**The National Archives**

**“Traces Through Time”**

**Graph Based Data Schema**

**Modelled in the** [**CYPHER**](http://neo4j.com/developer/cypher-query-language/) **Query Language**

**v2.1**

**June 2016**

**1. NODES**

Nodes are shown in the form “**:nodeExample”** (bold camelCase).

Node property names are in lower-case **bold**.

Variable examples of property values are in *green*.

List examples of property values are in blue.

NB. All nodes have an optional **comments** property for general notes or comments of any kind.

**2. EDGES**

Edges (predicates) are shown in the form “[:edgeExample]” (bracketed camelCase).

Edge properties are in red camelCase.

Edge properties are always *optional* unless otherwise stated.

NB. All edges have an optional comments property for general notes or comments of any kind.

*Property names are generic wherever possible (ref, type, name) to avoid proliferation of names.*

*The examples provided throughout this document come as unqualified CYPHER statements, i.e. statements without a preliminary CREATE, MERGE or MATCH verb.*

*This data model has also been expressed as a JSON schema:* cf. TTTJSONschema.v2-1.json

*An illustrative JSON instance is also available for reference:* cf. PaulMcCartney.json

# PART 1: NODES

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**:age**

**end** {int} optional *(46)*

**name** {string} optional *(mid-forties)*

**start** {int} mandatory *(44)*

**type** {list} optional APPROX|EXACT

*Use age range (***start** *and* **end***) where applicable (otherwise* **start** *only)*

*Use* **name** *to record the original textual description of age*

*Use* **type** *to record whether the age is exact or approximate*

**Example:** *“Harrison was only 14 when he first auditioned for The Quarrymen in March 1958”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison”})

(x:person)-[:hasAge {dateStart: 195803}]->(:age {start: 14})

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**:alias**

**name** {string} mandatory *(Longshanks, Jack the Ripper, Mata Hari, Pelé)*

[:hasParticle] {type: “descriptive|nobiliary|prepositional”} **:particle**

optional; 0 or 1

**Example:** *“Paul McCartney is affectionately known to fans as Macca”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Paul”})

(x:person)-[:hasAliases {type: “nickname”}]->(:alias {name: “Macca”})

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**:award**

**name** {string} mandatory *(BA, MSc, KB, VC, Victoria Cross)*

[:awardAliases] {type: “acronym|abbreviation|alternative|full|nickname”} **:award**

optional; 0 or more

*Use type where applicable with a suitable value*

**Example:** *“Paul McCartney, MBE (Member of the Most Excellent Order of the British Empire)”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Paul”})

(x:person)-[:hasAwards]->(:award {name: “MBE”})-[:awardAliases {type: “full”}]->(:award {name: “Member of the Most Excellent Order of the British Empire”})

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**:context**

**name** {string} mandatory

**ref** {string} optional *(para.1, sub-sect.2, B33)*

*Use* **name** *to capture the immediate context (eg. sentence, cell or simply 50 chars either side) in which a person is found.*

*Use* **ref** *to record an original machine-readable or system identifier*

[:hasDay] {type: “APPROX|EXACT”} **:day**

optional; 0 or 1

[:hasEndYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasMonth] {type: “APPROX|EXACT”} **:month**

optional; 0 or 1

[:hasStartYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasTime] {type: “APPROX|EXACT”} **:time**

optional; 0 or 1

[:hasYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

*Where possible this should be the date of the entry or event described in the immediate context (eg. sentence or cell) in preference to the date of the wider container* ***:document***

[:inContainer] **:document**

optional; 0 or 1

**Example:** *“In 2002, the airport in Lennon's home town was renamed Liverpool John Lennon Airport”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:inContainer]->(a:context {name: “In 2002, the airport in Lennon's home town was renamed Liverpool John Lennon Airport”)

(a:context)-[:hasYear]->(:year {value: 2002})

(a:context)-[:inContainer]->(:document {URL: “http://en.wikipedia.org/wiki/John\_Lennon#Legacy”})

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**:day**

**name** {string} optional *(16th)*

**value** {int} mandatory *(16)*

*Use* **name** *to record the original textual date description, if desired*

[:hasMonth] {type: “APPROX|EXACT”} **:month**

optional; 0 or 1

**Example: “***Brian Epstein dismissed Pete Best from The Beatles on 16 August 1962”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Epstein”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Brian”})

(y:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Best”})

(y:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Pete”})

(a:organisation {name: “The Beatles”, genre: “music”, type: “group”})

(b:event {genre: “occupation”, type: “dismissal”})-[:hasDay]->(:day {value: 16})-[:hasMonth]->(:month {value: 8})-[:hasYear]->(:year {value: 1962})

(b:event)-[:hasOrganisations]->(a:organisation)

(y:person)-[:hasEvents]->(b:event)

(y:person)-[:hasRoles {dateEnd: 19620816}]->(a:organisation)

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**:document**

**filepath** {string} optional *(c:\files\example.txt)*

**name**  {string} optional *(PROB 11/1/1)*

**quality** {list} optional high|low|medium

**ref** {string} optional *(D967088)*

**type** {list} optional metadata|page|paragraph|row|spreadsheet|webpage

**URL** {string} optional *(discovery.nationalarchives.gov.uk/details/r/D967088)*

*Use to refer to either the parent data structure in which a person is found (eg. webpage or spreadsheet) or a smaller, discrete unit within such a data structure (eg. paragraph or row).*

*For an even smaller unit of contextual description (eg. sentence or cell) see* **:context**

*For a much wider container of context (eg. website or folder) see* **:source**

*Use* **name** *to record an original reference no.*

*Use* **quality** *to record an indication of the quality and/or reliability of the source data*

