

Verb-noun analysis:

Simulation assume existence of multiple object - **tribes**. Starting **amount of tribes** and their **population** is **defined** by **simulation user**, it can **change over time**.

Their **village bases** and **units** (**archers**, **spearmans** and **warriors**) are **located on** procedurally generated **board** and **have** certain **statistics**. **Board size** is **defined by user**. There are also **monsters** on board. They are hostile towards to **villagers** (Hard to **kill**, but worth it). Tribes can **expand** using **food**, certain amount can **allow to make new unit**. User defines starting number of food and **spawn rate**.

When two hostile units **meet** there is chance to **start war**. It **lasts till one of village is defeated**.

Morale system **depends on lost units and collected food**, values over 100 **points** **increases amount of units**, while lower 0 **decreases**.

CRC Cards:

Class: Ui_Simulation
Responsibilities: Runs the simulation itself
Collaborators: villagerBase board

Class: board
Responsibilities: Generating and holding map Generating monsters on empty spots Generating food on empty spots Generating village bases on empty spots Generating units (Warrior, Spearman or Archer) on empty spots Checking if villageBase is far enough from other bases to not stack them next to each other
Collaborators: calc Ui_Simulation unit

Class: calc
Responsibilities: Calculating all math problems needed to be solved
Collaborators: Board villagerBase resource

Class: villageBase
Responsibilities: Holds statistics of village bases Holds list of bases Removes bases if tribe gets destroyed Updates morale level
Collaborators: Ui_Simulation unitStatic

Class: monster
Responsibilities: Holds positions of monsters Holds statistics of monsters Holds list of monsters
Collaborators: unitDynamic

Class: resource
Responsibilities: Holds position of resources Holds list of resources
Collaborators: unitStatic

Class: archer
Responsibilities: Holds statistics of archers Holds positions of archers
Collaborators: unitDynamic

Class: spearman
Responsibilities: Holds statistics of spearmans Holds positions of spearmans
Collaborators: unitDynamic

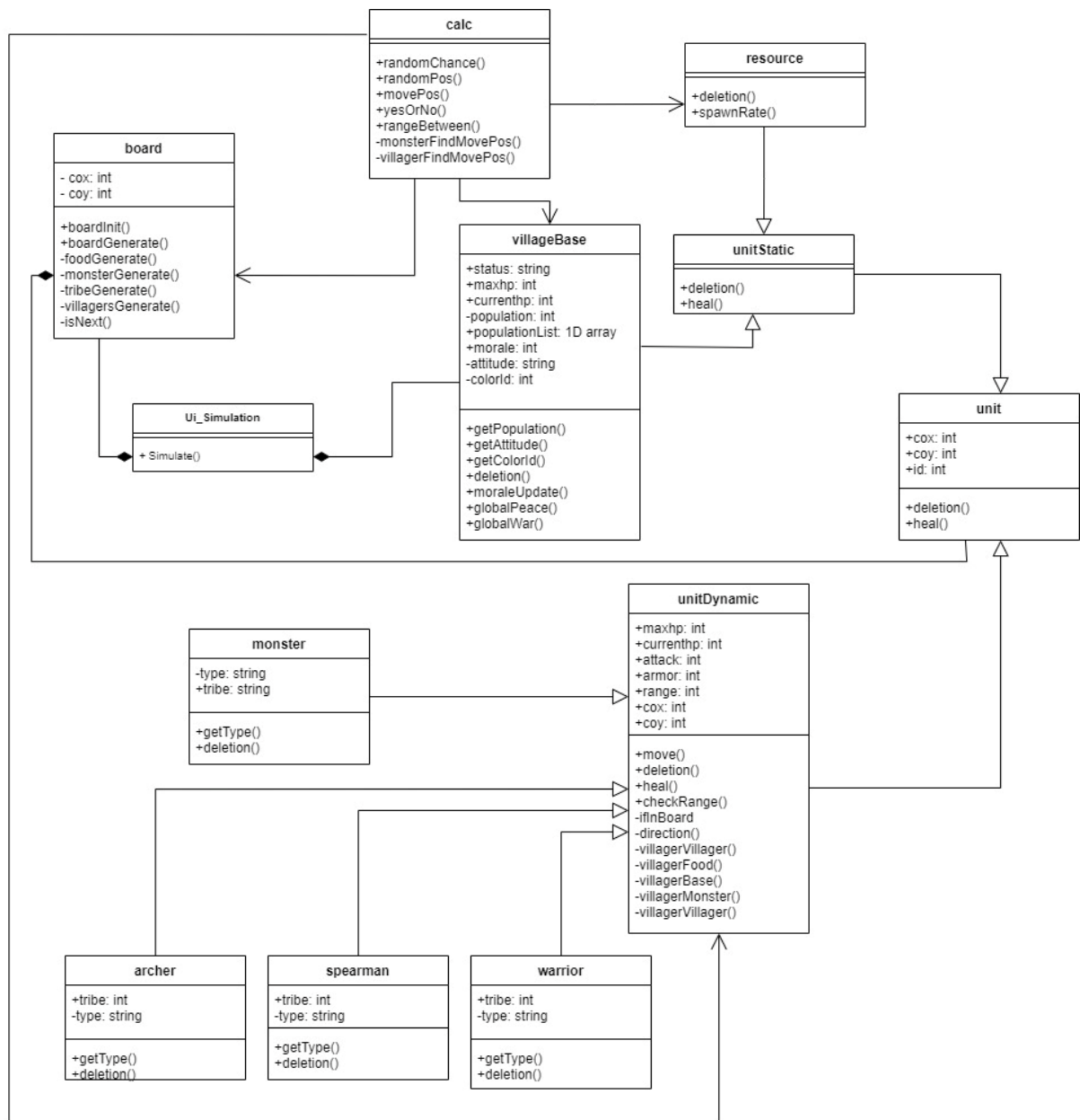
Class: warrior
Responsibilities: Holds statistics of warriors Holds position of warriors
Collaborators: unitDynamic

