

Mission and Objectives

At the beginning of the design process, we were tasked with designing a database that could effectively provide for all of the needs of the Pokemon League. The overall guiding mantra for the process has been the mission statement we devised at the beginning of the process, which states:

The purpose of the Pokemon League Database is to maintain the data required to keep League challenges fair and balanced, so as to ensure a fun and engaging experience for all trainers.

Along with this mission statement, we also devised several specific mission objectives to follow to ensure that the database would achieve the goal of the above statement. These are:

- The database should maintain a complete record of each league challenger
- The database should maintain all info on shop inventory
- The database should keep track of all shop sales
- The database should maintain all info on the members of the Elite Four
- The database should maintain info on all Pokemon used within League challenges
- The database should maintain info regarding League win/loss rates
- The database should be main all info regarding historic trends of League challenges

Complete Table List

Through careful design and consideration, we were able to construct a database consisting of tables representing all of the necessary entities and non-entities relevant to the Pokemon League. The database accounts for all of the important entities specified by our client, including Pokemon, Trainers, Elite Four members, Challenges, Items, Pokemon Species and Pokemon Types. We've also been sure to implement non-entity tables that, either through themselves and/or through relationships with entity tables, represent important supporting information of the primary entity tables. These tables include Pokemon Participants, Items Used, Sold Items, and Pokemon Species Types. Through this thorough representation of all important subjects and the network of relationships that connect them, both the mission statement mission objectives are met. Below are detailed summaries of each table present in the database.

Name: Trainers

Type: Data

Description: The Pokemon Trainers who compete in the Elite Four Challenge. This table is important for keeping track of how many trainers compete in the Challenge and background data associated with them so the League can keep the Challenge balanced.

Name: Elite Four

Type: Data (Subset)

Description: The best of the best trainers in the region. These are the trainers that each challenger competes against. This table is important for keeping track of who is the competition in a challenge and at what point trainers will have to battle them.

Name: Pokemon

Type: Data

Description: The Pokemon partners of the trainers that take part in the Challenge. This table helps the League monitor what trainers use what Pokemon and in what combinations during a Challenge run.

Name: Hall of Fame

Type: View

Description: The trainers who were successful in their League Challenge and defeated the Elite Four. This table is important for keeping track of the top-of-the-line trainers that succeeded in their quest, an important facet of League balance.

Name: Items

Type: Data

Description: All the items currently available in the shop. This is important for maintaining shop sales and stock.

Name: Challenges

Type: Data

Description: All of the individual League Challenges undertaken by each trainer. This table allows the League to track the progress made by each trainer each time they compete to monitor the balance of the competition.

Name: Sold Items

Type: Linking

Description: The items that have been sold to trainers. This table is important because it allows the League to track what items each trainer has purchased, valuable for monitoring what items the most successful trainers bought.

Name: Pokemon Types

Type: Validation

Description: A table containing all the allowed types a Pokemon can be. This table is important for ensuring no Pokemon is given a type that is invalid or doesn't exist.

Name: Items used

Type: Linking

Description: This table associates a given sold item with the challenge it was used in. This is important for keeping track of historical item use data.

Name: Pokemon Participants

Type: Linking

Description: This table associates a given pokemon with the challenge(s) they have competed in. This is important for keeping statistics on Pokemon use rates.

Name: Pokemon Species Types

Type: Linking

Description: This table is responsible for linking a species to its corresponding type(s). Essentially, this table ensures each Pokemon species has at least one type and that this type is accurate.

