

## Test Data Sets

Using java to generate data based on the tables.

### Main Class (generation):

- Contains the main method for executing the data generation process.
- Defines arrays for item names, tag names, item sources, recipe types and biomes.
- Generates data for each entity type (items, tags, etc.) in loops based on the specified length.
- Writes the generated data to an SQL file named "projects.sql".

### Data Generator Class (dataGenerator):

- Contains nested static classes for different tables and their attributes:
  - Item
    - Item name
    - Stack Limit

ITEMNAME	STACKLIMIT
1 Iron Sword	1
2 Iron Ingot	64
3 Wooden Planks	64
4 Sticks	64
5 Raw Beef	64
6 CobbleStone	64
7 Leather	64
8 Cooked Beef	64
9 Leather Boots	1
10 Stone Pickaxe	1
11 Smooth Stone	64
12 Raw Porkchop	64
13 Cooked Porkchop	64
14 Wheat	64
15 Bread	64
16 Iron Ore	64
17 Wooden Log	64

- Tag
  - Tag name

TAGNAME
1 Armour
2 Block
3 Food
4 Material
5 Tool

- ItemSource
  - Source name
  - Item name (Item)
  - Chance
  - Output quantity

↕ SOURCENAME	↕ ITEMNAME	↕ CHANCE	↕ OUTPUTQUANTITY
1 Ingot	Iron Ingot	20	1
2 Stone	CobbleStone	70	1
3 Wood	Wooden Planks	100	4
4 Wood	Sticks	80	2
5 Leather	Leather Boots	100	1
6 Meat	Cooked Beef	80	1
7 Pickaxe	Stone Pickaxe	100	1
8 Sword	Iron Sword	100	1
9 Meat	Cooked Porkchop	100	1
10 Grain	Bread	90	1

- Recipe
  - Source name (ItemSource)
  - Item name (Item)
  - Recipe type

↕ SOURCENAME	↕ ITEMNAME	↕ RECIPETYPE
1 Wood	Wooden Planks	Crafting
2 Wood	Sticks	Crafting
3 Leather	Leather Boots	Crafting
4 Meat	Cooked Beef	Smelting
5 Meat	Cooked Porkchop	Smelting
6 Grain	Bread	Crafting
7 Sword	Iron Sword	Crafting
8 Pickaxe	Stone Pickaxe	Crafting

- Mining
  - Source name (ItemSource)
  - Item name (Item)

↕ SOURCENAME	↕ ITEMNAME
1 Ingot	Iron Ingot
2 Stone	CobbleStone

- Chest
  - Source name (ItemSource)
  - Item name (Item)
  - Structure

↕ SOURCENAME	↕ ITEMNAME	↕ STRUCTURE
1 Grain	Bread	Wooden Planks
2 Meat	Cooked Beef	Wooden Planks

- Location

- Source name (ItemSource)
- Item name (Item)
- Depth
- Biome

ITEMNAME	SOURCE	DEPTH	BIOME
1 Ingot	Iron Ingot	50	Underground
2 Stone	CobbleStone	100	Underground
3 Grain	Bread	50	Grass

- ItemToTag

- Item name (Item)
- Tag name (Tag)

ITEMNAME	TAGNAME
1 Bread	Food
2 CobbleStone	Block
3 Cooked Beef	Food
4 Cooked Porkchop	Food
5 Iron Ingot	Material
6 Iron Sword	Tool
7 Leather	Material
8 Leather Boots	Armour
9 Raw Beef	Food
10 Raw Porkchop	Food
11 Smooth Stone	Block
12 Sticks	Material
13 Stone Pickaxe	Tool
14 Wheat	Food
15 Wooden Planks	Material

- Input

- Source name (ItemSource)
- Input item name (Item)
- Output item name (Item)
- Recipe type (Recipe)

SOURCE	OUTPUTITEMNAME	INPUTITEMNAME	RECIPE
1 Wood	Wooden Planks	Wooden Log	Crafting
2 Wood	Sticks	Wooden Planks	Crafting
3 Leather	Leather Boots	Leather	Crafting
4 Meat	Cooked Beef	Raw Beef	Smelting
5 Meat	Cooked Porkchop	Raw Porkchop	Smelting
6 Grain	Bread	Wheat	Crafting
7 Pickaxe	Stone Pickaxe	Smooth Stone	Crafting
8 Sword	Iron Sword	Iron Ore	Crafting

- BlockToMine

- Source name (ItemSource)
- Input item name (Item)
- Output item name (Item)

SOURCE	OUTPUTITEMNAME	INPUTITEMNAME
1 Ingot	Iron Ingot	Iron Ore
2 Stone	CobbleStone	Smooth Stone

# Large Dataset Generation

- Required a naming algorithm for item names to ensure unique names and random generation of other attributes.
- Item
  - Each item is generated with a unique name to avoid duplicates
  - Stack limit for each item is randomly assigned

ITEMNAME	STACKLIMIT
1 KAW436	9
2 KLL428	15
3 GCW793	29
4 RQS216	62
5 GJQS08	57
6 MIV943	29
7 QFA057	32
8 XFI581	49
9 DFG163	27
10 TKX505	41
11 JLV931	49
12 RRO494	37
13 ZXK806	55
14 WWN749	60
15 KWH846	4
16 ZMZ313	41
17 AUQ115	46
18 BSR819	58
19 PRX153	31
20 CYM188	56

- Tag
  - Tags are generated based on predefined tag names.