*Use* **ref** *to record an original machine-readable or system identifier*

*Use* **type** *to record the format of the container data structure*

*Use* **URL** *for a containing webpage (or sub-section thereof if identified by a ‘#’ fragment identifier)*

[:hasDay] {type: “APPROX|EXACT”} **:day**

optional; 0 or 1

[:hasEndYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasMonth] {type: “APPROX|EXACT”} **:month**

optional; 0 or 1

[:hasStartYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasTime] {type: “APPROX|EXACT”} **:time**

optional; 0 or 1

[:hasYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

*Where possible this should be the date of the entry or event described in the immediate container* ***:document*** *(eg. paragraph or row) in preference to the date of the wider container* ***:document*** *(eg. webpage or spreadsheet). Otherwise, only date the wider container* ***:document***

[:heldBy] **:organisation**

optional; 0 or 1

*Use to record the repository or institution which now curates the original document or dataset*

[:inContainer] **:document**|**:source**

optional; 0 or 1

**Example:** *“Lennon continues to be mourned throughout the world and has been the subject of numerous memorials and tributes.” [Wikipedia, page last modified on 26 October 2014 at 07:14]*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:inContainer]->(a:context {name: “Lennon continues to be mourned throughout the world and has been the subject of numerous memorials and tributes.”)

(a:context)-[:inContainer]->(b:document {type: “paragraph”, URL: “http://en.wikipedia.org/wiki/John\_Lennon#Legacy”})

(b:document)-[:inContainer]->(c:document {type: “webpage”, URL: “http://en.wikipedia.org/wiki/John\_Lennon”})

(c:document)-[:hasDay]->(:day {value: 26})-[:hasMonth]->(:month {value: 10})-[:hasYear]->(:year {value: 2014})

(c:document)-[:hasTime]->(:time {timestamp: “2014-10-26T07:14:00”})

(c:document)-[:inContainer]->(:source {type: “website”, URL: “http://en.wikipedia.org/wiki”})

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**:event**

**genre** {list} optional education|maritime|military|music|occupation|personal|sport|recreation

**type** {list} mandatory

baptism|birth|christening|conviction|death|discharge|dismissal|divorce|

enrolment|graduation|marriage|resignation|retirement|separation|service

*The record of a notable personal life event (eg. birth, marriage, death, military service) or other notable organisational or world event (eg. attack, ceremony, closure, declaration, fire, opening, transportation)*

[:hasDay] {type: “APPROX|EXACT”} **:day**

optional; 0 or 1

[:hasEndYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasMonth] {type: “APPROX|EXACT”} **:month**

optional; 0 or 1

[:hasOrganisations] {dateEnd: \*, dateStart: \*, precedence: 1} **:organisation**

optional; 0 or more

*To indicate association with an organisation (eg. company) or other body (eg. team).*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple organisations where known.*

[:hasPlaces] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, type: \*} **:place**

optional; 0 or more

*To indicate location(s) associated with the event.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple locations where known.*

*Use type to indicate the nature of the relationship to the place where known,*

*eg.* battlefield|home|school|university|venue|work

[:hasStartYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasTime] {type: “APPROX|EXACT”} **:time**

optional; 0 or 1

[:hasYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

**Example:** *“George Harrison was born in Liverpool, Lancashire, England, on 25 February 1943”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “George”})

(x:person)-[:hasEvents]->(a:event {type: “birth”})

(a:event)-[:hasPlaces]->(b:place {name: “Liverpool”})

(b:place)-[:withinPlaces]->(c:place {name: “Lancashire”})

(c:place)-[:withinPlaces]->(:place {name: “England”})

(a:event)-[:hasDay]->(:day {value: 25})-[:hasMonth]->(:month {value: 2})-[:hasYear]->(:year {value: 1943})

**Example:** *“The Beatles last ever live concert was on the roof of Apple HQ on 30 January 1969”*

(y:organisation {name: “The Beatles”, genre: “music”, type: “group”})

(z:organisation {name: “Apple”, genre: “music”, type: “company”})

(a:event {genre: “music”, type: “concert”})

(a:event)-[:hasOrganisations]->(y:organisation)

(a:event)-[:hasPlaces]->(:place {name: “Apple HQ”})

(a:event)-[:hasDay]->(:day {value: 30})-[:hasMonth]->(:month {value: 1})-[:hasYear]->(:year {value: 1969})

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**:familyName**

**name** {string}mandatory  *(Johnson, Jonson, Jonners)*

**type** {list} optional abbreviation|alternative|full|initial|nickname|pseudonym|variant

[:familyNameAliases] {type:

“abbreviation|alternative|full|initial|nickname|pseudonym|uncertain|variant”} **:familyName**

optional; 0 or more

*For an alternative form of* ***:familyName*** *only*

*For entire forename & family name substitution, see* ***:alias***

*Use type where applicable with a suitable value, eg.*

*-* abbreviation *for shortened forms (eg. Mack. for Mackintosh)*

*-* alternative *for local (intra-document) spelling variations*

*-* full *for full form (eg. Spencer-Churchill) of a shortened name (Churchill)*

*-* initial *for initial letter only (eg. H for Hillyard)*

*-* nickname *for a nickname (eg. Smitty for Smith; Aggers for Agnew)*

*-* pseudonym *for an adopted name (eg. Bowie for Jones; Loren for Scicolone)*

*-* variant *for a recognised variant (eg. derived from FaNUK)*

[:hasParticle] {type: “descriptive|nobiliary|prepositional”} **:particle**

optional; 0 or 1

**Example:** *“John Lennon sometimes jokingly referred to himself as John Lemon”*

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “John”})