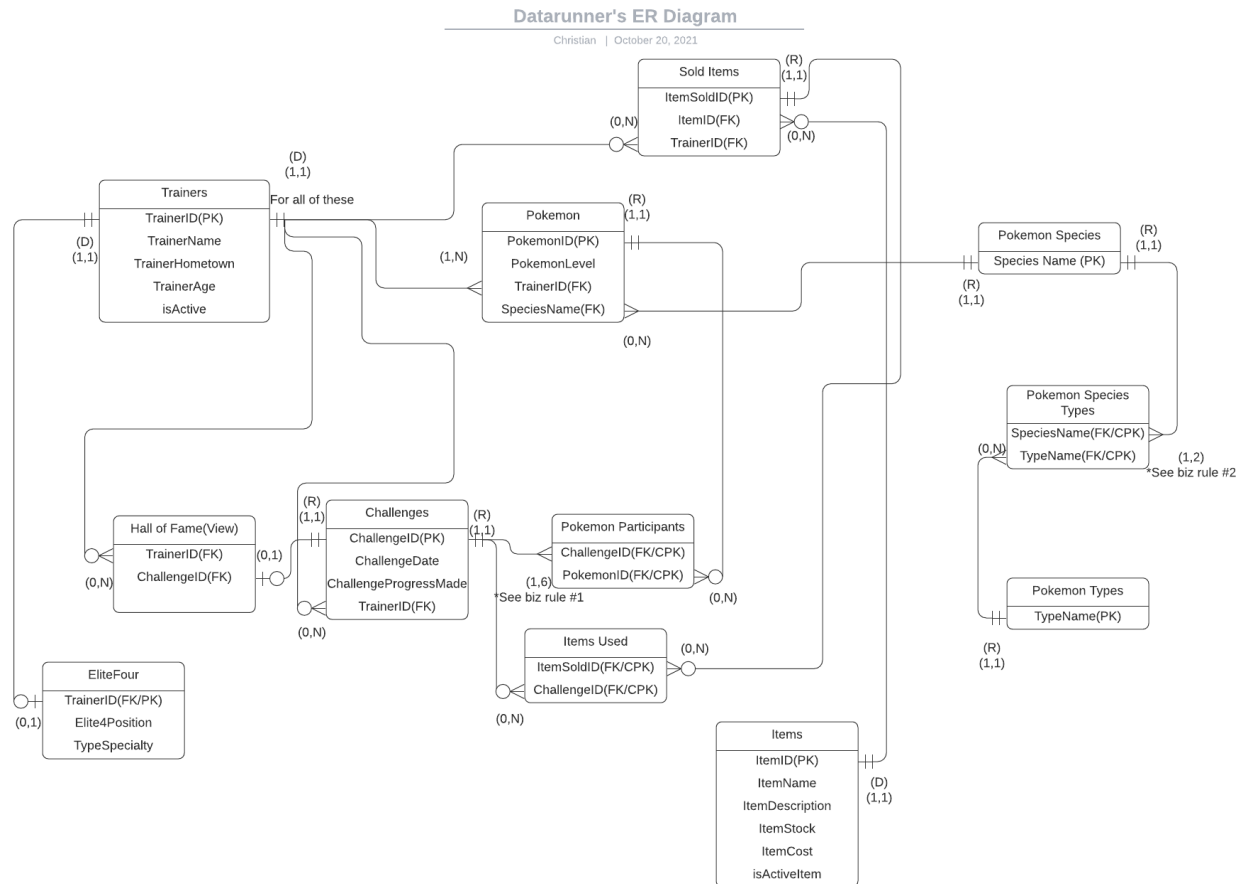
Name: Pokemon Species

Type: Validation

Description: This table is responsible for keeping track of every known species of Pokemon. It functions to ensure that no Pokemon within the Pokemon table is of an invalid species.

Appendix 1: ER Diagram

In order to represent the database visually, our team created an ER diagram. This diagram shows all of the tables, the fields within the tables, and all of the relationships between the tables. From this, we can get a top-down overall understanding of the database structure. Below is the ER diagram representing the database we came up with.



Appendix 2 : Field Specifications

For every attribute (field) of every subject (table), our team put together a detailed specification sheet that specifies the necessary properties of the given field. For example, the Pokemon Level field in the Pokemon table is restricted to values between 1 and 100, inclusive. In essence, these field specifications provide all the important specifications that each field requires to ensure they properly represent a certain aspect of the subject. These specifications can be found below.

Subsection 1: Trainers Field Specifications

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: is Active

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Trainers

Label: isActive

Source Specification: _

Shared By: _

Aliases: _

Description: A setting based on whether or not a trainer is still actively training Pokemon for use in League competition. This is important because we don't want to delete historical data, but we also need a method to filter out non-active trainers.

