

## Entity Relationship Model (ERM):

One Piece ERM			
<u>ENTITY</u>	<u>RELATIONSHIP</u>	<u>CONNECTIVITY</u>	<u>ENTITY</u>
PLAYER	creates	(1:1)	STORY_CHARACTER
CREW	has	(1:M)	STORY_CHARACTER
CREW	owns	(1:M)	SHIP
CREW	fulfills	(0:M)	CREW_MISSION
CREW	has	(1:1)	CAPTAIN
STORY_CHARACTER	is	(1:1)	CAPTAIN
STORY_CHARACTER	fulfills	(0:M)	CHARACTER_MISSION
STORY_CHARACTER	eats	(1:1)	DEVIL FRUIT
STORY_CHARACTER	has	(1:1)	BOUNTY
STORY_CHARACTER	fights	(1:M)	BATTLE
STORY_CHARACTER	is	(0:1) Subtype	PIRATE
STORY_CHARACTER	is	(0:1) Subtype	MARINE
STORY_CHARACTER	is	(0:1) Subtype	REVOLUTIONARY
INVENTORY	belongs to	(1:1)	STORY_CHARACTER
INVENTORY	can have	(1:M)	ITEM
MISSION	is	(0:1) Subtype	CHARACTER_MISSION

MISSION	is	(0:1) Subtype	CREW_MISSION
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### **Business Rules:**

#### PLAYER/STORY\_CHARACTER:

1. A PLAYER can create one and only one STORY\_CHARACTER.
2. Each STORY\_CHARACTER can only be attributed to one PLAYER

#### CREW/STORY\_CHARACTER:

1. A CREW can have many STORY\_CHARACTER.
2. Each STORY\_CHARACTER can be on one CREW.

#### CREW/CAPTAIN:

1. A CREW can only have exactly one CAPTAIN.
2. Each CAPTAIN can only captain one crew.

#### STORY\_CHARACTER/CAPTAIN:

1. A STORY\_CHARACTER can either be one and only one CAPTAIN or none.
2. Each CAPTAIN is represented by one STORY\_CHARACTER.

#### CREW/MISSION:

1. A CREW can fulfill many CREW\_MISSIONS
2. Each CREW\_MISSION can be fulfilled by many CREW

#### STORY\_CHARACTER/CHARACTER\_MISSION:

1. A STORY\_CHARACTER can fulfill many CHARACTER\_MISSION, but only two at a time.
2. Each CHARACTER\_MISSION can be fulfilled by many STORY\_CHARACTER.

#### STORY\_CHARACTER/DEVIL FRUIT:

1. A STORY\_CHARACTER can eat one and only one DEVIL FRUIT.

2. Each DEVIL FRUIT can be consumed by only one STORY\_CHARACTER.
3. If a STORY\_CHARACTER gets deleted the DEVIL FRUIT will respawn somewhere.

#### STORY\_CHARACTER/BOUNTY:

1. A STORY\_CHARACTER can have one BOUNTY.
2. Each BOUNTY can only be attributed to one STORY\_CHARACTER.
3. If a STORY\_CHARACTER gets a new BOUNTY, the old is overwritten.

#### STORY\_CHARACTER/BATTLE:

1. A STORY\_CHARACTER can fight many BATTLE.
2. Each BATTLE can be fought by two STORY\_CHARACTER.
3. A STORY\_CHARACTER may or may not be a winner.

#### STORY\_CHARACTER/PIRATE:

1. A PIRATE is a disjoint subtype of STORY\_CHARACTER.
2. If a STORY\_CHARACTER is a PIRATE, then the CHAR\_FACTION must be "Pirate"
3. Every PIRATE has a matching ID in STORY\_CHARACTER.
4. A STORY\_CHARACTER can not switch out of PIRATE after choosing it.

#### STORY\_CHARACTER/MARINE:

1. A MARINE is a disjoint subtype of STORY\_CHARACTER.
2. If a STORY\_CHARACTER is a MARINE, then the CHAR\_FACTION must be "Marine"
3. Every MARINE has a matching ID in STORY\_CHARACTER.
4. A STORY\_CHARACTER can not switch out of MARINE after choosing it.

#### STORY\_CHARACTER/REVOLUTIONARY

1. A REVOLUTIONARY is a disjoint subtype of STORY\_CHARACTER.

2. If a STORY\_CHARACTER is a REVOLUTIONARY, then the CHAR\_FACTION must be "Revolutionary"
3. Every REVOLUTIONARY has a matching ID in STORY\_CHARACTER.
4. A STORY\_CHARACTER can not switch out of REVOLUTIONARY after choosing it.

#### INVENTORY/STORY\_CHARACTER:

1. An INVENTORY belongs to one and only one STORY\_CHARACTER.
2. Each STORY\_CHARACTER can only have one INVENTORY.

#### INVENTORY/ITEM:

1. An INVENTORY can have many ITEMS.
2. Each ITEM can only belong to one INVENTORY.
3. If an ITEM quantity reaches 0 it is deleted from the INVENTORY.

#### MISSION/CREW\_MISSION:

1. CREW\_MISSION is a disjoint subtype of MISSION.
2. If a MISSION is a CREW\_MISSION then the MISSION\_TYPE must be "Crew"
3. Every CREW\_MISSION has a matching ID in MISSION.
4. A MISSION can not be both a CHARACTER\_MISSION and CREW\_MISSION but it must be one or the other.