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:hasFamilyNames {type: “nickname”}]->(:familyName {name: “Lemon”})

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**:foreName**

**name** {string} mandatory  *(William, Willie, Willy, Will, Wm, W, Bill, Billy)*

**type** {list} optional

abbreviation|alternative|diminutive|full|initial|nickname|pseudonym|variant

[:foreNameAliases] {preference: 0, type: “abbreviation|alternative|diminutive|full|initial|nickname|pseudonym|variant”}

**:foreName**

optional; 0 or more

*For an alternative form of* ***:foreName*** *only*

*For entire forename & family name substitution, see* ***:alias***

*Use preference to indicate where an alias is also the ‘known as’ forename (0 by default)*

*Use type where applicable with a suitable value, eg.*

*-* abbreviation *for shortened forms (eg. Wm for William)*

*-* alternative *for local (intra-document) spelling variations*

*-* diminutive *for familiar forms (eg. Jim for James; Polly for Mary; Rick for Richard)*

*-* full *for full form of shortened names (eg. Robert for Rob)*

*-* initial *for initial letter only (eg. M for Matthew)*

*-* nickname *for a nickname (eg. Buster, Spike, Trigger)*

*-* pseudonym *for an adopted name (eg. Sigourney for Susan)*

*-* variant *for a recognised variant (eg. Mathew for Matthew)*

[:hasParticle] {type: “descriptive|nobiliary|prepositional”} **:particle**

optional; 0 or 1

**Example:** *“John Winston Lennon added Ono as a middle name by deed poll on 22 April 1969”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “John”})

(x:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Winston”})

(x:person)-[:hasForeNames {order: 3, dateStart: 19690422}]->(:foreName {name: “Ono”})

**Example:** *“Some sources give Harold as George Harrison's middle name; others dispute this”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison”})

(x:person)-[:hasForeNames {certain: 1, order: 1}]->(:foreName {name: “George”})

(x:person)-[:hasForeNames {certain: 0, order: 2}]->(:foreName {name: “Harold”})

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**:month**

**name** {string} optional *(Sept., September)*

**value** {int} mandatory *(9)*

*Use* **name** *to record the original textual date description, if desired.*

[:hasYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

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**:nationality**

**name** {string} mandatory *(British, Irish, French, German)*

**ref** {id} optional *(GB, IE, FR, DE)*

**Example:** *“Ringo Starr is still British despite living predominantly in LA and Monte Carlo”*

(x:person)-[:hasAliases {type: “pseudonym”}]->(:alias {name: “Ringo Starr”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “LA”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “Monte Carlo”})

(x:person)-[:hasNationalities {order: 1}]->(:nationality {ref: “GB”, name: “British”})

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**:occupation**

**genre** {list} optional education|finance|industry|maritime|military|music|sport|recreation

**name** {string} mandatory *(police, policeman, police constable, PC, bobby)*

[:hasOrganisations] {dateEnd: \*, dateStart: \*, precedence: 1} **:organisation**

optional; 0 or more

*To indicate association with an organisation (eg. company) or other body (eg. team).*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple organisations where known.*

[:hasPlaces] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, type: \*} **:place**

optional; 0 or more

*To indicate location(s) associated with the event.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple locations where known.*

*Use type to indicate the nature of the relationship to the place where known,*

*eg.* home|school|university|work

[:occupationAliases] {type: “abbreviation|acronym|alternative|full|nickname|variant”}

**:occupation**

optional; 0 or more

*Use type where applicable with a suitable value, eg.*

*-* abbreviation *for shortened forms (eg. Head for Headteacher)*

*-* acronym *for an acronym (eg. WREN for Women's Royal Naval Service)*

*-* alternative *for local (intra-document) spelling variations*

*-* full *for full form of shortened forms (eg. police constable for PC)*

*-* nickname *for a nickname (eg. bobby for policeman, navvy for navigator)*

*-* variant *for a recognised variant (eg. police / policeman / police constable)*

**Example:** *“The Beatles had two principal drummers between 1960 and 1970”*

(y:organisation {name: “The Beatles”, genre: “music”, type: “group”})

(z:occupation {genre: “music”, name: “drummer”})

(z:occupation)-[:hasOrganisations {dateStart: 1960, dateEnd: 1970}]->(y:organisation)

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**:organisation**

**genre** {list} optional education|finance|industry|maritime|military|music|sport|recreation

**name** {string} mandatory *(Co-operative Society, King’s Fusiliers, Leeds United AFC)*

**ref** {id} optional *(66, 31)*

**type** {list} optional bank|club|factory|group|regiment|school|team|university

[:organisationAliases] {type:

“abbreviation|acronym|alternative|full|nickname|variant”} **:organisation**

optional; 0 or more

*Use type where applicable with a suitable value, eg.*

*-* abbreviation *for shortened forms (eg. Marks for Marks & Spencer)*

*-* acronym *for an acronym (eg. TNA for The National Archives)*

*-* alternative *for local (intra-document) spelling variations*

*-* full *for full form of shortened forms (eg. Leeds United Football Club for LUFC)*

*-* nickname *for a nickname (eg. Beeb for BBC)*

*-* variant *for a recognised variant (eg. fire brigade / fire service)*

[:hasPlaces] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, type: \*} **:place**

optional; 0 or more

*To indicate location(s) associated with the organisation.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple locations where dates not known.*

*Use type to indicate the nature of the relationship to the place where known,*

*eg.* headquarters|home|origin|school|university|work

**Example: “***The Beatles, aka The Fab Four”*

(y:organisation {name: “The Beatles”, genre: “music”, type: “group”})

