

Computer Programming Lab, Spring 2018
 Super Heroes Chess
 Game Description

This document provides a detailed description of the game elements and gameplay. It does not contain any implementation or coding details.

Intro

Super Heroes Chess (SHC) is a two-player strategic board game inspired by traditional chess. The first main difference is that the pieces represent superheroes with super powers or advanced abilities alongside their sidekicks, instead of the traditional pieces. Each different hero piece has a unique power that performs a certain purpose. The sidekick pieces are there to aid the heroes in their mission. The main objective of the game is to deliver a payload over to the base of the opposing player by eliminating a specific number of their pieces, rather than eliminating the king piece in the traditional chess.

Board Setup

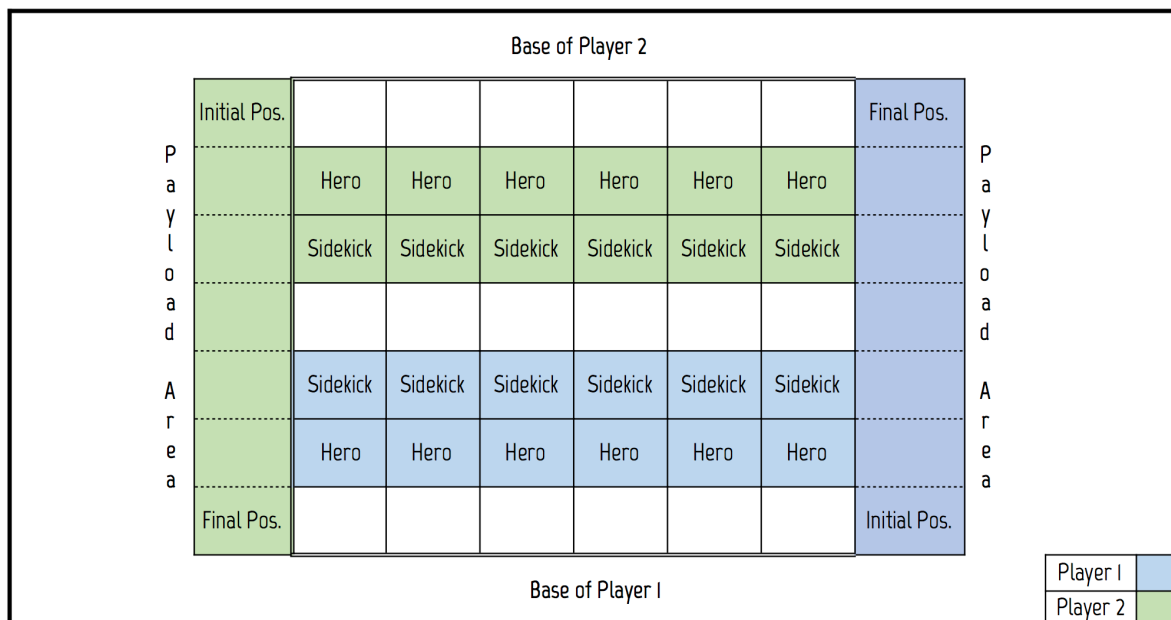


Figure 1: Board setup of the SHC, showing the different areas and initial locations of the pieces.

As illustrated in Fig. 1, the game consists of a 6x7 board and two payload panels; one for each player.

1. The **payload panel** of a player displays the player's payload progress by indicating how many steps the payload has moved towards the enemy's base i.e. the base of the other player. Each payload has seven possible positions including the initial and final one, making it six steps away from the enemy's base.
2. The **board** representing the playing area is 6x7 grid of squares. The players sit on opposite sides by their bases, as shown in Fig. 1. Each player has six unique hero pieces from the six available hero types as well as six sidekick pieces. The heroes of each player are randomly placed in the player's designated hero area, which is highlighted with each player's respective color in the figure. The sidekicks are also placed in their designated areas but no random assignment is needed as all sidekicks are of the same type. This results in an empty row preceding and following the players pieces to enable smooth and fair gameplay.



Figure 2: *SHC* board: the sidekicks of both players have performed moves leading to eliminating enemy pieces and thus the payload of one player being moved one step.

Pieces

There are two types of pieces representing the characters in the game; the sidekick piece and the hero piece. There are six different types of hero characters; Super, Ranged, Medic, Armored, Speedster, and Tech, but only one sidekick type. The following factors distinguish between the different piece types:

1. A set of possible movement directions.
2. A super power or a special ability.
3. Specific directions in which the ability may be used.

Table 1 shows a detailed breakdown of the different piece types with their special movement directions and abilities. To be able to understand the table some notations are explained:

1. The arrows indicate directions of movements and special abilities:
 - (a) $\leftarrow \rightarrow$ represent the horizontal directions: left and right, respectively.
 - (b) $\uparrow \downarrow$ represent the vertical directions: up and down, respectively
 - (c) $\swarrow \nearrow \searrow \swarrow$ represent the diagonal directions: up-left, up-right, down-right and down-left, respectively.
2. A passive ability represents an ability that remains active as long as the piece remains on the board. It is not to be confused with the literal definition of the word “passive” but rather with the gaming convention of passive features. A passive ability is inherently one that is not hack-able and not activate-able.
3. Resurrecting a piece means that an already eliminated piece will be brought back from the eliminated pieces’ area and placed on the board in the selected direction.

