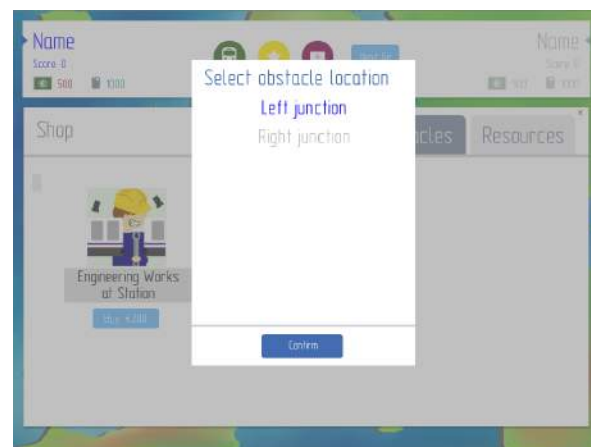|	detection functions correctly.	
testPlaceObstacle()	Create and place an obstacle at Paris, and then ensure the game is reporting the presence of the obstacle and that it is of the correct type. This confirms that new code placing and detecting obstacles works correctly, in addition to system testing.	Pass
testTurnResources()	Giving the current player an additional 5 fuel and 5€ at the start of their turn.	Pass

2   SYSTEM TESTING

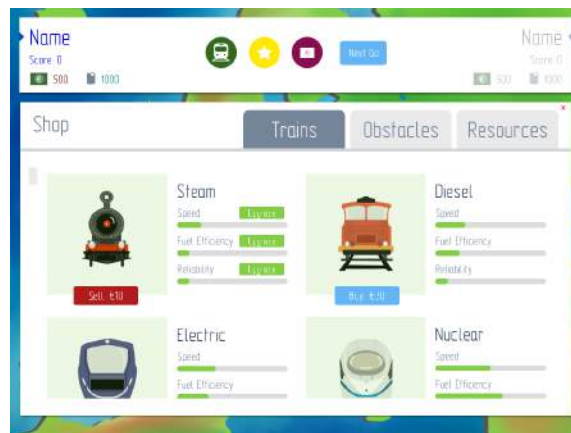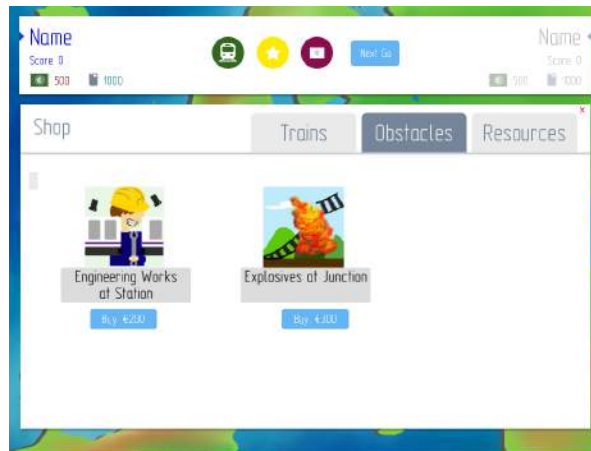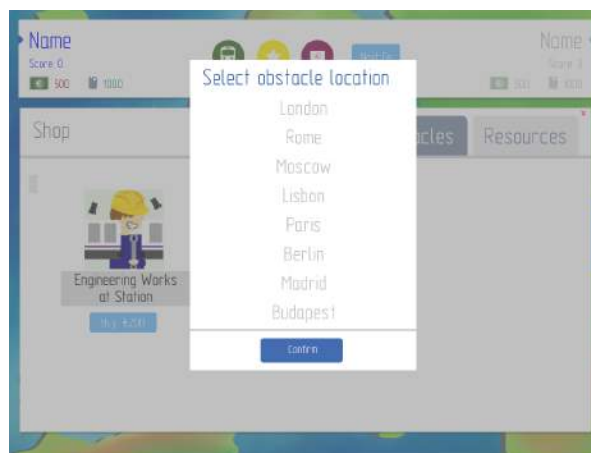| Test ID	Test Description	Result
1	**Placing a junction obstacle** ● Open the shop pane [1] ● Select obstacles tab [2] ● Click buy "Explosives at junction" [3] ● Pick a junction to place it at [4] ● The junction now shows the obstacle at it [5]	Pass
	Evidence	
	[1]	

