Specification: Primary Game Data File

Purpose

This JavaScript file serves as the primary data store for a client-server strategy web application. It provides a centralized source of game state and configuration information, which is:

1. **Read and written on the server** via PHP using `json_decode()` and `json_encode()`.

2. **Read directly by the client** in JavaScript to render UI elements and execute game logic.

The file contains structured JSON-like objects representing game entities such as colonies, fleets, events, units, maps, and player/empires. It is intended to be authoritative for game state.

Data Structures

1. Colonies

Variable: `colonies`
Type: Array of objects

Each colony object contains the following properties:

Property	Type	Description
`name`	string	Name of the colony.
`capacity`	integer	Maximum statistics of the colony
`fort`	integer	Level of fortification.
`intel`	integer	Intelligence coverage.
`morale`	integer	Morale of the colony population.
`owner`	string	Owning empire, empty if unowned.
`population`	integer	Current population of the colony.
`raw`	integer	Resource richness index.
`type`	string	Environmental type (e.g., "Barren", "Adaptable", "Homeworld", "Dead", "Extreme", "Garden").
`notes`	string	Special features or ongoing events in the colony. Includes "Martial Law", "Blockaded", "Rebellion", and "Opposition"
`fixed`	array	Array of fixed structures or units that cannot move on their own, at the colony.

2. Empire

Variable: `empire`
Type: Object

Represents the player's empire.

Property	Type	Description
empire	string	Empire identifier.
maintExpense	integer	Maintenance expense.
miscExpense	integer	Miscellaneous expenses.
miscIncome	integer	Miscellaneous income.
name	string	Full name of the empire.
systemIncome	integer	Income from all controlled systems.
previousEP	integer	Economic points carried over from previous turn.
techYear	integer	Current technological year.
tradeIncome	integer	Income from trade.
researchInvested	integer	Resources invested in research.

3. Events

Variable: events

Type: Array of objects

Events capture abnormal happenings to an empire. This is not intended as a checklist of what has been done or what needs to be done. Rather, it collects things that need to be brought to the attention of the player. As a non-exhaustive list, this should contain items such as successful or unsuccessful raids, a change in diplomatic standing with another empire, fleets being encountered, battles to be resolved, and covert operations by or to the player. Each event object contains:

Property	Type	Description
event	string	Short event description.
time	string	Turn of event.
text	string	Detailed narrative or calculation for the event.

4. Fleets

Variable: fleets

Type: Array of objects

Each fleet object contains:

Property	Type	Description
name	string	Fleet identifier.
location	string	Current colony or sector.
units	array	List of ship/unit names in the fleet.
notes	string	Optional notes regarding fleet.

5. Game State

Variable: game

Type: Object

Property	Type	Description
game	string	Name of the game.
turn	integer	Current turn number.
monthsPerYear	integer	Game months per year.
blankOrders	integer	Number of blank orders available.
turnSegment	string	Current phase of turn (e.g., "pre", "post").
nextDoc	string	Identifier of next saved game file.
previousDoc	string	Identifier of previous saved game file.

6. Map Data

- **Map Points (`mapPoints`)**: Array of `[x, y, owner, name]` coordinates representing colonies on the map.

- **Map Connections (`mapConnections`)**: Array of `[from, to, status]` representing known or unexplored routes between colonies. `Status` is "Unexplored", "Restricted", "Minor", "Major"

7. Orders, Treaties, and Projects

- **Orders (`orders`)**: List of player-issued actions in the format of the following:

Property	Type	Description
type	string	Order Type
receiver	string	Thing being ordered
target	string	Where to perform order
note	string	User-entered value
perm	boolean	If 0, show order in drop-downs if 1, no drop down. Show text

- **Offered Treaties (`offeredTreaties`)**: Array of treaties offered to other empires. Format is `[ Empire, Treaty Type ]`

- **Treaties (`treaties`)**: List of treaties with other empires

Property	Type	Description
cooldown	int	Diplomatic cooldown value
Empire	String	The empire this affects
type	string	Political state: War, Hostilities, Neutral, Non-Aggression, Trade, Mutual Defense, Alliance
income	int	Known income of other power
navy	int	Known naval construction value of other power

- **Intel Projects (`intelProjects`)**: List of ongoing espionage or sabotage projects in the format of

Property	Type	Description

Type	string	Type of mission
Target	string	What system the mission is affecting
Location	string	Where the mission is sourced

8. Units and Purchases

- **Unit List (`unitList`)**: Contains ship/unit types with `ship` name, `yis` year introduced, `design` type, `cost`, and `notes`.