PHYSICAL ELEMENTS

Data Type: Boolean

Length: _

Decimal Places: _

Input Mask: _

Display Format: _

Character Support: _

Letters (A-Z): _

Numbers (0-9): _

Keyboard (.,/\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: X

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: True

Range of Values: True or False

Edit Rule:

Enter now, edits allowed: X

Enter now, edits not allowed: _

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Trainer Age

Specification Type:

Unique: ☒

Generic: ☐

Replica: ☐

Parent Table: Trainers

Label: Trainer_Age

Source Specification: ☐

Shared By: ☐

Aliases: ☐

Description: ☐ The current age of a trainer. This data is used for League balancing based on age of the participant.

PHYSICAL ELEMENTS

Data Type: Numeric

Length: 3

Decimal Places: 0

Input Mask: ###

Display Format: 000

Character Support:

Letters (A-Z): ☐

Numbers (0-9): ☒

Keyboard (.,/\$#%): ☐

Special (©®™Σπ): ☐

LOGICAL ELEMENTS

Key Type: Non: ☒

Primary: ☐

Foreign: ☐

Alternate: ☐

Key Structure: Simple: ☐

Composite: ☐

Uniqueness: Non-unique: ☒

Unique: ☐

Null Support: Nulls OK: ☐

No nulls: ☒

Values Entered By: User: ☒

System: ☐

Required Value: No: ☐

Yes: ☒

Default Value: ☐

Range of Values: 010-150

Edit Rule:

Enter now, edits allowed: ☒

Enter now, edits not allowed: ☐

Enter later, edits allowed: ☐

Enter later, edits not allowed: ☐

Not determined at this time: ☐

Comparisons Allowed:

Same Field: ☒

ALL ☒

= ☐

> ☐

>= ☐

!= ☐

< ☐

<= ☐

Other Fields: ☐

ALL ☐

= ☐

> ☐

>= ☐

!= ☐

< ☐

<= ☐

Value Expr.: ☒

ALL ☒

= ☐

> ☐

>= ☐

!= ☐

< ☐

<= ☐

Operations Allowed:

Same Field: ☐

ALL ☐

+ ☐

- ☐

* ☐

/ ☐

Other Fields: ☐

ALL ☐

+ ☐

- ☐

* ☐

/ ☐

Value Expr.: ☐

ALL ☐

+ ☐

- ☐

* ☐

/ ☐

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Trainer Hometown

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Trainers

Label: Trainer_Hometown

Source Specification: _

Shared By: _

Aliases: _

Description: _ The town of origin of a trainer. This is necessary for mail communication with the trainer and keeping stats on trainer origins.

PHYSICAL ELEMENTS

Data Type: Alphanumeric

Length: 20

Decimal Places: None

Input Mask: _

Display Format: _ Each word should begin with a capital letter

Character Support:

Letters (A-Z): X

Numbers (0-9): _

Keyboard (./\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: X

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: _ Any valid town name within the known regions of the Pokemon world

Edit Rule:

Enter now, edits allowed:

Enter now, edits not allowed: _ X

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Trainer ID

Specification Type:

Unique: ☐

Generic: ☒

Replica: ☐

Parent Table: Trainers

Label: Trainer_ID

Source Specification: ☐

Shared By: ☐

Aliases: ☐

Description: ☐ A unique identifying number for each trainer that competes in the League challenge. It's assigned upon their first challenge and remains consistent.

PHYSICAL ELEMENTS

Data Type: Numeric

Length: 4

Decimal Places: 0

Input Mask: #####

Display Format: 0000

Character Support:

Letters (A-Z): ☐

Numbers (0-9): ☒

Keyboard (./\$#%): ☐

Special (©®™Σπ): ☐

LOGICAL ELEMENTS

Key Type: Non: ☐

Primary: ☒

Foreign: ☐

Alternate: ☐

Key Structure: Simple: ☒

Composite: ☐

Uniqueness: Non-unique: ☐

Unique: ☒

Null Support: Nulls OK: ☐

No nulls: ☒

Values Entered By: User: ☐

System: ☒

Required Value: No: ☐

Yes: ☒

Default Value: ☐

Range of Values: 0001-9999

Edit Rule:

Enter now, edits allowed: ☐

Enter now, edits not allowed: ☒

Enter later, edits allowed: ☐

Enter later, edits not allowed: ☐

Not determined at this time: ☐

Comparisons Allowed:

Same Field: ☒

ALL ☐

= ☒

> ☐

>= ☐

!= ☐

< ☐

<= ☐

Other Fields: ☐

ALL ☐

= ☐

> ☐

>= ☐

!= ☐

< ☐

<= ☐

Value Expr.: ☒

ALL ☐

= ☒

> ☐

>= ☐

!= ☐

< ☐

<= ☐

Operations Allowed:

Same Field: ☐

ALL ☐

+ ☐

- ☐

* ☐

/ ☐

Other Fields: ☐

ALL ☐

+ ☐

- ☐

* ☐

/ ☐

Value Expr.: ☐

ALL ☐

+ ☐

- ☐

* ☐

/ ☐

NOTES: This field specification is shared by ChallengeID, ItemSoldID, PokemonID, and ItemID

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Trainer Name

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Trainers

Label: Trainer_Name

Source Specification: _

Shared By: _

Aliases: _

Description: _ The name of a trainer who competes in the League challenge, used for all communications involving a trainer.

PHYSICAL ELEMENTS

Data Type: Alphanumeric

Length: 12

Decimal Places: None

Input Mask: _

Display Format: _ The name should be capitalized if it starts with a letter

Character Support:

Letters (A-Z): X

Numbers (0-9): X

Keyboard (.,/\$#%): X

Special (©®™Σπ): X

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: X

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: _

Edit Rule:

Enter now, edits allowed: X

Enter now, edits not allowed: _

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

Subsection 2: Pokemon Field Specifications

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Pokemon Level

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Pokemon

Label: Pokemon_Level

Source Specification: _

Shared By: _

Aliases: _

Description: The level of a given Pokemon used in a challenge.

This data is used for proper referencing of a trainer's Pokemon's power level.

PHYSICAL ELEMENTS

Data Type: Numeric

Length: 3

Decimal Places: None

Input Mask: ###

Display Format: 000

Character Support:

Letters (A-Z): _

Numbers (0-9): X

Keyboard (.,/\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: X

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: 001-100

Edit Rule:

Enter now, edits allowed: X

Enter now, edits not allowed: _

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL X

= _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL X

= _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

Subsection 3: Item Field Specifications

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: is Active Item

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Items

Label: isActiveItem

Source Specification: _

Shared By: _

Aliases: _

Description: A setting based on whether or not an item is still actively sold in the store for use in League competition. This is important because we don't want to delete historical data, but we also need a method to filter out items that are no longer being sold.

PHYSICAL ELEMENTS

Data Type: Boolean

Length: _

Decimal Places: _

Input Mask: _

Display Format: _

Character Support: _

Letters (A-Z): _

Numbers (0-9): _

Keyboard (.,/\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: X

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: True

Range of Values: True or False

Edit Rule:

Enter now, edits allowed: X

Enter now, edits not allowed: _

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Item Cost
 Specification Type:
 Unique: True
 Generic:
 Replica:
 Parent Table: Items
 Label: Item_Cost
 Source Specification:
 Shared By:
 Aliases:
 Description: The numeric value that denotes the monetary value of said item in the store. This will help customers navigate the store, and buy the item, and allow the store to take payment.