(y:organisation)-[:organisationAliases {type: “nickname”}]->(:organisation {name: “The Fab Four”})

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**:particle**

**name** {list} mandatory ap|bin|d’|da|de|de la|del|della|di|do|dos|du|of|the|van|von

*To capture nobiliary particles or other descriptive/prepositional information in names and aliases*

**Example:** *“Beatles-Platz was opened in Hamburg in 2008 by the Mayor, Ole von Beust”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Beust”})-[:hasParticle {type: “nobiliary”}]->(:particle {name: “von”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Ole”})

(a:event {genre: “municipal”, type: “opening”})-[:hasPlaces]->(b:place {name: “Hamburg”})

(a:event)-[:hasYear]->(:year {value: 2008})

(x:person)-[:hasRoles {name: “mayor”}]->(b:place)

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**:person**

**ref** {id} mandatory *(TTT000000001)*

*Property name is ‘ref’ (not ‘id’) to avoid conflict with Neo4j’s in-built node ‘id’*

**type** {list} mandatory FEMALE|MALE|OTHER|UNKNOWN

*Values can be inferred from document or from conventional name usage; otherwise unknown*

**timestamp** {timestamp} mandatory *(2016-06-18T00:00:00)*

*To indicate the date/time that a person was added to a TTT database or record*

[:inContainer] **:context**|**:document**|**:source**

mandatory

*To capture the context, document or data source in which a person is found*

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**:place**

**name** {string} mandatory *(The Vicarage, King Street, Soho, London, Devon, England, SW1A)*

**type** {list} optional city|country|county|dwelling|location|region|street|town|village

[:placeAliases] {type:

“abbreviation|acronym|alternative|full|nickname|postcode|variant”} **:place**

optional; 0 or more

*Use type where applicable with a suitable value, eg.*

*-* abbreviation *for shortened forms (eg. Bury for Bury St Edmunds)*

*-* acronym *for an acronym (eg. UK for United Kingdom)*

*-* alternative *for local (intra-document) spelling variations*

*-* full *for full form of shortened forms (eg. Kingston upon Hull for Hull)*

*-* nickname *for a nickname (eg. Blighty for Britain)*

*-* postcode *for a postcode (eg. W13 for West Ealing)*

*-* variant *for a recognised variant (eg. Newcastle on Tyne / Newcastle upon Tyne)*

[:hasPlaces] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, type: \*} **:place**

optional; 0 or more

*To indicate another place which is wholly or partially contained by this place.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple locations where dates not known.*

[:withinPlaces] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, type: \*} **:place**

optional; 0 or more

*To indicate another place which wholly or partially contains this place.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple locations where dates not known.*

**Example:** *“Harrison lived for his first six years in Arnold Grove, Wavertree, Liverpool, L15 8HP”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison“})

(x:person)-[:hasPlaces {type: “home”}]->(a:place {name: “Arnold Grove”, type: “street”})

(a:place)-[:placeAliases {type: “postcode”}]->(:place {name: “L15 8HP”, type: “street”})

(a:place)-[:withinPlaces]->(b:place {name: “Wavertree”, type: “location”})

(b:place)-[:withinPlaces]->(:place {name: “Liverpool”, type: “city”})

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**:reference**

**genre** {list} optional airforce|army|maritime|military|navy|personal|police|prison

**name** {string} mandatory *(184691, E17498A, No.42)*

**type** {list} optional catalogue|certificate|discharge|enrolment|passport|service

**Example:** *“In 1971, Lennon’s home phone no. at Tittenhurst Park was Ascot 23022”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “Tittenhurst Park”})

(x:person)-[:hasReferences {certain: 1, dateStart: 1971}]->(:reference {genre: “personal”, name: “Ascot 23022”, type: “telephone number”})

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**:source**

**name** {string} optional

**quality** {list} optional high|low|medium

**ref**  {string} optional

**type** {list} optional book|catalogue|dataset|folder|series|website

**URL** {string} optional

*To capture information regarding the wider document container (eg. website or folder)*

*Use* **name** *to record an original reference no.*

*Use* **quality** *to record an indication of the quality and/or reliability of the source data*

*Use* **ref** *to record an original machine-readable or system identifier*

*Use* **type** *to record the format of the document container*

*Use* **URL** *for a containing website*

[:hasDay] {type: “APPROX|EXACT”} **:day**

optional; 0 or 1

[:hasEndYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasMonth] {type: “APPROX|EXACT”} **:month**

optional; 0 or 1

[:hasStartYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:hasTime] {type: “APPROX|EXACT”} **:time**

optional; 0 or 1

[:hasYear] {type: “APPROX|EXACT”} **:year**

optional; 0 or 1

[:heldBy] **:organisation**

optional; 0 or 1

*Use to record the repository or institution which curates the catalogue, dataset, website etc.*

**Example:** *“See John Lennon’s Wikipedia entry at http://en.wikipedia.org/wiki/John\_Lennon”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “John”})

(x:person)-[:inContainer]->(a:document {type: “webpage”, URL: “http://en.wikipedia.org/wiki/John\_Lennon”})

(a:document)-[:inContainer]->(:source {type: “website”, URL: “http://en.wikipedia.org/wiki”})

