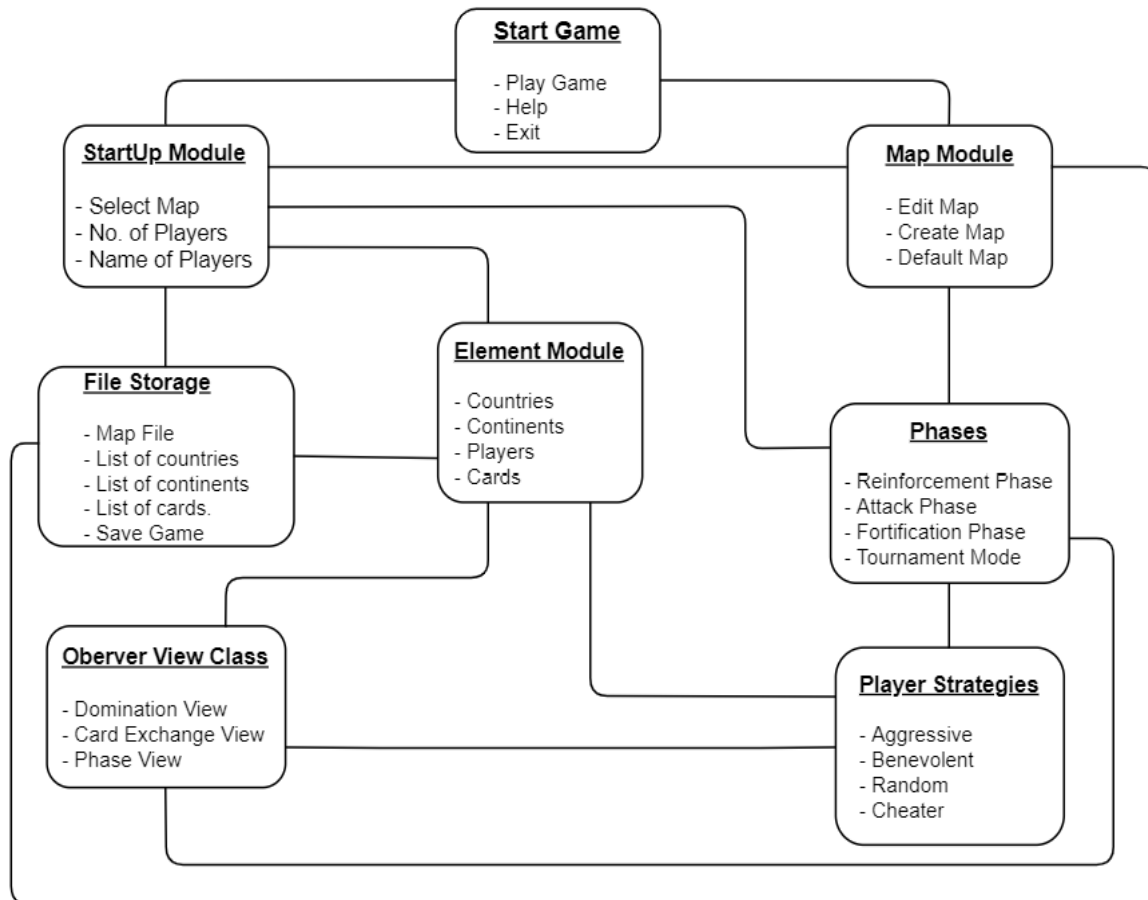


## Architectural Design



The Architectural Design we are using is a Modular Approach. Each component is combined according to their functionality and put them in similar module.

## **Game Starting:**

This module have three important components of the Risk Game.  
They are Start, Help, Exit.

## **Start Module:**

This module will take care of choosing the map from **Map Element Module**.  
And after choosing map the player will enter name and number of players.  
Then the module will switch over the control to the **Main Element Module** and **Phases Module**

## **Phases Module:**

This Module will first take the map input and the name of country and continent.  
Then will ask the player to input different countries for reinforcing the armies to different countries he owned.

After that the phase will change to fortify, where the player can fortify his army from one country to another country, provided both the countries are connected.

**Tournament Mode:** Here there will be no user interaction, only final result will be displayed at the end of the game revealing the winner at the end.

## **Main Element Module:**

This module has all the required elements that are to be used in the game. Like which player is playing, how many countries and continents does the player owns.

## **Map Elements:**

This module has all the main element of the map. New map creation for scratch, or editing the previous map, or using the default map.

If the player wants to create a new map then the game will ask for number of continents, number of countries in that continent. Also will ask which countries are connected to each other. After getting all the information it will create a new connected graph and load the same map in the game. After then the **Start Module** will continue its flow in the game.

### **Observer View Class:**

This Module will have view class which show three different types of view: World Domination View, Card Exchange View, Phase View.

### **File Storage:**

This Module have default map file, if new map file is created than it will be added in the map folder. It also have list of the continents and countries. The game will be stored in source file and can load the same file when required.

### **Player Strategy:**

There are four strategy that any player can choose to play. They are:

- **Human Player Mode:** A human player that requires user interaction to make decisions.
- **Aggressive Mode:** An aggressive computer player strategy that focuses on attack (reinforces its strongest country, then always attack with it until it cannot attack anymore, then fortifies in order to maximize aggregation of forces in one country).
- **Benevolent Mode:** A benevolent computer player strategy that focuses on protecting its weak countries (reinforces its weakest countries, never attacks, then fortifies in order to move armies to weaker countries).
- **Random Mode:** A random computer player strategy that reinforces random a random country, attacks a random number of times a random country, and fortifies a random country, all following the standard rules for each phase.
- **Cheater Mode:** A cheater computer player strategy whose reinforce() method doubles the number of armies on all its countries, whose attack() method automatically conquers all the neighbors of all its countries, and whose fortify() method doubles the number of armies on its countries that have neighbors that belong to other players.