

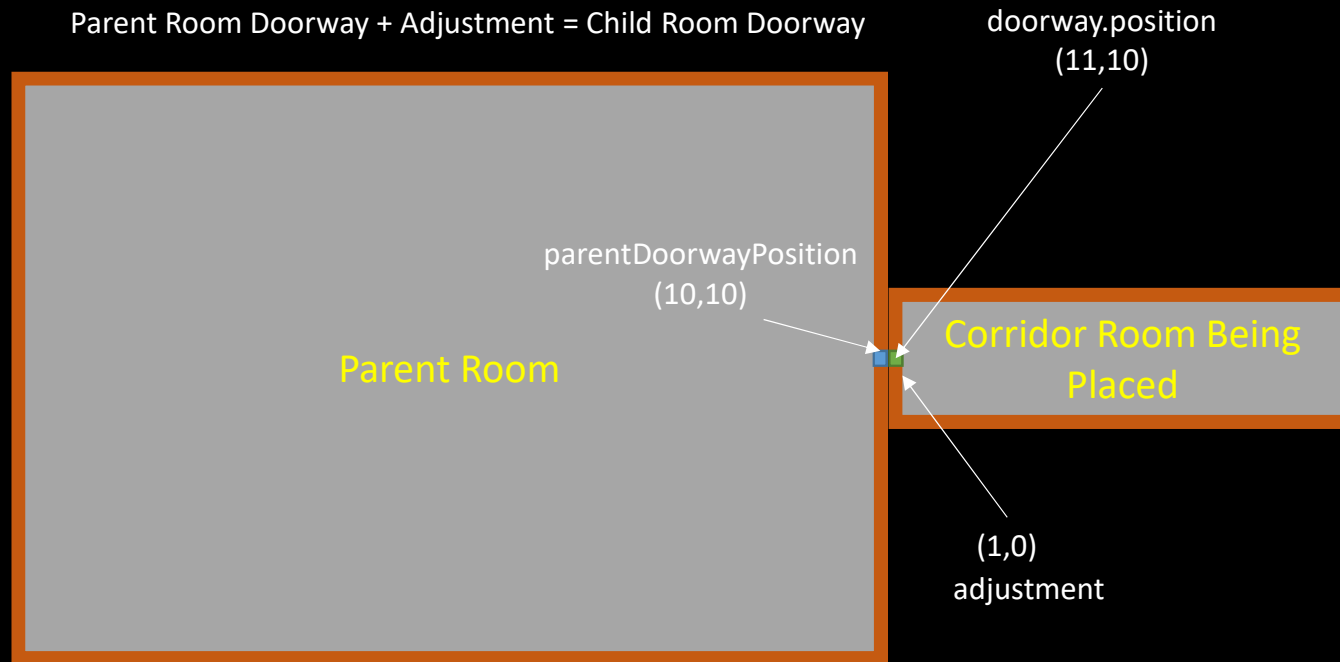
Dungeon Builder Placing Rooms

Room Position

Dungeon Builder Placing Rooms

Room Position

Parent Room Doorway + Adjustment = Child Room Doorway



$$\text{parentDoorwayPosition} + \text{adjustment} = \text{doorway.position} - \text{room.templateLowerBounds} + \text{room.lowerBounds}$$

Therefore :- `room.lowerBounds = parentDoorwayPosition + adjustment + room.templateLowerBounds - doorway.position;`

Dungeon Builder Placing Rooms

Room Position

`room.lowerBounds = parentDoorwayPosition + adjustment + room.templateLowerBounds - doorway.position`

`room.upperBounds = room.lowerBounds + room.templateUpperBounds - room.templateLowerBounds`

Dungeon Builder Placing Rooms

Room Position

Dungeon Builder Placing Rooms

Overlapping Rooms

Dungeon Builder Placing Rooms

Overlapping Rooms

The Dungeon Builder needs to make sure that rooms can be placed in valid positions.