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**:time**

**name** {string} optional *(11th hour of the 11th day of the 11th month, 1918)*

**timestamp** {string} mandatory *(1918-11-11T11:00:00)*

*Use* **name** *to record the original textual date description, if desired*

[:hasDay] {type: “APPROX|EXACT”} **:day**

optional; 0 or 1

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**:title**

**name** {string} mandatory *(Mr, Ms, Rev, Sir, The elder, the younger, Senior, Snr, II)*

*To record a customary or honorary title or an epithet.*

[:titleAliases] {type: “abbreviation|acronym|alternative|full|nickname|variant”} **:title**

optional; 0 or more

*Use type where applicable with a suitable value, eg.*

*-* abbreviation *for shortened forms (eg. Rev for Reverend)*

*-* acronym *for an acronym (eg. HRH for Her Royal Highness)*

*-* alternative *for local (intra-document) spelling variations*

*-* full *for full form of shortened forms (eg. Mister for Mr)*

*-* nickname *for a nickname (eg. Master for a boy)*

*-* variant *for a recognised variant (eg. Madam / Madame)*

**Example:** *“Richard Starkey, Jr.”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Starkey”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Richard”})

(x:person)-[:hasTitles]->(:title {name: “Jr”})-[:titleAliases {type: “full”}]->(:title {name: “Junior”})

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**:year**

**name** {string} optional *(20 Eliz. I)*

**value** {int} mandatory *(1578)*

*Use* **name** *to record the original textual date description, eg. for* [*Regnal years*](http://en.wikipedia.org/wiki/Regnal_years_of_English_monarchs)

# PART 2: EDGES

Only edges on the **:person** node are listed here. Edges on subsidiary nodes are shown in Part 1.

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[:aliveYear] {certain: 0|1} **:year**

optional; 0 or more

*Where DOB or DOD is not known but a ‘floruit’ date can be inferred from the data.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

**Example:** *“Lennon wrote ‘Imagine’ in 1971”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:aliveYear {certain: 1}]->(:year {value: 1971})

*Use date range if applicable, as follows:*

[:aliveYearEnd] {certain: 0|1} **:year**

optional; 0 or 1

[:aliveYearStart] {certain: 0|1} **:year**

optional; 0 or 1

**Example:** *“At school in the 1950s, McCartney was particularly praised for his art work”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:aliveYearStart {certain: 0}]->(:year {value: 1950})

(x:person)-[:aliveYearEnd {certain: 0}]->(:year {value: 1959})

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[:deadYear] {certain: 0|1} **:year**

optional; 0 or more

*Where DOD is not known but deceased status can be inferred from the document.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

**Example:** *“Lennon was posthumously inducted into the Rock and Roll Hall of Fame in 1994”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:deadYear]->(:year {value: 1994})

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[:hasAge] {certain: 0|1, dateEnd: \*, dateStart: \*, type: “APPROX|EXACT”} **:age**

optional; 0 or 1

*Where exact DOB or DOD is not known but an age can be inferred from the document.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

**Example:** *“Harrison celebrated his 21st birthday at the height of the 60s”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison”})

(x:person)-[:hasAge {dateStart: 1960, dateEnd: 1969, type: “APPROX”}]->(:age {start: 21})

**Example:** *“Harrison died from cancer in 2001 whilst still only in his fifties”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison”})

(x:person)-[:hasAge {dateStart: 2001, type: “exact”}]->(:age {start: 50, end: 59, type: “APPROX”})

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[:hasAliases] {certain: 0|1, dateEnd: \*, dateStart: \*, type: \*} **:alias**

optional; 0 or more

*For an alias that is used in place of an* ***entire*** *name (both forename & family name), eg. Pelé*

*For alternative individual forenames or family names, see* **:foreName** *and* **:familyName**

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable, eg. where an alias is only used for a specific time.*

*Use type to indicate:* acronym|alternative|nickname|pseudonym

**Example:** *“Richard Starkey, aka Ringo Starr”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Starkey”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Richard”})

(x:person)-[:hasAliases {type: “pseudonym”}]->(:alias {name: “Ringo Starr”})

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[:hasAwards] {certain: 0|1, dateEnd: \*, dateStart: \*, origin: \*} **:award**

optional; 0 or more

*To indicate association with an earned qualification or honorary award.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable (or* dateStart *only where not precise)*

*Use* origin *to record the location or campaign where an individual award was won.*

**Example:** *“Paul McCartney was made an MBE in 1965”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Paul”})

(x:person)-[:hasAwards {dateStart: 1965}]->(:award {name: “MBE”})

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[:hasChilds] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, score: \*, type: \*} **:person**

optional; 0 or more

*Use* certain *to indicate confidence in the assertion. True (1) by default. Qualify with* score *if necessary.*

*Use date range where applicable (or* dateStart *only where not precise)*

*Use precedence to indicate temporal order of multiple children where known.*

*Use* score *to indicate a weighting for the relationship assertion.*

*Use type to indicate:* adopted|foster|natural|step

**Example:** *“After they married, Paul McCartney legally adopted Linda's daughter Heather”*

(a:familyName {name: “McCartney”})

(x:person)-[:hasFamilyNames {order: 1}]->(a:familyName)

(x:person)-[:hasForeNames {order: 2}]->(b:foreName {name: “Paul”})

(y:person)-[:hasFamilyNames {order: 1}]->(a:familyName)

(y:person)-[:hasForeNames {order: 1}]->(c:foreName {name: “Linda”})

(z:person)-[:hasFamilyNames {order: 1}]->(a:familyName)

(z:person)-[:hasForeNames {order: 1}]->(d:foreName {name: “Heather”})

(y:person)-[:hasChilds {type: “natural”}]->(z:person)

(x:person)-[:hasChilds {type: “adopted”}]->(z:person)

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[:hasEvents] {certain: 0|1} **:event**

optional; 0 or more

*To indicate association with a notable life event, eg. birth, marriage, death, military service*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

**Example:** *“George Harrison was born in Liverpool, Lancashire, England, on 25 February 1943”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “George”})

(x:person)-[:hasEvents]->(a:event {type: “birth”})

