COS 214 Project

Project Summary and Reports



**Julianna Venter, u20433752 (Team Leader)**

**Ronin Brookes, u19069686**

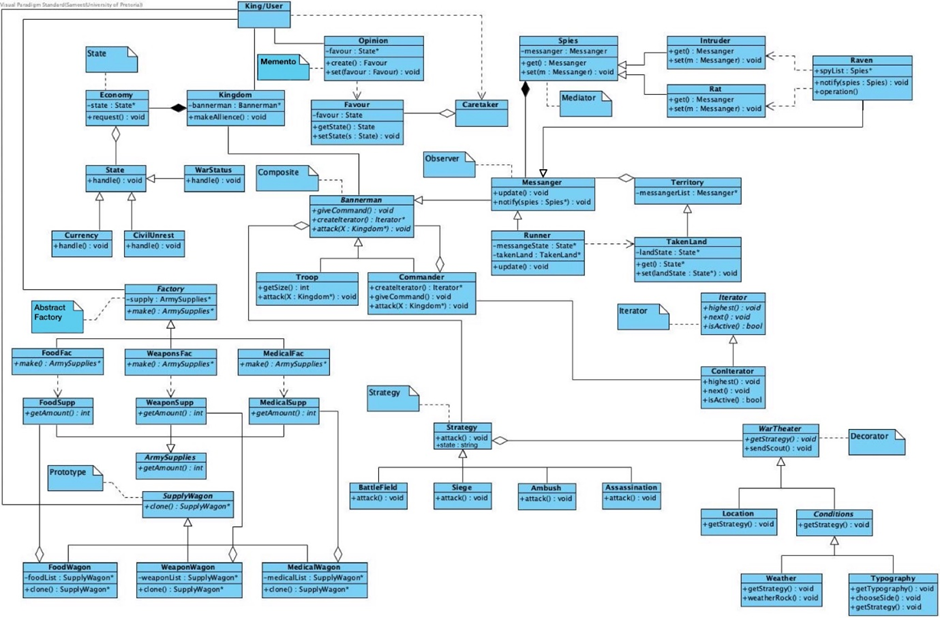
**Sameet Keshav, u21479373**

**Keabetswe Mothapo, u21543462**

**Morgan Bentley, u18103007**

**Thapelo Thoka, u21499749**

# Task 1: Pre-initial design

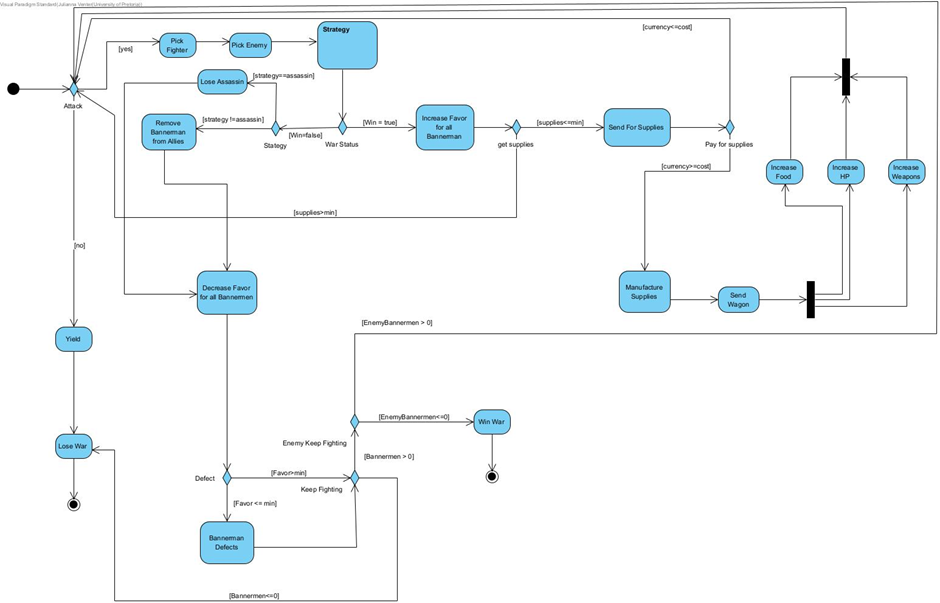


# Task 2:

# Functional Requirements:

* Two bannermen lists must be created
* A user must be able to choose to attack
* If a user doesn’t attack they are forced to yield and lose the war
* If the user attacks they must be able to pick their attacking Bannerman
* If a user attacks they must be able to pick who they are attacking
* A user must be able to choose their attack strategy
* A user will win or lose their war based on a mix of choices and random chance
* A user must be able to choose to send for supplies if their bannerman survives the battle
* A user will win the battle if the enemy bannermen are all dead
* A user will lose the battle if their bannermen are all dead, or they run out of money

# Activity Diagrams:



Activity diagram for the main functionality from the user’s perspective.

# 

# 

Activity diagram for the strategy classes.

# Patterns:

## 1. Memento:

Saving the states of defected allies, and restoring the ones who return.

## 2. State:

State of the kingdom’s economy and upkeep during the war.

## 3. Abstract Factory:

Manufacturing of food, weaponry, and medical supplies.

## 4. Prototype:

Supply wagons comprising food, weaponry and medical supplies. To be cloned and sent out when a successful troop returns from a battle.

## 5. Mediator:

Checking if the economy is healthy enough to support further warfare.

## 6. Observer:

Checks if supplies are needed for troops, sends for a supply wagon if needed.

## 7. Strategy:

Different types of battle to choose from when engaging the enemy.

## 8. Composite:

Comprises the Bannermen (allied kingdoms), the troops and commanders of these allies.

## 9. Iterator:

Controls line of command in troops.