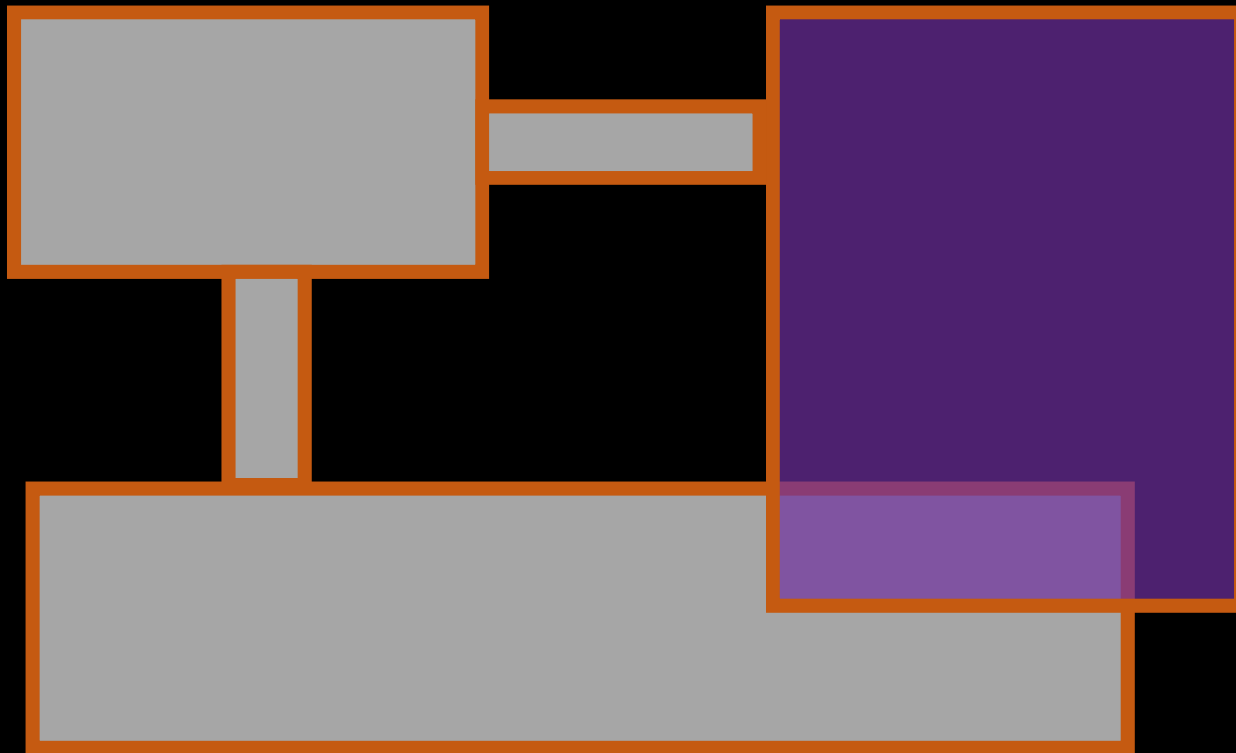
A valid position is where the child room doorway can be placed and aligned with an available parent room doorwayand.....

...the placed room mustn't overlap any of the rooms already placed in the dungeon.

We'll maintain the lower and upper bounding box positions of the rooms that we place successfully in the Room class objects we create.

Dungeon Builder Placing Rooms

Overlapping Rooms



This is not a valid
room placement
since it overlaps a
room that has
already been
placed!