PHYSICAL ELEMENTS

Data Type: numeric
 Length: 9
 Decimal Places: 2
 Input Mask: #####
 Display Format: 0,000,000.00
 Character Support:
 Letters (A-Z):
 Numbers (0-9): X
 Keyboard (./\$#%): X
 Special (©®™Σπ):

LOGICAL ELEMENTS

Key Type: Non: ☒ X
 Primary:
 Foreign:
 Alternate:

Key Structure: Simple:
 Composite:

Uniqueness: Non-unique: ☒ X
 Unique:
 Null Support: Nulls OK:
 No nulls: ☒ X
 Values Entered By: User: ☒ X
 System:
 Required Value: No:
 Yes: ☒ X

Default Value:
 Range of Values: 0,000,000.00 to 9,999,999.99
 Edit Rule:
 Enter now, edits allowed: ☒ X
 Enter now, edits not allowed:
 Enter later, edits allowed:
 Enter later, edits not allowed:
 Not determined at this time:

Comparisons Allowed:

Same Field: ☒ X
 ALL ☒ X
 =
 >
 >=
 !=
 <
 <=

Other Fields:
 ALL
 =
 >
 >=
 !=
 <
 <=

Value Expr.: ☒ X
 ALL ☒ X
 =
 >
 >=
 !=
 <
 <=

Operations Allowed:

Same Field:
 ALL X
 +
 -
 *
 /

Other Fields:
 ALL
 +
 -
 *
 /

Value Expr.:
 ALL X
 +
 -
 *
 /

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Item Description
Specification Type:
Unique: ☐ True
Generic: ☐
Replica: ☐
Parent Table: ☐ Items
Label: Item Description
Source Specification:
Shared By:
Aliases:
Description: The text/string that is used as a spoken or written representation of the item and what it does/ it used for.

PHYSICAL ELEMENTS

Data Type: Alphanumeric
Length: 320
Decimal Places: None
Input Mask:
Display Format:
Character Support:
Letters (A-Z): ☒ X
Numbers (0-9): ☒ X
Keyboard (.,/\$#%): ☒ X
Special (©®™Σπ): ☒ X

LOGICAL ELEMENTS

Key Type: Non: ☒ X
Primary: ☐
Foreign: ☐
Alternate: ☐
Key Structure: Simple: ☐
Composite: ☐
Uniqueness: Non-unique: ☒ X
Unique: ☐
Null Support: Nulls OK: ☐
No nulls: ☒ X
Values Entered By: User: ☒ X
System: ☐
Required Value: No: ☐
Yes: ☒ X
Default Value:
Range of Values:
Edit Rule:
Enter now, edits allowed: ☒ X
Enter now, edits not allowed: ☐
Enter later, edits allowed: ☐
Enter later, edits not allowed: ☐
Not determined at this time: ☐

Comparisons Allowed:

Same Field: ☒ X
ALL ☐
= ☒ X
> ☐
>= ☐
!= ☐
< ☐
<= ☐

Other Fields: ☐
ALL ☐
= ☐
> ☐
>= ☐
!= ☐
< ☐
<= ☐

Value Expr.: ☒ X
ALL ☐
= ☒ X
> ☐
>= ☐
!= ☐
< ☐
<= ☐

Operations Allowed:

Same Field: ☐
ALL ☐
+ ☐
- ☐
* ☐
/ ☐

Other Fields: ☐
ALL ☐
+ ☐
- ☐
* ☐
/ ☐

Value Expr.: ☐
ALL ☐
+ ☐
- ☐
* ☐
/ ☐

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: _ Item Name

Specification Type:

Unique: _ True

Generic: _

Replica: _

Parent Table: _ Items

Label: _ Item Name

Source Specification: _

Shared By: _

Aliases: _

Description: _ The name of an item in the shop. Used for all formal references to that given item.

PHYSICAL ELEMENTS

Data Type: Alphanumeric

Length: _ 128

Decimal Places: _ None

Input Mask: _

Display Format: _ The letter of each word in the name should be capitalized

Character Support:

Letters (A-Z): _ True

Numbers (0-9): _ True

Keyboard (.,/\$#%): _ True

Special (©®™Σπ): _ True

LOGICAL ELEMENTS

Key Type: Non: X

 Primary: _

 Foreign: _

 Alternate: _

Key Structure: Simple: _

 Composite: _

Uniqueness: Non-unique: X

 Unique: _

Null Support: Nulls OK: _

 No nulls: X

Values Entered By: User: X

 System: _

Required Value: No: _

 Yes: X

Default Value: _

Range of Values: _

Edit Rule:

Enter now, edits allowed: X

Enter now, edits not allowed: _

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Item Stock
 Specification Type:
 Unique: True
 Generic:
 Replica:
 Parent Table: Items
 Label: Item Stock
 Source Specification:
 Shared By:
 Aliases:
 Description: The numeric values that denotes the stock of said item in the store. This will help the League keep track of their store inventory.