TAGNAME
1 Armour
2 Block
3 Building Materials
4 Decorations
5 Food
6 Ore
7 Potions
8 Redstone
9 Tool
10 Weapon

- ItemSource

- Each item is generated with a randomly selected source name
- Chance for each item is randomly assigned
- Output quantity for each item is randomly assigned

SOURCENAME	ITEMNAME	CHANCE	OUTPUTQUANTITY
1 Snow	KAW436	2	7
2 Clay	KLL428	6	1
3 Bone	GCW793	83	1
4 Gunpowder	RQS216	53	3
5 Bone	GJQ508	61	1
6 Bone	MIV943	12	6
7 Sand	QFA057	35	1
8 Glowstone	XFI581	51	6
9 Gravel	DFG163	67	3
10 Ice	TKX505	7	1
11 Quartz	JLV931	32	1
12 Gunpowder	RR0494	53	7
13 Quartz	ZXM806	14	5
14 Ice	WWN749	33	3
15 Gunpowder	KWH846	57	2
16 Sand	ZM2313	83	7
17 Dirt	AUQ115	16	6
18 Cobblestone	BSR819	18	1
19 Quartz	PRX153	64	2
20 Snow	CYM188	54	7

- Recipe

- Some items with its source name are assigned a recipe type
- Recipe is randomly assigned as either "Smelting" or "Crafting"

SOURCENAME	ITEMNAME	RECIPETYPE
1 Bone	GJQ508	Smelting
2 Bone	GCW793	Smelting
3 Ice	WWN749	Crafting
4 Gunpowder	KWH846	Crafting
5 Quartz	ZXM806	Smelting

- Mining

- Some items with its source name are considered "mine-able" items

SOURCENAME	ITEMNAME
1 Gravel	DFG163
2 Quartz	JLV931

- Chest

- Some items with its source name are put into a chest
- Structure explains the chests make

SOURCENAME	ITEMNAME	STRUCTURE
1 Glowstone	XFI581	Wooden Chest
2 Ice	WWN749	Wooden Chest

- Location

- Each item and its source name are assigned a depth and biome
- Depth describes the block level that the item can be found
- Biome describes the environment that the item can be found

SOURCENAME	ITEMNAME	DEPTH	BIOME
1 Snow	KAW436	22 River	
2 Clay	KLL428	137 Desert	
3 Bone	GCW793	22 Crimson Forest	
4 Gunpowder	RQS216	77 Badlands	
5 Bone	GJQ508	60 Beach	
6 Bone	MIV943	57 Ocean	
7 Sand	QFA057	104 Birch Forest	
8 Glowstone	XFI581	169 Taiga	
9 Gravel	DFG163	176 Plains	
10 Ice	TKX505	20 Frozen River	
11 Quartz	JLV931	179 Warm Ocean	
12 Gunpowder	RRO494	137 Ice Spikes	
13 Quartz	ZXM806	112 Mushroom Fields	
14 Ice	WWN749	42 Ocean	
15 Gunpowder	KWH846	36 Ocean	
16 Sand	ZMZ313	69 Beach	
17 Dirt	AUQ115	106 Snowy Tundra	
18 Cobblestone	BSR819	196 Taiga	
19 Quartz	PRX153	172 Crimson Forest	
20 Snow	CYM188	115 Frozen Ocean	

- ItemToTag

- Each item is assigned with a randomly selected Tag name
- Tag name is a set list of tags to describe items

ITEMNAME	TAGNAME
1 AUQ115	Building Materials
2 BSR819	Potions
3 CYM188	Tool
4 DFG163	Potions
5 GCW793	Tool
6 GJQ508	Potions
7 JLV931	Tool
8 KAW436	Potions
9 KLL428	Block
10 KWH846	Block
11 MIV943	Potions
12 PRX153	Block
13 QFA057	Armour
14 RQS216	Redstone
15 RRO494	Weapon
16 TKX505	Block
17 WWN749	Block
18 XFI581	Food
19 ZMZ313	Block
20 ZXM806	Redstone

- BlockToMine
  - Each item from Mining is assigned an input item
  - The input item is an existing item
  - Some items remain unchanged after

	SOURCENAME	OUTPUTITEMNAME	INPUTITEMNAME
1	Gravel	DFG163	CYM188
2	Quartz	JLV931	JLV931