[2]

[3]

[4]

[5]

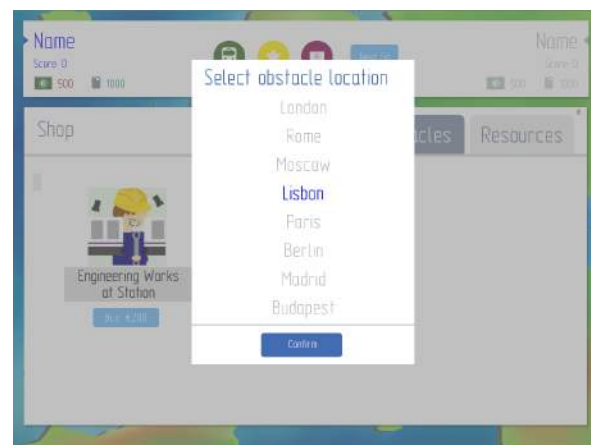| Test ID	Test Description	Result
2	**Placing a station obstacle** ● Open the shop pane [1] ● Select obstacles tab [2] ● Click buy "Engineering works at station" [3] ● Pick a station to place it at [4] ● The station now shows the obstacle at it [5]	Pass

<div align="center">Evidence</div>

[1]

[2]

[3]

[4]

[5]

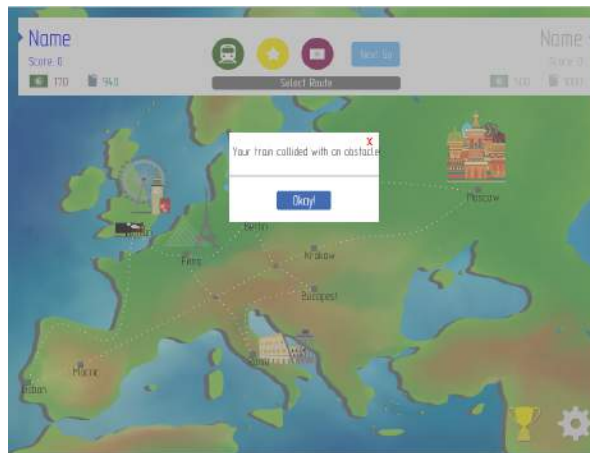| Test ID	Test Description	Result
3	**Junction obstacle warning message** ● Route train through a junction with an obstacle [1] ● Click "Confirm route" [2] ● Warning message appears [3]	Pass

Evidence

[1]

[2]

[3]

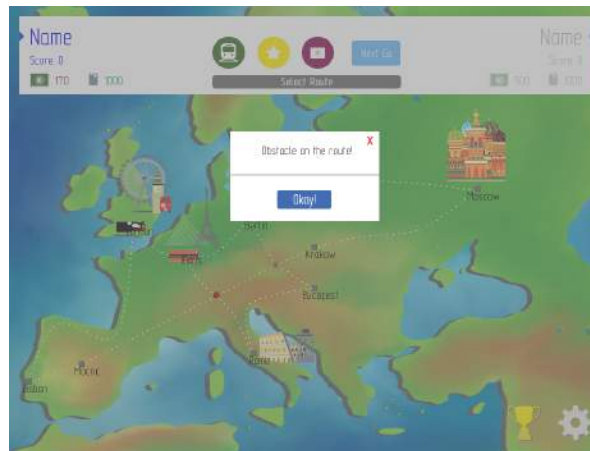| Test ID	Test Description	Result
4	**Junction obstacle working as intended** ● Route train through a junction with an obstacle ● Train collides with obstacle and is destroyed ● Message appears telling you your train collided	Pass
Evidence		

[1]

[2]

[3]

Test ID	Test Description	Result
5	**Quantifiable goals have scores** ● Open goals screen [1]	Pass
	Evidence	

Goals | Current | Incomplete | Complete

Transport a train to Lisbon — 417pts — €417
Complete within 0/20 turns — 200pts — €50
Travel via Rome — 756pts — €0