PHYSICAL ELEMENTS

Data Type: Numeric
 Length: 5
 Decimal Places: 0
 Input Mask: #####
 Display Format: 00000
 Character Support:
 Letters (A-Z):
 Numbers (0-9): X
 Keyboard (./\$#%):
 Special (©®™Σπ):

LOGICAL ELEMENTS

Key Type: Non: X
 Primary:
 Foreign:
 Alternate:

Key Structure: Simple:
 Composite:

Uniqueness: Non-unique: X
 Unique:
 Null Support: Nulls OK:
 No nulls: X
 Values Entered By: User: X
 System:
 Required Value: No:
 Yes: X

Default Value:
 Range of Values: 00001-99999
 Edit Rule:
 Enter now, edits allowed: X
 Enter now, edits not allowed:
 Enter later, edits allowed:
 Enter later, edits not allowed:
 Not determined at this time:

Comparisons Allowed:

Same Field: X
 ALL X
 =
 >
 >=
 !=
 <
 <=

Other Fields:
 ALL
 =
 >
 >=
 !=
 <
 <=

Value Expr.: X
 ALL X
 =
 >
 >=
 !=
 <
 <=

Operations Allowed:

Same Field: X
 ALL X
 +
 -
 *
 /

Other Fields:
 ALL
 +
 -
 *
 /

Value Expr.: X
 ALL X
 +
 -
 *
 /

NOTES:

Subsection 4: E4 Field Specifications

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Elite Four Position

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: EliteFour

Label: Elite_Four_Position

Source Specification: _

Shared By: _

Aliases: _

Description: _ The placement of an Elite Four member in the Challenge. IE, if they come first, second, third, fourth, or are the champion.

PHYSICAL ELEMENTS

Data Type: Numeric

Length: 1

Decimal Places: 0

Input Mask: #

Display Format: 0

Character Support:

Letters (A-Z): _

Numbers (0-9): X

Keyboard (.,/\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: x

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: 1-5

Edit Rule:

Enter now, edits allowed: x

Enter now, edits not allowed: _

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: _

ALL X

= _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: _

ALL X

= _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Type Speciality

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: EliteFour

Label: Type_Speciality

Source Specification: _

Shared By: _

Aliases: _

Description: _ The specialty (in regards to Pokemon) that each elite four member focuses on

PHYSICAL ELEMENTS

Data Type: Alphanumeric

Length: 10

Decimal Places: None

Input Mask: _

Display Format: _ The type of choice should be capitalized

Character Support:

Letters (A-Z): X

Numbers (0-9): _

Keyboard (./\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: X

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: Any Pokemon type officially recognized in the National Pokedex.

Edit Rule:

Enter now, edits allowed: X

Enter now, edits not allowed: _

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: _

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: _

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

Subsection 5: Challenge Field Specifications

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Challenge Date

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Challenges

Label: Challenge_Date

Source Specification: _

Shared By: _

Aliases: _

Description: The date that the challenge was attempted. This allows the League to monitor historical patterns in the challenges.

PHYSICAL ELEMENTS

Data Type: TIMESTAMP

Length: -

Decimal Places: _

Input Mask: _

Display Format: _

Character Support: _

Letters (A-Z): _

Numbers (0-9): X

Keyboard (.,/\$#%): X

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X

Primary: _

Foreign: _

Alternate: _

Key Structure: Simple: _

Composite: _

Uniqueness: Non-unique: X

Unique: _

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: _

Edit Rule:

Enter now, edits allowed: _

Enter now, edits not allowed: X

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Challenge_Progress_Made
 Specification Type:
 Unique: True
 Generic:
 Replica:
 Parent Table: Challenges
 Label: Challenge_Progress_Made
 Source Specification:
 Shared By:
 Aliases:
 Description: The distance a trainer made it in the League
 Challenge. This data is used to see which member of the Elite Four the
 trainer got to before they were eliminated or succeeded.

