

## Client to Server:

**JoinGameRequest:** Message to request joining the game.

```
{"messageType": "JoinGameRequest", "playerName": "<NAME>"}
```

- **String <NAME>:** The name of the client (player).

**StartGameRequest:** Message to request starting the game.

```
{"messageType": "StartGameRequest"}
```

**UpdateProgressRequest:** Message sent by the client to update the current speed, time, and progress.

```
{"messageType": "UpdateProgressRequest", "playerName": "<NAME>", "wpm": <WPM>, "time": <TIME>, "progress": <PROGRESS>}
```

- **String <NAME>:** The name of the client (player).
- **int <WPM>:** Current words per minute.
- **int <TIME>:** Time spent in seconds.
- **int <PROGRESS>:** Current progress percentage (0-100).

**EndGameRequest:** Message sent by the client to indicate that the player has finished typing.

```
{"messageType": "EndGameRequest", "playerName": "<NAME>"}
```

- **String <NAME>:** The name of the client (player).

**PlayerLeftRequest:** Message sent by the client to indicate that the player has left the game.

```
{"messageType": "PlayerLeftRequest", "playerName": "<NAME>"}
```

- **String <NAME>:** The name of the client (player).

**UpdateRankingRequest:** Message sent by the client to update the ranking of players in the game.

```
{"messageType": "UpdateRankingRequest", "rankings": ["player1", "player2", ...]}
```

- **Array <rankings>:** List of players being ranked.
- **String <NAME>:** The name of the player.
- **Integer <WPM>:** The score of the player.

- **Integer <PROGRESS>**: The progress of the player
- **Double <ACCURACY>**: The accuracy of the player.

## Server to Client:

**GameStateNotification**: Message broadcasting the current game state.

```
{
  "messageType": "GameStateNotification",
  "playerName": "<NAME>",
  "wpm": <WPM>,
  "time": <TIME>,
  "progress": <PROGRESS>,
  "accuracy": <ACCURACY>
}
```

- **String <NAME>**: Player name.
- **int <WPM>**: Current words per minute.
- **int <TIME>**: Time spent in seconds.
- **int <PROGRESS>**: Current progress percentage.
- **Double <ACCURACY>**: A measurement of how accurately the player is typing, represented as a decimal between 0 and 1, where 1 is perfect accuracy.

**PlayerJoinedNotification**: Message notifying all clients that a new player has joined.

```
{"messageType": "PlayerJoinedNotification", "newPlayerName": "<NAME>",
"numPlayers": <NUM_PLAYERS>}
```

- **String <NAME>**: Name of the player who just joined the game.
- **int <NUM\_PLAYERS>**: Current number of active players in the game.

**PlayerLeftNotification**: Message notifying all clients that a player has left the game.

```
{"messageType": "PlayerLeftNotification", "playerName": "<NAME>", "numPlayers":
<NUM_PLAYERS>}
```

- **String <NAME>**: Name of the player who left the game.
- **int <NUM\_PLAYERS>**: Current number of active players in the game.

**GameStartNotification**: Message notifying clients that the game has started.

```
{"messageType": "GameStartNotification", "players": { "name": "<NAME>", "wpm": <WPM>, "progress": <PROGRESS>, "accuracy": <ACCURACY>, "hasFinished": <HAS_FINISHED> }}, "text": "<TEXT>"}
```

- **String <TEXT>**: Text to be typed.
- **String <NAME>**: The name of the player.
- **Integer <WPM>** (Words Per Minute): The typing speed of the player, measured in words per minute.
- **Integer <PROGRESS>**: Indicates how far the player has progressed in the current game or task, typically measured as a percentage or a step count.
- **Double <ACCURACY>**: A decimal value representing the typing accuracy of the player. It is a number between 0 and 1, where 1 represents 100% accuracy.
- **Boolean <HAS\_FINISHED>**: A boolean flag indicating whether the player has finished the game or task.

**GameEndNotification:** Message notifying this client that the game has ended, including final rankings.

```
{"messageType": "GameEndNotification", "playerName": "<NAME>", "wpm": <WPM>, "time": <TIME>, "accuracy": <ACCURACY>}}
```

- **String <NAME>**: Player name.
- **int <RANK>**: Player's final rank.
- **int <WPM>**: Final words per minute.
- **int <TIME>**: Final time spent in seconds.
- **Double <ACCURACY>**: Final accuracy percentage.

**PlayerListUpdateNotification:** Message sent to update clients or systems about the current list of players in the game or session.

```
{"messageType": "PlayerListUpdateNotification", "playerNames": ["<NAME1>", "<NAME2>", "<NAME3>", ...]}
```

- **Array <playerNames>**: A list of names representing all the players currently in the game or session. Each element in the array is a string indicating a player's name.

**LobbyFullNotification:** Message sent to notify clients that the lobby they are attempting to join is full.

```
{"messageType": "LobbyFullNotification"}
```

**RankingNotification:**

```
{"messageType": "RankingNotification",  
 "rankings": [{"name": "<NAME>", "wpm": <WPM>, "progress": <PROGRESS>,  
 "accuracy": <ACCURACY>, "hasFinished": <HAS_FINISHED>}, ...]}
```

- **String <NAME>**: The name of the player.
- **Integer <WPM>** (Words Per Minute): The typing speed of the player, measured in words per minute.
- **Integer <PROGRESS>**: Indicates how far the player has progressed in the current game or task, typically measured as a percentage or a step count.
- **Double <ACCURACY>**: A decimal value representing the typing accuracy of the player. It is a number between 0 and 1, where 1 represents 100% accuracy.
- **Boolean <HAS\_FINISHED>**: A boolean flag indicating whether the player has finished the game or task.

**HostNotification**: Message notifying this client that the game has ended, including final rankings.

```
{"messageType": "HostNotification", "host": "<HOST>"}
```

- **String<HOST>**: The name of the host of this game.