(a:event)-[:hasPlaces]->(b:place {name: “Liverpool”})

(b:place)-[:withinPlaces]->(c:place {name: “Lancashire”})

(c:place)-[:withinPlaces]->(:place {name: “England”})

(a:event)-[:hasDay]->(:day {value: 25})-[:hasMonth]->(:month {value: 2})-[:hasYear]->(:year {value: 1943})

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[:hasFamilyNames] {certain: 0|1, dateEnd: \*, dateStart: \*, order: 1, precedence: 1, preference: 1}

**:familyName**

optional; 1 or more

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable, eg. where a change in name follows marriage.*

*Use the mandatory order to indicate formal order of multiple names, eg. Spencer (1) / Churchill (2)*

*Use precedence to indicate chronological sequence of family names when there have been changes.*

*Use preference to indicate ‘known as’ name, eg. Spencer (2) / Churchill (1)*

*Can also be an empty string where not known.*

**Example:** *“Lennon and McCartney”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(y:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

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[:hasForeNames] {certain: 0|1, dateEnd: \*, dateStart: \*, order: 1, precedence: 1, preference: 1}

**:foreName**

optional; 1 or more

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable, eg. where a change in name.*

*Use the mandatory order to indicate formal order of multiple forenames, eg. James (1) / Paul (2)*

*Use precedence to indicate chronological sequence of forenames when there have been changes.*

*Use preference to indicate ‘known as’ forename, eg. James (2) / Paul (1)*

*Can also simply be an initial, or an empty string where not known.*

**Example:** *“James Paul McCartney”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 1, preference: 2}]->(:foreName {name: “James”})

(x:person)-[:hasForeNames {order: 2, preference: 1}]->(:foreName {name: “Paul”})

If it is necessary to distinguish pairs of different family names and forenames for the same individual, it might be better to create entirely separate **:person** nodes for each separate name pair and then link the nodes with a [:sameAs] edge:

**Example:** *“In Japan, Sean Lennon is also known as Taro Ono”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Sean”})

(y:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Ono”})

(y:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Taro”})

(x:person)-[:sameAs {score: 100}]->(y:person)

Here it could be misleading to use a single **:person** node and the [:familyNameAliases] edge on **:familyName** because “Ono” is not a variant of “Lennon”. Likewise, it could be misleading to use the [:foreNameAliases] edge on **:foreName** because “Taro” is not a variant of “Sean”.

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[:hasNationalities] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1} **:nationality**

optional; 0 or more

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable, eg. in the case of a change of nationality*

*Use precedence to indicate temporal order of multiple nationalities where known.*

**Example:** *“Ringo Starr is still British despite living predominantly in LA and Monte Carlo”*

(x:person)-[:hasAliases {type: “pseudonym”}]->(:alias {name: “Ringo Starr”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “LA”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “Monte Carlo”})

(x:person)-[:hasNationalities]->(:nationality {name: “British”, ref: “GB”})

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[:hasOccupations] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1} **:occupation**

optional; 0 or more

*To indicate association with a known career, trade, job or occupation.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple occupations where known.*

**Example:** *“Ringo Starr has been a drummer since 1953”*

(x:person)-[:hasAliases {type: “pseudonym”}]->(:alias {name: “Ringo Starr”})

(x:person)-[:hasOccupations {dateStart: 1953}]->(:occupation {name: “drummer”})

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[:hasParents] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, score: \*, type: \*} **:person**

optional; 0 or more

*Use* certain *to indicate confidence in the assertion. True (1) by default. Qualify with* score *if necessary.*

*Use date range where applicable, eg. in the case of step-parents*

*Use precedence to indicate the temporal order of multiple parents (eg. step-parents) where known*

*Use* score *to indicate a weighting for the relationship assertion.*

*Use type to indicate:* adoptive|foster|natural|step

**Example:** *“Harrison was the youngest child of Harold Harrison and his wife Louise (née French)”*

(a:familyName {name: “Harrison”})

(x:person {type: “male”})-[:hasFamilyNames {order: 1}]->(a:familyName)

(y:person {type: “male”})-[:hasFamilyNames {order: 1}]->(a:familyName)

(y:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Harold”})

(z:person {type: “female”})

(z:person)-[:hasFamilyNames {order: 1, precedence: 2}]->(a:familyName)

(z:person)-[:hasFamilyNames {order: 1, precedence: 1}]->(b:familyName {name: “French”})

(z:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Louise”})

(y:person)-[:hasSpouses]->(z:person)

(x:person)-[:hasParents]->(y:person)

(x:person)-[:hasParents]->(z:person)

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[:hasPlaces] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, type: \*} **:place**

optional; 0 or more

*To indicate association with a place (which may in turn be associated with another place)*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable (or* dateStart *only where not precise)*

*Use precedence to indicate the temporal order of multiple place associations when known*

*Use type to indicate the nature of the relationship to the place where known,*

*eg.* home|origin|posting|recreation|school|training|university|work

**Example:** *“Paul McCartney lived at 57 Wimpole Street from 1963-1966”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Paul”})

(a:place {name: “57 Wimpole Street”, type: “dwelling”})

(x:person)-[:hasPlaces {dateStart: 1963, dateEnd: 1966, type: “home”}]->(a:place)

**Example:** *“Ringo Starr now lives in LA and Monte Carlo, a long way from his native Liverpool”*

(x:person)-[:hasAliases {type: “pseudonym”}]->(:alias {name: “Ringo Starr”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “LA”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “Monte Carlo”})

(x:person)-[:hasPlaces {type: “origin”}]->(:place {name: “Liverpool”})