PHYSICAL ELEMENTS

Data Type: numeric
 Length: 1
 Decimal Places: 0
 Input Mask: #
 Display Format: 0
 Character Support:
 Letters (A-Z):
 Numbers (0-9): X
 Keyboard (./\$#%):
 Special (©®™Σπ):

LOGICAL ELEMENTS

Key Type: Non: X
 Primary:
 Foreign:
 Alternate:
 Key Structure: Simple:
 Composite:
 Uniqueness: Non-unique: X
 Unique:
 Null Support: Nulls OK:
 No nulls: X
 Values Entered By: User: X
 System:
 Required Value: No:
 Yes: True
 Default Value: 1
 Range of Values: 1 to 5
 Edit Rule:
 Enter now, edits allowed:
 Enter now, edits not allowed: X
 Enter later, edits allowed:
 Enter later, edits not allowed:
 Not determined at this time:

Comparisons Allowed:

Same Field: X
 ALL X
 =
 >
 >=
 !=
 <
 <=

Other Fields:
 ALL
 =
 >
 >=
 !=
 <
 <=

Value Expr.: X
 ALL X
 =
 >
 >=
 !=
 <
 <=

Operations Allowed:

Same Field:
 ALL
 +
 -
 *
 /

Other Fields:
 ALL
 +
 -
 *
 /

Value Expr.:
 ALL
 +
 -
 *
 /

NOTES:

Subsection 6: Pokemon Species Field

Specifications

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Species Name

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Pokemon Species

Label: SpeciesName

Source Specification: _

Shared By: _

Aliases: _

Description: The unique name for a given species of Pokemon.

This allows us to keep a record of every known Pokemon species to provide identifying information on the species of a given Pokemon used by a trainer.

PHYSICAL ELEMENTS

Data Type: Alphanumeric

Length: 20

Decimal Places: None

Input Mask: _

Display Format: The first letter should be capitalized.

Character Support:

Letters (A-Z): X

Numbers (0-9): _

Keyboard (.,/\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: _

Primary: X _

Foreign: _

Alternate: _

Key Structure: Simple: X

Composite: _

Uniqueness: Non-unique: _

Unique: X

Null Support: Nulls OK: _

No nulls: _

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: Any valid species of Pokemon recognized within the National Pokedex.

Edit Rule:

Enter now, edits allowed: _

Enter now, edits not allowed: _ X

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X _

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

Subsection 7: Pokemon Types Field

Specifications

FIELD SPECIFICATIONS

GENERAL ELEMENTS

Field Name: Type Name

Specification Type:

Unique: X

Generic: _

Replica: _

Parent Table: Pokemon Types

Label:

Source Specification: _

Shared By: _

Aliases: _

Description: The name of a specific Pokemon type. This is important because it allows us to relate the species of a given Pokemon to its related type(s) for analysis on type usage.

PHYSICAL ELEMENTS

Data Type: Alphanumeric

Length: 15

Decimal Places: None

Input Mask: _

Display Format: The first letter should be capitalized

Character Support:

Letters (A-Z): X

Numbers (0-9): _

Keyboard (./\$#%): _

Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: _

Primary: X

Foreign: _

Alternate: _

Key Structure: Simple: X

Composite: _

Uniqueness: Non-unique: _

Unique: X

Null Support: Nulls OK: _

No nulls: X

Values Entered By: User: X

System: _

Required Value: No: _

Yes: X

Default Value: _

Range of Values: Any valid Pokemon type recognized within the National Pokedex.

Edit Rule:

Enter now, edits allowed: _

Enter now, edits not allowed: X

Enter later, edits allowed: _

Enter later, edits not allowed: _

Not determined at this time: _

Comparisons Allowed:

Same Field: X

ALL _

= X

> _

>= _

!= _

< _

<= _

Other Fields: _

ALL _

= _

> _

>= _

!= _

< _

<= _

Value Expr.: X

ALL _

= X

> _

>= _

!= _

< _

<= _

Operations Allowed:

Same Field: _

ALL _

+ _

- _

* _

/ _

Other Fields: _

ALL _

+ _

- _

* _

/ _

Value Expr.: _

ALL _

+ _

- _

* _

/ _

NOTES:

Appendix 3 : BR Specifications

Additionally, in order to guide future data integrity, we have imposed the following business rules to clearly define the behavior of the database. Referring to Pokemon and trainer interactions, A trainer may only have up to six Pokemon in their party at one time, and can't have less than 1 in their party at any time. Referring to Pokemon and species, any given Pokemon must be between level 1 and level 100, and a given Pokemon species must have 1 type but have no more than 2 types.