Class: unit
Responsibilities: Inheritance class for unitStatic and unitDynamic
Collaborators: unitStatic unitDynamic board

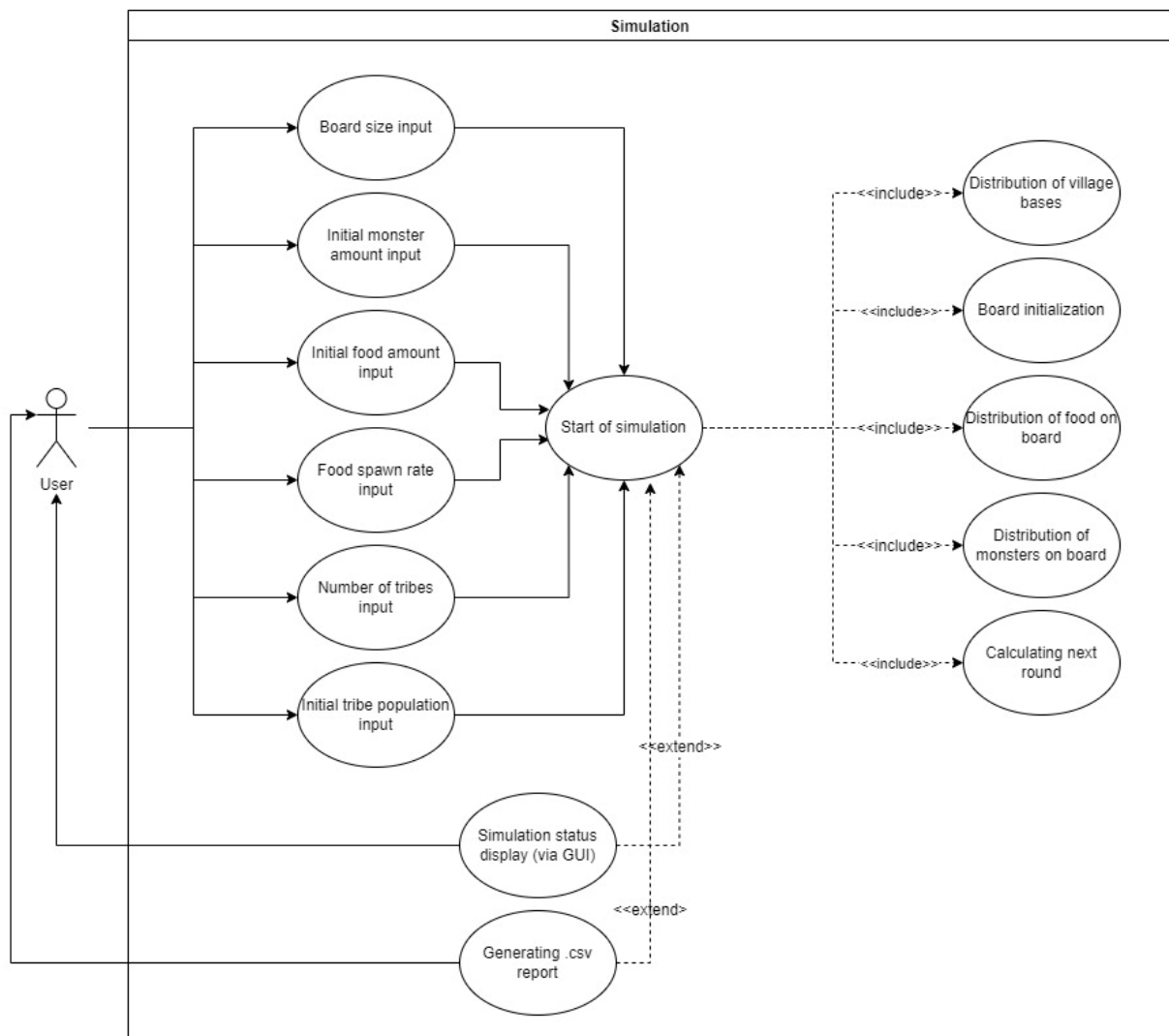
Class: unitStatic
Responsibilities: Inheritance class for resource and villageBase
Collaborators: unit resource villageBase

Class: unitDynamic
Responsibilities: Inheritance class for archer, spearman, warrior and monster
Collaborators: unit archer spearman warrior monster