Property	Type	Description
Ship	string	Ship designator or class (e.g. "FFE", "BCH")
YIS	int	The year that the ship becomes available
Design	string	The ship hull designation (e.g. "CA", "AB")
Cost	int	The cost of the unit, in EPs
Notes	string	Any notes on the units of this class. Comma deliminated. Some notes are followed by a number in parenthesis.

- **Purchases (`purchases`)**: List of purchasable units with `name` and `cost`.

Property	Type	Description
cost	integer	Amount spent on this turn to create this item
name	string	The name of the item being created.

- **Under Construction (`underConstruction`)**: Tracks units currently being built at specific colonies.

Property	Type	Description
location	string	Place that the unit is being built
unit	string	The unit being built. See `Purchases` for cost.

- **Units in Mothballs (`unitsInMothballs`)**: Same format as fleets, but always named "Mothballs".

- **Units Needing Repair (`unitsNeedingRepair`)**: Array of unit identifiers who are crippled. Format of unit identifiers are `[unit designator]+" w/ "+[fleet name]`.

- **States of Units (`unitStates`)**: Array of unit identifiers who are have other states. The format is `[ [unit designator]+" w/ "+[fleet name], "unit state" ]`. States can be "Out of Supply", "Exhausted", and other strings, but not "Crippled". ("Crippled" states are noted in `unitsNeedingRepair`.)

9. Other Data

- **Other Empires (`otherEmpires`)**: Array of names of other player empires.

- **Unknown Movement Places (`unknownMovementPlaces`)**: Array of colony names where the statistics are not yet known. These names may not be the actual name of the colony at that location.

Server-Client Considerations

1. **Server-side (PHP):**

   - Use `json_decode()` to read the JS file into PHP associative arrays or objects.

   - Use `json_encode()` to write updates back to this file.

2. **Client-side (JavaScript):**

   - Directly reads the file to display game state and update the UI.

   - All data must be kept in valid JSON-compatible format.

Notes

- All arrays and objects should remain consistent in key naming and type to ensure compatibility between server and client.

- This file serves both as the authoritative game state and configuration reference for gameplay mechanics.

- Colony and unit names must be unique identifiers.

- The key names may be in any order, by it is customarily sorted alphabetically except that `unitList` is placed at the end. This is because `unitList` is generally the largest array and would make the file less readable if other keys are placed after it.

- Standard JSON_PRETTY_PRINT routines are space wasteful. A limited pretty-print algorithm is used: newlines are inserted after closing semicolons and after commas that separate array elements. The exception is that newlines are not inserted into arrays that are themselves nested inside a JSON object.

Specification of the Orders format.

The specific orders that can be found in the orders structure (above) are enumerated as follows. All values are strings, but items noted in square brackets represent possible values. For example, [currentFlights] indicates that the value can be any one of all flight units (units with a design of "LF" or "HF") owned by this player.

Fleet Deployment orders

Add to Fleet: "type":"add_fleet", "receiver":[currentUnits], "target":[ ], "note":"New Fleet Name"
Assign flights: "type":"flight", "receiver":[currentFlights], "target":[allBasablePlaces], "note":""
Rename a fleet: "type":"name_fleet", "receiver":[currentFleets], "target":[ ], "note": "New fleet name"

Intelligence Orders

Perform covert mission: "type":"covert", "receiver":[colonyNames], "target":[allKnownPlaces], "note": "Mission Type"
Perform special-forces mission: "type":"special_force", "receiver":[colonyNames], "target": [allKnownPlaces], "note": "Mission Type"