Subsection 1: Pokemon and Trainer Interactions

BUSINESS RULE SPECIFICATIONS

RULE INFORMATION

Statement: A trainer may only have up to six Pokemon in their party at one time, and can't have less than 1 in their party at any time.

Constraint: For any given challenge, at least one and up to 6 Pokemon will be associated with it. In other words, the Challenges table has a (1,6) degree of participation with the Pokemon Participants table.

Type: Database Oriented: X

Application Oriented: _

Category: Field Specific: _

Relationship Specific: X

Test On: Insert: X

Delete: X

Update: X

STRUCTURES AFFECTED

Field Names: _

Table Names: Challenges, Pokemon Participants

FIELD ELEMENTS AFFECTED

Physical Elements: Data Type: _

Length: _

Decimal Places: _

Character Support: _

Input Mask: _

Display Format: _

Logical Elements: Key Type: _

Key Structure: _

Uniqueness: _

Null Support: _

Values Entered By: _

Default Value: _

Range of Values: _

Comparisons Allowed: _

Operations Allowed: _

Edit Rule: _

ACTION TAKEN

The degree of participation between Challenges and Pokemon Participants was set to (1,6).

NOTES: _

Subsection 2: Pokemon and Species Interactions

BUSINESS RULE SPECIFICATIONS

RULE INFORMATION

Statement: A given Pokemon species must have 1 type but have no more than 2 types.

Constraint: A Pokemon species record in the Pokemon Species table must be associated with at least one record but no more than two in the Pokemon Species Types table.

Type: Database Oriented: X

Application Oriented: _

Category: Field Specific: _

Relationship Specific: X

Test On: Insert: X

Delete: X

Update: X

STRUCTURES AFFECTED

Field Names: _

Table Names: Pokemon Species, Pokemon Species Types

FIELD ELEMENTS AFFECTED

Physical Elements: Data Type: _

Length: _

Decimal Places: _

Character Support: _

Input Mask: _

Display Format: _

Logical Elements: Key Type: _

Key Structure: _

Uniqueness: _

Null Support: _

Values Entered By: _

Default Value: _

Range of Values: _

Comparisons Allowed: _

Operations Allowed: _

Edit Rule: _

ACTION TAKEN

The degree of participation between the Pokemon Species table and the Pokemon Species Types table was set to (1,2).

NOTES: _

BUSINESS RULE SPECIFICATIONS

RULE INFORMATION

Statement: Any given Pokemon must be between level 1 and level 100.

Constraint: The Pokemon Level field can't have a value lower than 1 or greater than 100.

Type: Database Oriented: ☒ X

Application Oriented ☐ _

Category: Field Specific: ☐ _

Relationship Specific: ☐ _

Test On: Insert: ☒ X

Delete: ☐ _

Update: ☐ _

STRUCTURES AFFECTED

Field Names: PokemonLevel

Table Names: ☐ _

FIELD ELEMENTS AFFECTED

Physical Elements: Data Type: ☐ _

Length: ☐ _

Decimal Places: ☐ _

Character Support: ☐ _

Input Mask: ☐ _

Display Format: ☐ _

Logical Elements: Key Type: ☐ _

Key Structure: ☐ _

Uniqueness: ☐ _

Null Support: ☐ _

Values Entered By: ☐ _

Default Value: ☐ _

Range of Values: ☒ X

Comparisons Allowed: ☐ _

Operations Allowed: ☐ _

Edit Rule: ☐ _

ACTION TAKEN

The range of values for the PokemonLevel field was set to 1 to 100.

NOTES: ☐ _