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[:hasReferences] {certain: 0|1, dateEnd: \*, dateStart: \*} **:reference**

optional; 0 or more

*To indicate association with a given number, reference or code, eg. a service number.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable (or* dateStart *only where not precise)*

**Example:** *“In 1971, Lennon’s home phone no. at Tittenhurst Park was Ascot 23022”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(x:person)-[:hasPlaces {type: “home”}]->(:place {name: “Tittenhurst Park”})

(x:person)-[:hasReferences {certain: 1, dateStart: 1971}]->(:reference {genre: “personal”, name: “Ascot 23022”, type: “telephone number”})

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[:hasRelations] {certain: 0|1, dateEnd: \*, dateStart: \*, name: \*, score: \*, type: \*} **:person**

optional; 0 or more

*To indicate non-immediate family relations. Especially useful where intermediate relations (person or persons) are not known - but can still be used in addition to those.*

*Use* certain *to indicate confidence in the assertion. True (1) by default. Qualify with* score *if necessary.*

*Use date range where applicable, eg. in the case of foster grandparents*

*Use name to indicate the relationship, using the following standard notation:*

*grand (no space or hyphen), eg.* grandchild|granddaughter|grandfather|grandparent

*great (with hyphen), eg.* great-aunt|great-grandchild|great-granddaughter|great-grandparent

*Other typical names:* aunt|brother-in-law|cousin|neice|nephew|uncle|sister-in-law

*Use* score *to indicate a weighting for the relationship assertion.*

*Use type to indicate:* adopted|adoptive|foster|half|natural|removed|step

**Example:** *“Lennon was raised by his aunt and uncle, Mimi and George Smith”*

(x:person {type: “male”})-[:hasFamilyNames {order: 1}]->(a:familyName {name: “Lennon”})

(y:person {type: “female”})-[:hasFamilyNames {order: 1}]->(b:familyName {name: “Smith”})

(y:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Mimi”})

(z:person {type: “male”})-[:hasFamilyNames {order: 1}]->(b:familyName)

(z:person)-[:hasForeNames {order: 1}]->(:foreName {name: “George”})

(x:person)-[:hasRelations {name: “aunt”}]->(y:person)

(x:person)-[:hasRelations {name: “uncle”}]->(z:person)

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[:hasRoles] {certain: 0|1, dateEnd: \*, dateStart: \*, name: \*, precedence: 1}

**:event**|**:organisation**|**:person**|**:place**

optional; 0 or more

*To indicate employment or some other form of involvement (eg. assistant, benefactor, employer, friend, member, mentor, owner, partner, player, protégé, sponsor, supporter, volunteer) with an event, organisation, person or place. Useful to distinguish between periods spent with the same organisation under different roles or in different capacities, eg. ranks in the army.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use* name *to capture the nature of the involvement by job title or other descriptor, if known*

*Use precedence to indicate temporal order of multiple roles where known.*

**Example:** *“Brian Epstein was an integral part of The Beatles between 1961 and 1967”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Epstein”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Brian”})

(y:organisation {name: “The Beatles”, genre: “music”, type: “group”})

(x:person)-[:hasRoles {dateStart: 1961, dateEnd: 1967}]->(y:organisation)

**Example:** *“Maharishi Mahesh Yogi was guru to The Beatles”*

(x:person)-[:hasTitles]->(:title {name: “Maharishi”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Mahesh”})

(x:person)-[:hasTitles]->(:title {name: “Yogi”})

(y:organisation {name: “The Beatles”, genre: “music”, type: “group”})

(x:person)-[:hasRoles {name: “guru”}]->(y:organisation)

**Example: “***May Pang became personal assistant to Lennon and Ono in 1970”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Pang“})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “May“})

(y:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon“})

(z:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Ono“})

(x:person)-[:hasRoles {dateStart: 1970, name: “personal assistant”})->(y:person)

(x:person)-[:hasRoles {dateStart: 1970, name: “personal assistant”})->(z:person)

**Example:** *“Ed Sullivan introduced The Beatles on stage when they played Shea Stadium in 1965”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Sullivan”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Ed”})

(y:organisation {name: “The Beatles”, genre: “music”, type: “group”})

(a:event {genre: “music”, type: “concert”})

(y:organisation)-[hasEvents]->(a:event)

(a:event)-[:hasPlaces]->(:place {name: “Shea Stadium”})

(a:event)-[:hasYear]->(:year {value: 1965})

(x:person)-[:hasRoles {name: “compere”}]->(a:event)

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[:hasSiblings] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: -1, score: \*, type: \*} **:person**

optional; 0 or more

*Use* certain *to indicate confidence in the assertion. True (1) by default. Qualify with* score *if necessary.*

*Use date range where applicable (or* dateStart *only where not precise)*

*Use precedence to indicate relative order of siblings where -1 etc. is younger and +1 etc. is older*

*Use* score *to indicate a weighting for the relationship assertion.*

*Use type to indicate:* adopted|half|natural|step

**Example:** *“Harrison had one sister, Louise, and two brothers, Harry and Peter”*

(a:familyName {name: “Harrison”})

(w:person {type: “male”})-[:hasFamilyNames {order: 1}]->(a:familyName)

(x:person {type: “female”})-[:hasFamilyNames {order: 1, precedence: 1}]->(a:familyName)

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Louise”})

(y:person {type: “male”})-[:hasFamilyNames {order: 1}]->(a:familyName)

(y:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Harry”})

(z:person {type: “male”})-[:hasFamilyNames {order: 1}]->(a:familyName)

(z:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Peter”})

(w:person)-[:hasSiblings]->(x:person)

(w:person)-[:hasSiblings]->(y:person)

(w:person)-[:hasSiblings]->(z:person)

(x:person)-[:hasSiblings]->(y:person)