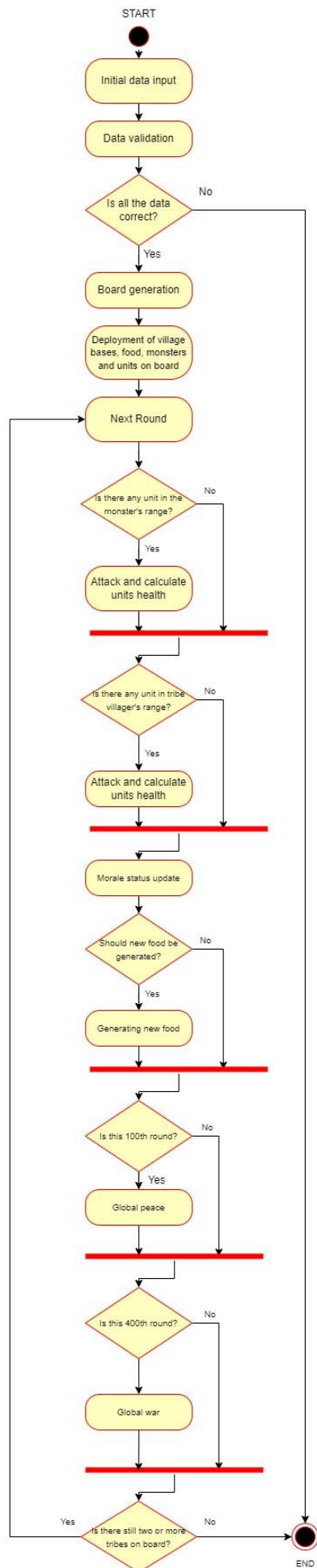
Class diagram



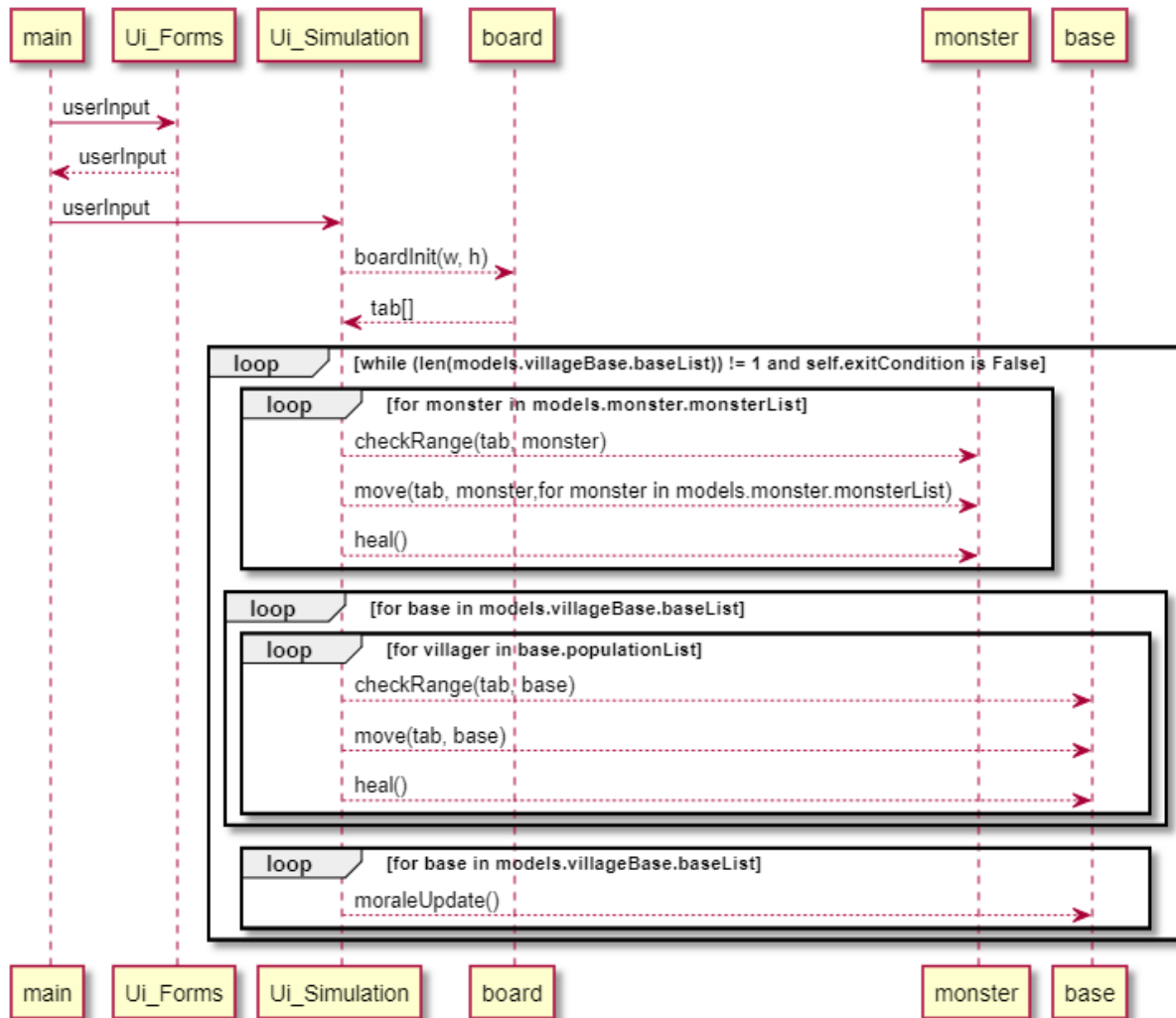
Use case diagram



Flow diagram



Sequence diagram



State machine diagram