Movement Orders

Convoy Raid: "type":"convoy_raid", "receiver":[currentFleets], "target":[allMovablePlaces], "note": ""
Explore Jump-Lane: "type":"explore_lane", "receiver":[currentFleets], "target":[ ]], "note": ""
Move fleet: "type":"move", "receiver":[currentFleets], "target":[allMovablePlaces], "note": ""
Load units: "type":"load", "receiver":[unitsWithCarry], "target":[allLoadableUnits], "note": "Amount to Load"
Long-Range Scan: "type":"long_range", "receiver":[currentFleets], "target":[allMovablePlaces], "note": ""
Set a trade route: "type":"start_trade", "receiver":[currentFleets], "target":[allKnownPlaces], "note": "Third system of trade route"
Stop a trade route: "type":"stop_trade", "receiver":[currentFleets], "target":[allKnownPlaces], "note": ""
Unload units: "type":"unload", "receiver":[unitsWithCarry], "target":[ ]], "note": "Amount to unload"

Diplomatic Orders

Declare War: "type":"hostile_check", "receiver":[otherEmpires], "target":[ ]], "note": ""
Offer a treaty: "type":"diplo_check", "receiver":[otherEmpires], "target":[ ]], "note": ""
Sign a treaty: "type":"sign_treaty", "receiver":[offeredTreaties], "target":[otherEmpires], "note": ""
Sneak Attack: "type";"sneak_attack", "receiver":[currentFleets], "target":[ ], "note": ""

Construction orders

Build unit at system: "type":"build_unit", "receiver":[allBuildableUnits], "target":[colonyNames], "note": "New fleet name

Convert/Refit Unit: "type":"convert", "receiver":[currentUnits], "target":[buildableShips], "note": ""

Mothball a unit: "type":"mothball", "receiver":[currentUnits], "target":[ ], "note": ""

Purchase civilian unit at system: "type":"purchase_civ", "receiver":[BuildableCivUnits], "target": [colonyNames], "note": "New fleet name

Purchase troop at system: "type":"purchase_troop", "receiver":[buildableGround], "target": [colonyNames], "note": "Quantity

Remote build unit: "type":"remote_build", "receiver":[buildableBases], "target":[unitsWithCarry], "note": ""

Repair unit: "type":"repair", "receiver":[unitsNeedingRepair], "target":[ ], "note": ""

Scrap a unit: "type":"scrap", "receiver":[currentUnits], "target":[ ], "note": ""

Unmothball a unit: "type":"unmothball", "receiver":[unitsInMothballs], "target":[ ], "note": ""

Investment Orders

Colonize system: "type":"colonize", "receiver":[otherSystems], "target":[ ], "note": ""

Downgrade Lane: "type":"downgrade_lane", "receiver":[allKnownPlaces], "target": [allKnownPlaces], "note": ""

Enact martial law: "type":"martial_law", "receiver":[colonyNames], "target":[ ], "note": ""

Improve capacity: "type":"imp_capacity", "receiver":[colonyNames], "target":[ ], "note": ""

Improve Population: "type":"imp_pop", "receiver":[colonyNames], "target":[ ], "note": ""

Improve Intelligence: "type":"imp_intel", "receiver":[colonyNames], "target":[ ], "note": ""

Improve Fortifications: "type":"imp_fort", "receiver":[colonyNames], "target":[ ], "note": ""

Invest into research: "type":"research", "receiver":[[], "target":[ ], "note": "Amount to Invest

(Re) name a colony: "type":"name_place", "receiver":[colonyNames], "target":[ ], "note": "Name"

Research Target: "type":"research_new", "receiver":[['Research New Unit','Upgrade Unit']], "target":[allBuildableUnits], "note": ""

Upgrade Lane: "type":"upgrade_lane", "receiver":[allKnownPlaces], "target":[allKnownPlaces], "note": ""

Combat Orders

Cripple unit: "type":"cripple", "receiver":[currentUnits], "target":[ ], "note": ""

Destroy unit: "type":"destroy", "receiver":[currentUnits], "target":[ ], "note": ""

Transfer ownership of unit: "type":"gift", "receiver":[currentUnits], "target":[otherEmpires], "note": ""