COMP 345 Assignment 2 Grading Scheme

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NOTE: Kindly note the following points regarding the submission and demonstration:
1. Teams are requested to name their submitted file as "**a2_team#**", where # represents the team number. E.g. team 1 would name their file "a2_team1".
2. Students need to download their submitted code from the EAS website and set it up for presentation at the beginning of their allotted time-slot (20 minutes).
3. No additional time beyond the allotted time for each team will be provided. Grading will be done based on the features demonstrated successfully during this time-slot.
4. In case a team misses their allotted time-slot and requires a re-schedule, 30% of the total marks for the assignment will be deducted as penalty.
5. Students will be able to book their preferred time-slots for the demonstration about a week before the presentation day.

Non-implementation Part (8 points)

- **Knowledge/correctness of game rules (2 points)**
  Incorrect knowledge of official game rules during the demo or incorrect implementation of rules in the presented code will result in mark deduction.

- **Modularity/simplicity/clarity of solution (2 points)**
  Data structures should be appropriate, simple and clear. If a team has difficulties explaining their solution, it will be considered unclear.

- **Proper use of language/tools/libraries (2 points)**
  .h and .cpp files should be correctly used.

- **Code readability (2 points)**
  Improper naming, messy code layout, commented-out code, etc. will result in mark deduction.

Implementation Part (12 points)

Part 1: Game start (1.5 points)

1. Creation of a user interaction mechanism to allow map selection. Validation and loading of the selected map and rejection of invalid maps without program crashes. The map list should have some valid as well as invalid maps for testing. **[0.75 points]**
2. Selection of correct number of players in the game, creation of player objects and assignment of dice rolling facilities and an empty hand of cards to the players. **[0.5 points]**
3. Creation of a valid deck of cards. **[0.25 points]**

Part 2: Game play: startup phase (2 points) the order should also respect the round-robin fashion, instead of the same order all the time?

1. Determination of the order of play of the players in the game. **[0.25 points]**
2. Random assignment of countries to players in a round-robin fashion, ensuring that each country is assigned to exactly one player, and there is an almost equal distribution of countries among players. **[0.75 points]**
3. Assignment of the right number of armies to the players and the correct placement of those armies on countries in a round-robin fashion. **[1 point]**

Part 3: Game play: main game loop (1.5 points)

1. Players should be given turns in a round-robin fashion according to <mark>a pre-determined order of play.</mark> For each player, the reinforcement, attack and fortification functions should be invoked. **[0.75 points]**
2. This loop should continue until only one player controls all the countries in the map, at which point the winner should be announced and the game should end. **[0.75 points]**

I think we should ask the student to show their game can have a winner?

Part 4: Main game loop: reinforcement phase (2 points)

1. Every player should receive the right number of armies in the reinforcement phase. Teams should be able to demonstrate the different cases possible for this allotment. **[1.5 points]**
2. The player should place this exact number of new armies on its countries. **[0.5 points]**

Part 5: Main game loop: attack phase (3 points)

1. Only valid attacks should be declared (i.e. valid attacker/attacked country). Also, the attacker should be allowed to initiate multiple attacks (including 0), until it declares that it does not want to attack anymore or if the attacking country runs out of armies. **[0.75 points]**
2. Only valid number of dice should be chosen by the attacker/defender. **[0.75 points]**
3. Given known dice values, the right number of armies should be deducted on the attacker/defender side. If the attacked country loses all its armies in this attack, it should be assigned to the attacker. **[0.75 points]**
4. The attacker should move a correct number of armies from the attacking country to the attacked country once it is defeated. **[0.75 points]**

Part 6: Main game loop: fortification phase (2 points)

1. Only valid countries should be selected as source/target. **[1 point]**
2. Only valid number of armies should be moved from source to target. **[1 point]**