Classes

ds:Item (root class)
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├──── ds:Equipment (wearable/usable gear)
│      ├──── ds:Weapon (offensive equipment)
│      │      ├──── ds:Melee
│      │      ├──── ds:Ranged
│      ├──── ds:Armor (defensive equipment)
│      ├──── ds:Shields (blocking equipment)
│      └──── ds:Rings (accessory equipment)
├──── ds:Consumables (single-use or limited-use items)
├──── ds:UpgradeMaterial (items used to enhance equipment)
├──── ds:KeyItem (quest/progression items)
└──── ds:BossSoul (special items dropped by bosses)
```
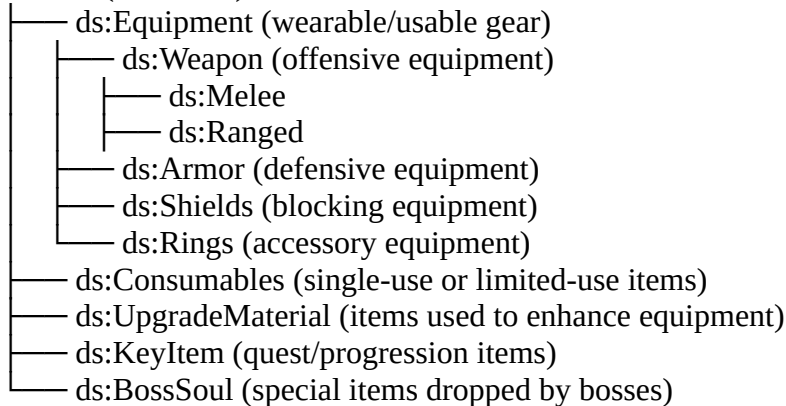
ds:Boss: Major enemies with unique souls and mechanics
ds:NPC: Non-player characters with subtypes:

ds:Vendor (sells items)
ds:QuestGiver (provides quests)
ds:Summon (can be summoned for assistance)
ds:HostileNPC (attacks the player)

ds:Enemy: Regular hostile creatures

ds:Area: Geographic locations in the game world
ds:Spell: Magic abilities (subtypes: ds:Sorcery, ds:Miracle, ds:Pyromancy)
ds:Covenant: Factions players can join
ds:UpgradePath: Weapon enhancement routes (Normal, Fire, Lightning, etc.)
ds:DamageType: Enumeration of damage categories (Physical, Magic, Fire, Lightning, Divine, Occult)

How players obtain items:

ds:droppedBy (Item → Boss/Enemy/NPC)

Domain: ds:Item
Range: ds:Boss ⊔ ds:Enemy ⊔ ds:NPC
Example: ds:BlackKnightSword ds:droppedBy ds:BlackKnight_UndeadParish

ds:soldBy (Item → NPC)

Domain: ds:Item
Range: ds:NPC
Functional property (item sold by specific vendor at specific location)
Example: ds:TitaniteShard ds:soldBy ds:AndreOfAstora

ds:foundIn (Item → Area)

Domain: ds:Item
Range: ds:Area
Example: ds:Zweihander ds:foundIn ds:GraveyardFirelinkShrine

Weapon progression mechanics:

ds:upgradesTo (Weapon → Weapon)

Domain: ds:Weapon
Range: ds:Weapon
Transitive property: If A upgrades to B, and B upgrades to C, then A transitively upgrades to C
Example: ds:Longsword ds:upgradesTo ds:Longsword_Plus1

ds:requiresItem (UpgradePath → UpgradeMaterial)

Domain: ds:UpgradePath
Range: ds:UpgradeMaterial
Example: ds:NormalUpgradePath ds:requiresItem ds:TitaniteShard

Location and NPC mechanics:

ds:locatedIn (NPC/Boss/Enemy → Area)

Domain: ds:NPC ⊔ ds:Boss ⊔ ds:Enemy
Range: ds:Area
Functional property: Each character has exactly one primary location
Example: ds:AndreOfAstora ds:locatedIn ds:UndeadParish

ds:connectsTo (Area → Area)

Domain: ds:Area
Range: ds:Area
Symmetric property: If Area A connects to Area B, then B connects to A
Example: ds:FirelinkShrine ds:connectsTo ds:UndeadBurg

ds:memberOfCovenant (NPC → Covenant)

Domain: ds:NPC
Range: ds:Covenant
Example: ds:Solaire ds:memberOfCovenant ds:WarriorsOfSunlight

Boss weaknesses/resistances:

ds:weakTo (Boss → DamageType)

Domain: ds:Boss
Range: ds:DamageType
Example: ds:Ornstein ds:weakTo ds:FireDamage

ds:resistantTo (Boss → DamageType)

Domain: ds:Boss
Range: ds:DamageType
Example: ds:Ornstein ds:resistantTo ds:LightningDamage

How players learn abilities:

ds:taughtBy (Spell → NPC)

Domain: ds:Spell
Range: ds:NPC
Example: ds:GreatChaosFireball ds:taughtBy ds:QuelaagsSister

ds:performsUpgrade (NPC → UpgradePath)

Domain: ds:NPC
Range: ds:UpgradePath
Example: ds:AndreOfAstora ds:performsUpgrade ds:NormalUpgradePath

Inherited by all ds:Item subclasses:

schema:name (xsd:string) - Reused from Schema.org
schema:description (xsd:string) - Reused from Schema.org
ds:soulCost (xsd:integer) - Purchase price in souls

Equipment Properties
Inherited by ds:Weapon, ds:Armor, ds:Shield, ds:Ring:

ds:weight (xsd:decimal) - Affects player movement speed
ds:durability (xsd:integer) - Degradation from use
ds:canBeUpgraded (xsd:boolean) - Whether item can be enhanced

Weapon-Specific Properties

Requirements and scaling:

ds:strengthRequirement, ds:dexterityRequirement, ds:intelligenceRequirement, ds:faithRequirement (xsd:integer)
ds:strengthScaling, ds:dexterityScaling, ds:intelligenceScaling, ds:faithScaling (xsd:string) - Values: S, A, B, C, D, E, -

Damage values:

ds:physicalDamage, ds:magicDamage, ds:fireDamage, ds:lightningDamage (xsd:integer)

Armor Properties

Defensive stats:

ds:physicalDefense, ds:magicDefense, ds:fireDefense, ds:lightningDefense (xsd:integer)
ds:poise (xsd:decimal) - Resistance to stagger
ds:bleedResistance, ds:poisonResistance (xsd:integer)

Shield Properties

ds:stability (xsd:integer) - Stamina efficiency when blocking
ds:physicalReduction, ds:magicReduction, ds:fireReduction (xsd:decimal) - Damage reduction percentages

Boss Properties

ds:healthPoints (xsd:integer) - Boss/Enemy HP
ds:souls (xsd:integer) - Reward when defeated

Spell Properties

ds:intelligenceRequirement, ds:faithRequirement (xsd:integer)
ds:uses (xsd:integer) - Number of casts
ds:slots (xsd:integer) - Attunement slots required

Upgrade Path Properties

ds:maxLevel (xsd:integer) - Maximum enhancement level (e.g., +15, +10, +5)
ds:upgradeType (xsd:string) - Normal, Fire, Lightning, Divine, Occult, etc.