Transport a train between Paris and Krakow — 346pts — €277
Complete within 0/13 turns — 130pts — €50
Travel via Rome — 480pts — €0

Transport a train to London — 200pts — €200
Complete within 0/10 turns — 100pts — €50
Travel via Lisbon — 50pts — €0

[1]

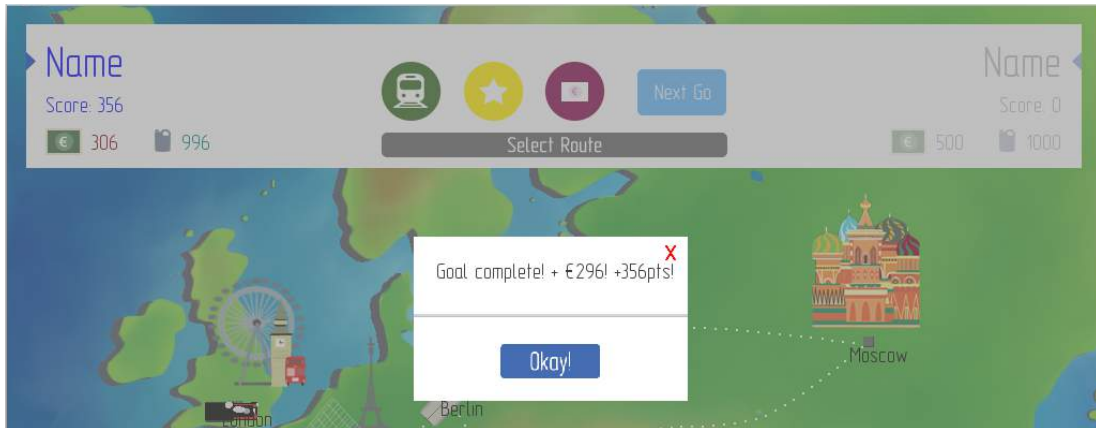| Test ID	Test Description	Result
6	**Player's score incremented by correct amount upon completing a goal** ● Check player stats before [1] ● Open goals [2] ● Complete a goal & player's score incremented correctly [3]	Pass
	Evidence	

Name
Score: 0
€ 10   🎒 1000

[1]

Goals | Current | Incomplete | Complete

Transport a train to Berlin — 246pts — €246
Complete within 0/12 turns — 120pts — €50
No Objective — 0pts — €0

[2]

[3]

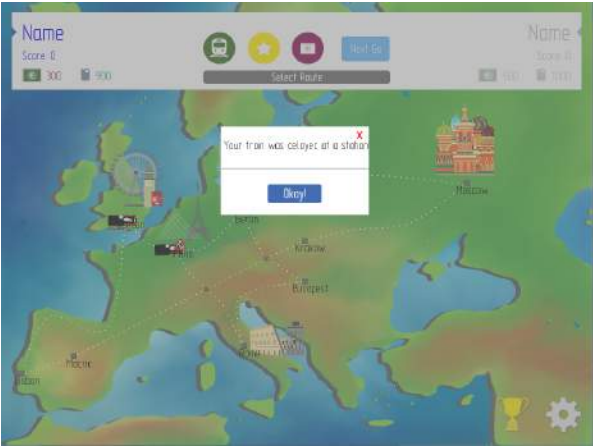| Test ID	Test Description	Result
7	**Station obstacle warning message** ● Route train through station with obstacle on it [1] ● Warning message appears [2]	Pass
	Evidence	

[1]