(x:person)-[:hasSiblings]->(z:person)

(y:person)-[:hasSiblings]->(z:person)

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[:hasSpouses] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1, score: \*, type: \*} **:person**

optional; 0 or more

*Use* certain *to indicate confidence in the assertion. True (1) by default. Qualify with* score *if necessary.*

*Use date range where applicable (or* dateStart *only where not precise)*

*Use precedence to indicate temporal order of multiple spouses where known.*

*Use* score *to indicate a weighting for the relationship assertion.*

*Use type to indicate:* civil|marriage|partner

**Example:** *“George Harrison married Pattie Boyd on 21 Jan 1966 and Olivia Arias on 2 Sep 1978”*

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “George”})

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Harrison”})

(y:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Pattie”})

(y:person)-[:hasFamilyNames {order: 1, precedence: 1}]->(:familyName {name: “Boyd”})

(z:person)-[:hasForeNames {order: 1}]->(:foreName {name: “Olivia”})

(z:person)-[:hasFamilyNames {order: 1, precedence: 1}]->(:familyName {name: “Arias”})

(x:person)-[:hasSpouses {dateStart: 19660121, precedence: 1, type: “marriage”}]->(y:person)

(x:person)-[:hasSpouses {dateStart: 19780902, precedence: 2, type: “marriage”}]->(z:person)

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[:hasTitles] {certain: 0|1, dateEnd: \*, dateStart: \*, precedence: 1} **:title**

optional; 0 or more

*To indicate association with a customary or honorary title.*

*May well be used in conjunction with a complementary* [:hasRoles {name=\*}] *assertion.*

*Use* certain *to indicate confidence in the assertion. True (1) by default.*

*Use date range where applicable (or* dateStart *only where not precise).*

*Use precedence to indicate temporal order of multiple titles where known.*

**Example:** *“Sir Paul McCartney”*

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Paul”})

(x:person)-[:hasTitles]->(:title {name: “Sir”})

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[:inContainer] **:context**|**:document**|**:source**

mandatory; 1

*To indicate the source text, document, metadata or electronic system in which the person appears.*

**Example:** *“McCartney, James Paul v Lennon, John Winston Ono, Apple Corps Ltd and Maclen Music Ltd”* [TNA Catalogue, ref. J 84/649. <http://discovery.nationalarchives.gov.uk/details/r/C3332871>]

(x:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 1, preference: 2}]->(:foreName {name: “James”})

(x:person)-[:hasForeNames {order: 2, preference: 1}]->(:foreName {name: “Paul”})

(y:person)-[:hasFamilyNames {order: 1}]->(:familyName {name: “Lennon”})

(y:person)-[:hasForeNames {order: 1}]->(:foreName {name: “John”})

(y:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Winston”})

(y:person)-[:hasForeNames {order: 3}]->(:foreName {name: “Ono”})

(a:organisation {name: “Apple Corps Ltd”, genre: “music”, type: “company”})

(b:organisation {name: “Maclen Music Ltd”, genre: “music”, type: “company”})

(c:context {name: “McCartney, James Paul v Lennon, John Winston Ono, Apple Corps Ltd and Maclen Music Ltd”)

(x:person)-[:inContainer]->(c:context)<-[:inContainer]-(y:person)

(a:organisation)-[:inContainer]->(c:context)<-[:inContainer]-(b:organisation)

(d:document {name: “J 84/649”, ref: “C3332871”, type: “metadata”, URL: “http://discovery.nationalarchives.gov.uk/details/r/C3332871”})

(d:document)-[:hasStartYear]->(:year {value: 1971})

(d:document)-[:hasEndYear]->(:year {value: 1982})

(c:context)-[:inContainer]->(d:document)

(e:source {name: “Discovery”, type: “catalogue”, URL: “http://discovery.nationalarchives.gov.uk”})

(d:document)-[:inContainer]->(e:source)

(f:organisation {name: “The National Archives”, genre: “government”, type: “repository”})

(f:organisation)-[:organisationAliases {type: “acronym”}]->(:organisation {name: “TNA”})

(e:source)-[:heldBy]->(f:organisation)

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[:sameAs] {genre: \*, id: \*, score: \*, timestamp: 2016-06-18T00:00:00, type: \*} **:person**

optional; 0 or more

*To indicate the probability that two* ***:person*** *nodes might be the same individual.*

*Use genre to indicate how/where the assertion was derived:* algorithmic|documented|manual

*Use id to attach the assertion to a batch or result set stored in an auditing database, eg. MongoDB*

*The mandatory* score *property indicates the weighting for an individual assertion.*

*The mandatory* timestamp *property is to show when the assertion was made.*

*Use type to indicate the algorithmic methods employed (use multiple hyphenated if necessary) eg.*

DL = Damerau-Levenstein, DM = Double Metaphone, J = Jaccard, JW = Jaro-Winkler,

M = Metaphone, NYSIIS = New York State Identification and Intelligence System, S = Soundex

**Example:** *“The J. P. McCartney in question was none other than Paul McCartney”*

(x:person)-[:hasFamilyNames {order: 1}]->(a:familyName {name: “McCartney”})

(x:person)-[:hasForeNames {order: 1}]->(:foreName {name: “J”, type: “initial”})

(x:person)-[:hasForeNames {order: 2}]->(:foreName {name: “P”, type: “initial”})

(y:person)-[:hasFamilyNames {order: 1}]->(a:familyName)

(y:person)-[:hasForeNames {order: 2}]->(:foreName {name: “Paul”})

(x:person)-[:sameAs {timestamp: 2016-06-18T00:00:00, score: 100, type: “documented”}]->(y:person)