Game Rules

After having defined the game setup, the different piece types and their corresponding movements and special abilities, we will go through the main game rules.

Winning Condition

A player wins whenever his/her payload reaches the enemy’s base. This means that the payload has moved six steps.

Payload Movement

The friendly payload moves one step after:

1. Eliminating one enemy hero piece.
2. Eliminating two enemy sidekick pieces.

Piece Type	Movement Direction	Special Ability	Ability Direction
Super	← ↑ → ↓	Smashes two adjacent cells in the specified direction, eliminating any enemy pieces within them.	Same as Movement
Ranged	← ↑ → ↓ ↖ ↗ ↘ ↙	Eliminates the first enemy piece that is encountered in the specified direction. The distance of the enemy piece makes no difference, provided that the path is not blocked by any friendly piece.	← ↑ → ↓
Medic	← ↑ → ↓	Resurrects an eliminated friendly piece to the adjacent cell in the chosen direction. The special ability of the resurrected piece is also restored. The payload movement resulting from the death of the resurrected piece remains the same.	← ↑ → ↓ ↖ ↗ ↘ ↙
Armored	← ↑ → ↓ ↖ ↗ ↘ ↙	Survives the first damage taken through any type of attack.	None
Speedster	← ↑ → ↓ ↖ ↗ ↘ ↙	Traverses two cells instead of one in any movement. This ability is a passive one i.e. it is always activated until the Speedster is eliminated.	Same as Movement
Tech	↖ ↗ ↘ ↙	Can use one of the following, without ending the turn afterwards: <ol style="list-style-type: none"> 1. Teleporting a friendly piece into any empty cell on the board. 2. Hacking an enemy hero piece so that it cannot use its ability. This is applicable to non-passive powers only. 3. Restoring the ability of another friendly piece, enabling it to be used again. This can revert the effect of the Tech's second ability, namely the hacking. 	None
Sidekick	← ↑ → ↖ ↗ (For Player 1) ← ↓ → ↘ ↙ (For Player 2)	Whenever a sidekick piece eliminates a hero piece, this sidekick piece is replaced with a new hero piece of the same type of the eliminated hero piece. This ability is a passive one.	None

Table 1: Breakdown of all the movements and special abilities of the different piece types.

Eliminating a Piece

A friendly piece can eliminate an enemy piece if:

1. The friendly piece moves into a cell where this enemy piece is located. In case the enemy piece is of type Armored and hasn't used that armor yet, the friendly piece stays on the same initial location and so does the Armored piece after losing its armor.
2. The friendly piece's special ability will result in the elimination of this enemy piece.

After a piece is eliminated it is kept beside the board without totally disposing of it.

Special Abilities

All pieces may use their special abilities after specifying their targets, direction or both depending on the requirements of this ability. However, each piece can only do so once in the game (unless revived by a Tech piece). The exception is the Speedster's passive ability that remains active as long as the Speedster is still on the board. The special ability of the Armored and Sidekick cannot be willingly activated but are rather triggered by certain events, namely being attacked for the first time or eliminating an enemy piece, for the Armored and Sidekick, respectively.

Moving a Piece

Each piece may move to an adjacent cell in one of the possible directions, as specified in Table 1. This means that any piece can move only one cell at a time, with the exception of the Speedster. Speedsters can thus only eliminate pieces located in their final destination i.e. two steps away from them and have to overstep any adjacent enemy pieces leaving them unharmed in the process. If the movement of a piece should result in a movement outside one of the borders of the board then this piece will be moved to the opposite border instead i.e. the board edges are considered to be wrapped in case of movement. For instance, if the movement would result in a movement outside the right border then the piece will be placed in the same row but in the left most cell in this row. A friendly piece cannot move to a cell containing another friendly piece.

Turns

The game is turn-based, meaning that the players alternate playing the game. Each turn, a player can either move a friendly piece or use a friendly piece's special ability but not both. The exception to this case is the Tech piece whose ability is not counted as an action that ends the turn. Turn switching is done automatically after each player performs an action. Players may not pass their turn without performing any action.

Game Flow

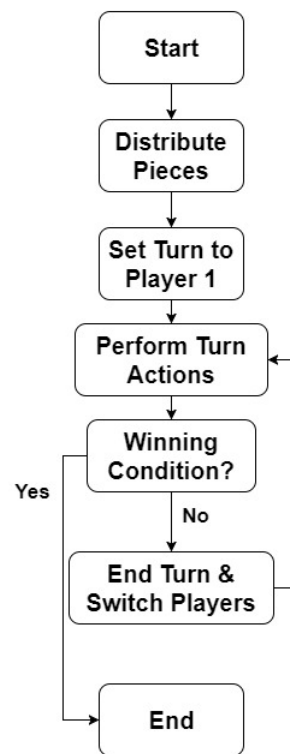


Figure 3: A diagram illustrating the general flow of the *SHC*.