[2]
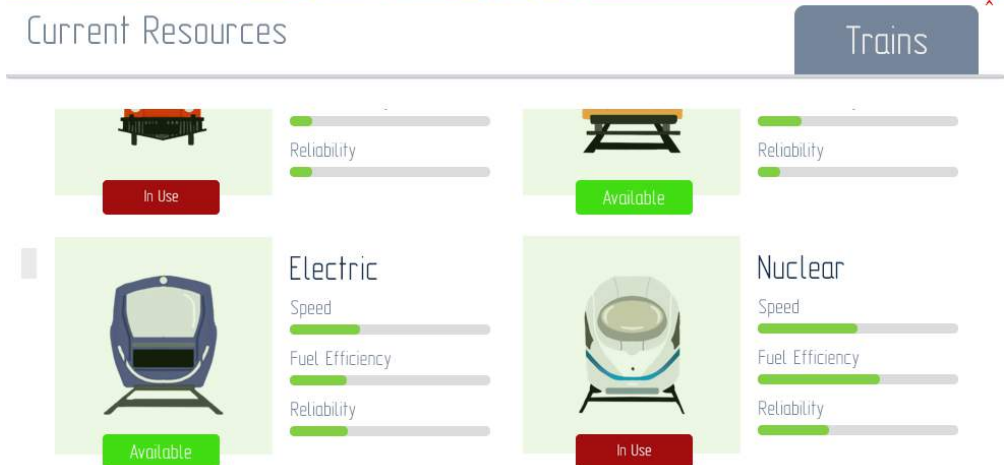
Test ID	Test Description	Result
8	**Station obstacle working as intended** ● Route train through a station with an obstacle at [1] ● Train gets delayed by a turn at the station [2]	Pass

Evidence

[1]

[2]

Test ID	Test Description	Result
9	**Resize disabled** ● Attempt to resize window [1]	Pass

Evidence

[1]

Test ID	Test Description	Result
10	**Current resources in use / available working** ● Check currently owned trains by player [1] ● Compare against current resources screen [2]	Pass

Evidence

[1]

[2]

Test ID	Test Description	Result
11	**Name entry working as desired inc. shortcut** ● Enter player 1 name [1] ● Use tab key to switch to player 2 name entry [2]	Pass

Evidence

[1]

Player 1		Player 2	
Test1		Test2	

[2]

Test ID	Test Description	Result
12	**Carriages successfully removed** ● Route a train and observe lack of carriages [1]	Pass
	Evidence	

[1]

Test ID	Test Description	Result
13	**New routing buttons functioning** ● Observe new 'select route' button [1] ● Click 'select route' and observe cancel and confirm buttons and that routing has begun [2] ● Cancel a route [3] and confirm a route [3]	Pass
	Evidence	

[1]

[2]

[3]

Test ID	Test Description	Result
14	**Euro currency showing up** ● Check goals screen [1] ● Check shop [2]	Pass

Evidence

[1]

Transport a train to Berlin
Complete within 4/20 turns
Travel via Lisbon

402pts   €402
160pts   €50
2014pts   €0

Steam
Speed   Upgrade
Fuel Efficiency   Upgrade
Reliability   Upgrade
Sell: €5

Diesel
Speed
Fuel Efficiency
Reliability
Buy: €30

[2]

Test ID	Test Description	Result
15	**Now able to place resources in Krakow** ● Select Krakow in location menu when placing train [1] ● Resource placed at Krakow [2]	Pass

Evidence

Select train start location

Berlin
Budapest
Krakow
Lisbon
London
Madrid
Moscow
Paris
Rome

Confirm

[1]

Krakow

[2]

3 BUG REPORT

Bug ID	Bug Description
1	**Train reliability** The reliability of trains is so low that they break down nearly every turn, resulting in poor game play
Resolution	
Trains' reliabilities scaled up in the Train class to allow for a free flow of gameplay.	
Bug ID	Bug Description
2	**Poor game performance** Screens taking a long time to render on a fairly unintensive game, affecting gameplay
Resolution	
It was found that fonts were being generated multiple times per scene, this was changed so that fonts are stored and memoized after being generated, which has improved rendering times and playability.	
Bug ID	Bug Description
3	**Bad goal generation** Goals being generated to send a train from a station to the same station, e.g. Berlin to Berlin.
Resolution	
The goal generation algorithm was adjusted to stop this from happening and goals are now only generated to send a train from one station to a different station.	
Bug ID	Bug Description
4	**Multiple dialogue bug** Upon multiple dialogues opening the background of the game will go a blood red colour, as a oppose to the normal transparent view of the game behind.
Resolution	
Unresolved due to difficulties determining the cause and relatively rare occurrence	