## 10. Decorator:

Controls and generates war theater, influencing outcome of battle.

# Class diagrams:

# Initial Design:

# Sequence Diagrams:

# Communication Diagrams:

# State Diagrams:

# 

# Object Diagrams:

# Task 3:

Implementation included in files.

# Task 4:

## Research Report:

## Design Report:

# Task 5:

* Git used and information included in submission readme.txt
* Doxygen used and information included
* Unit testing included

# Task 6:

The following images represent an instance of the simulator upon running the program:

Notes for group:

* Add your diagram + small description
* Do we need to meet those Components of War points in the spec? (ask mentor)
* If yes we need: war phases, entities
* What is Launch Reenactment? (ask mentor)
* Bannerman class needs name attribute that is passed in in constructor + other attributes (done already?)
* Deadline for pattern code + reports: 31 October
* Deadline for final code: 5 November
* Final group meeting: 6 November (have all documentation done)
* Submission: 8 November

Management

Basic outline of work distribution and internal deadlines.

# Task 1:

Whole group contributed.

Deadline: 3 October - met

# Task 2:

Functional requirements: Group contributions

Activity Diagrams: Julianna Venter

Patterns: group contributions

Class diagrams: Sameet Keshav

Sequence/Communications diagrams: Ronin Brookes

State Diagrams: Morgan Bentley

Object Diagrams: Thapelo Thoka

Deadline: 18 October - met

# Task 3:

1. Memento: Julianna Venter

2. State: Morgan Bentley

3. Abstract Factory: Ronin Brookes

4. Prototype: Ronin Brookes

5. Mediator: Sameet Keshav

6. Observer: Sameet Keshav

7. Strategy: Morgan Bentley

8. Composite: Thapelo Thoka

9. Iterator: Thapelo Thoka

10. Decorator: Keabetswe Mothapo

Testing and updates: Keabetswe Mothapo

Main functionality and simulation: Julianna Venter

Deadline: 31 October

# Task 4:

Research report: Julianna Venter & Keabetswe Mothapo

Design report: Ronin Brookes & Thapelo Thoka

Deadline: 31 October

# Task 5:

Github management: Sameet Keshav

Doxygen management: Morgan Bentley

Deadline: 6 November