Dungeon Builder Placing Rooms

Overlapping Rooms

**So how can we determine whether
rooms are overlapping?**

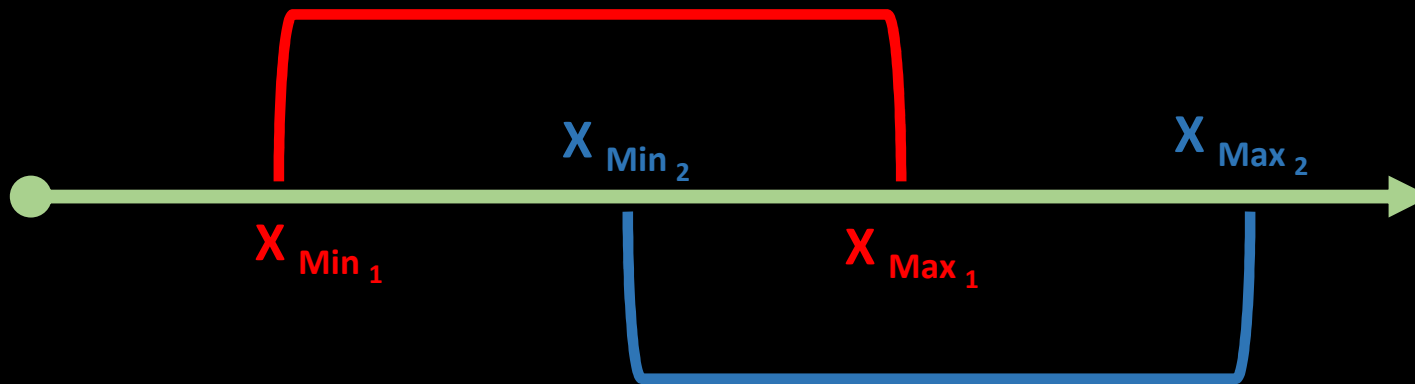
Dungeon Builder Placing Rooms

Overlapping Rooms

Use Intervals!

Dungeon Builder Placing Rooms

Overlapping Intervals

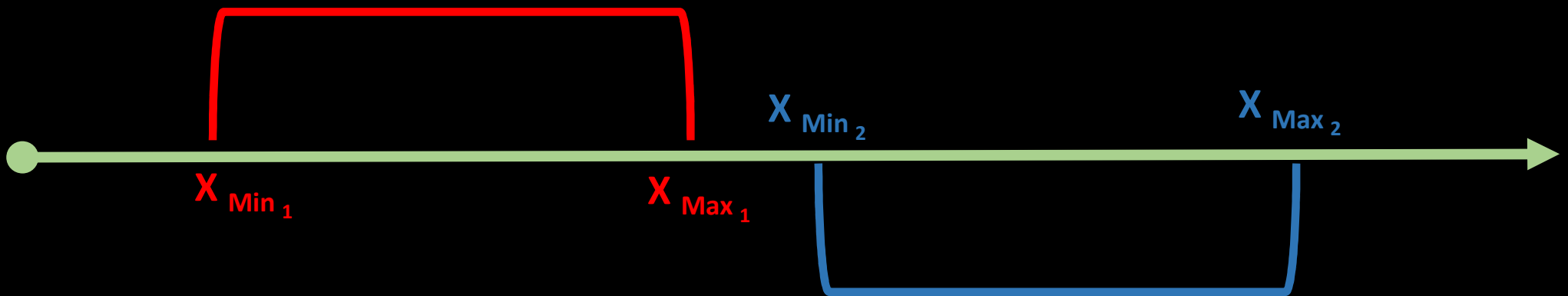


If the largest of X_{Min_1} and X_{Min_2} is LESS THAN OR EQUAL TO the smallest of X_{Max_1} and X_{Max_2} then the intervals are overlapping

i.e. IF $(\max(X_{Min_1}, X_{Min_2}) \leq \min(X_{Max_1}, X_{Max_2})) = \text{OVERLAPPING!}$

Dungeon Builder Placing Rooms

Non - Overlapping Intervals



If the largest of X_{Min_1} and X_{Min_2} is GREATER THAN the smallest of X_{Max_1} and X_{Max_2} then the intervals are not overlapping

i.e. IF $(\max(X_{Min_1}, X_{Min_2}) > \min(X_{Max_1}, X_{Max_2})) = \text{NOT OVERLAPPING!}$

Dungeon Builder Placing Rooms

Overlapping Rooms

So how do we apply that to overlapping boxes?

Dungeon Builder Placing Rooms

Overlapping Rooms