Axioms and Class Restrictions

Enumeration

ds:ArmorSlot ≡ {Head, Chest, Hands, Legs}
ds:UpgradeType ≡ {Normal, Fire, Lightning, Divine, Occult, Magic, Enchanted, Chaos, Crystal}
ds:DamageType ≡ {Physical, Magic, Fire, Lightning, Divine, Occult}

Cardinality Constraints

ds:Boss ⊑ ∃=1 drops.BossSoul

Every boss drops exactly one boss soul

ds:UpgradePath ⊑ ≥1 requiresItem.UpgradeMaterial

Every upgrade path requires at least one material

Range Restrictions

ds:Weapon ⊑ ∀upgradesTo.Weapon

Weapons can only upgrade to other weapons

ds:Boss ⊑ ∀weakTo.DamageType

Bosses are only weak to damage types

Union

ds:Equipment ≡ ds:Weapon ⊔ ds:Armor ⊔ ds:Shield ⊔ ds:Ring

Equipment is exactly the union of these four types

Intersection

ds:MagicWeapon ≡ ds:Weapon ⊓ ∃intelligenceRequirement.xsd:integer

Magic weapons are weapons that have an intelligence requirement

ds:PurchasableEquipment ≡ ds:Equipment ⊓ ∃soldBy.NPC

Purchasable equipment is equipment sold by some NPC

Negation

ds:UniqueEquipment ≡ ds:Equipment ⊓ ¬(∃soldBy.NPC)

Unique equipment is equipment NOT sold by any NPC

ds:NonUpgradableWeapon ≡ ds:Weapon ⊓ ¬(∃upgradesTo.ds:Weapon)

Non-upgradable weapons cannot be upgraded

Vocabulary

Standard Vocabularies

RDF/RDFS/OWL (core semantic web):

rdf:type - Class membership
rdfs:subClassOf - Class hierarchy
rdfs:label, rdfs:comment - Annotations
owl:TransitiveProperty - For ds:upgradesTo, ds:connectsTo
owl:SymmetricProperty - For ds:connectsTo
owl:FunctionalProperty - For ds:locatedIn
owl:sameAs - Linking to external datasets (DBpedia, Wikidata)

Schema.org:

schema:name - Entity names (instead of custom ds:name)
schema:description - Descriptions (instead of custom ds:description)

ds:

All domain-specific properties are defined under the ds: (Dark Souls) namespace:

Gameplay mechanics: ds:upgradesTo, ds:weakTo, ds:droppedBy
Character stats: ds:strengthRequirement, ds:physicalDamage
World structure: ds:connectsTo, ds:locatedIn

A-Box

Instance: ds:Zweihander
turtleds:Zweihander rdf:type ds:Greatsword, ds:Weapon, ds:Equipment, ds:Item ;
   schema:name "Zweihander" ;
   ds:strengthRequirement "24"^^xsd:integer ;
   ds:dexterityRequirement "10"^^xsd:integer ;
   ds:physicalDamage "130"^^xsd:integer ;
   ds:weight "10.0"^^xsd:decimal ;
   ds:strengthScaling "C" ;
   ds:dexterityScaling "D" ;
   ds:upgradesTo ds:Zweihander_Plus1 ;
   ds:foundIn ds:GraveyardFirelinkShrine .
Instance: ds:Ornstein
turtleds:Ornstein rdf:type ds:Boss ;
   schema:name "Dragon Slayer Ornstein" ;
   ds:locatedIn ds:AnorLondo ;
   ds:weakTo ds:FireDamage ;
   ds:resistantTo ds:LightningDamage ;
   ds:drops ds:SoulOfOrnstein ;
   ds:healthPoints "1600"^^xsd:integer ;
   ds:souls "50000"^^xsd:integer .
Instance: ds:AndreOfAstora
turtleds:AndreOfAstora rdf:type ds:Vendor, ds:NPC ;
   schema:name "Andre of Astora" ;
   ds:locatedIn ds:UndeadParish ;
   ds:soldBy ds:TitaniteShard, ds:LargeTitaniteShard ;
   ds:performsUpgrade ds:NormalUpgradePath, ds:DivineUpgradePath .