

## Appendix A

### MushroomPP DBO Glossary

Glossary Term	Definition/Description	Aliases
Hardware	A hardware entity represents the sensors that extract environmental information	Sensor
Mushroom Stage	A mushroom stage represents the different stages of mushroom growth cycle	Stage
Permission level	A permission level provides different levels of access based on the user types	
Sensor Entry	A sensor entry represents a collection of environmental variables from a piece of hardware	
Specimen	A specimen represents an instance of a mushroom	Mushroom
Status Entry	Represents the status of an instance of a mushroom	

User	Represents the users profile and authentication	
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Entity name	Attributes	Description	Data type & length	Nulls
_hardware	<ul style="list-style-type: none"> <li>- hardware_key</li> <li>- hardware_id</li> <li>- desired_air_temperature</li> <li>- desired_air_humidity</li> <li>- desired_air_co2</li> <li>- desired_light_level</li> <li>- user_key</li> </ul>	<ul style="list-style-type: none"> <li>- Uniquely identifies hardware (PK)</li> <li>- Identifier for LoRawan network</li> <li>- Desired variable for air temperature</li> <li>- Desired variable for air humidity</li> <li>- Desired variable for co2 levels</li> <li>- Desired variable for light levels</li> <li>- User that is associated with the hardware</li> </ul>	<ul style="list-style-type: none"> <li>- Integer</li> <li>- 16 variable characters</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Integer</li> </ul>	<ul style="list-style-type: none"> <li>- No</li> <li>- No</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> <li>- No</li> </ul>
_mushroom_stage	<ul style="list-style-type: none"> <li>- stage_key</li> <li>- stage_name</li> </ul>	<ul style="list-style-type: none"> <li>- Uniquely identifies a stage (PK)</li> <li>- Name of the stage</li> </ul>	<ul style="list-style-type: none"> <li>- Integer</li> <li>- 32 variable characters</li> </ul>	<ul style="list-style-type: none"> <li>- No</li> <li>- No</li> </ul>
_mushroom_type	<ul style="list-style-type: none"> <li>- type_key</li> <li>- mushroom_name</li> <li>- mushroom_genus</li> </ul>	<ul style="list-style-type: none"> <li>- Uniquely identifies a type (PK)</li> <li>- Species of a mushroom</li> <li>- Genus of a mushroom</li> </ul>	<ul style="list-style-type: none"> <li>- Integer</li> <li>- 32 variable characters</li> <li>- 32 variable characters</li> </ul>	<ul style="list-style-type: none"> <li>- No</li> <li>- No</li> <li>- No</li> </ul>
_permission_level	<ul style="list-style-type: none"> <li>- permission_key</li> <li>- permission_type</li> </ul>	<ul style="list-style-type: none"> <li>- Uniquely identifies a permission level</li> <li>- The type of permissions level</li> </ul>	<ul style="list-style-type: none"> <li>- Integer</li> <li>- 16 variable characters</li> </ul>	<ul style="list-style-type: none"> <li>- No</li> <li>- No</li> </ul>
_sensor_entry	<ul style="list-style-type: none"> <li>- entry_key</li> <li>- entry_time</li> <li>- air_temperature</li> <li>- air_humidity</li> <li>- air_co2</li> <li>- light_level</li> <li>- desired_air_temperature</li> <li>- desired_air_humidity</li> <li>- desired_air_co2</li> <li>- desired_light_level</li> <li>- specimen_key</li> </ul>	<ul style="list-style-type: none"> <li>- Uniquely identifies a sensor entry</li> <li>- The time that sensor entry was taken</li> <li>- The air temperature from the sensor</li> <li>- The air humidity from the sensor</li> <li>- The air co2 from the sensor</li> <li>- The light level from the sensor</li> <li>- Desired variable for air temperature</li> <li>- Desired variable for air humidity</li> <li>- Desired variable for co2 levels</li> <li>- Desired variable for light levels</li> <li>- Specimen that is associated with the sensor entry</li> </ul>	<ul style="list-style-type: none"> <li>- Integer</li> <li>- Date Time</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Integer</li> </ul>	<ul style="list-style-type: none"> <li>- No</li> <li>- No</li> <li>- No</li> <li>- No</li> <li>- No</li> <li>- No</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> </ul>
_specimen	<ul style="list-style-type: none"> <li>- specimen_key</li> <li>- planted_date</li> <li>- discarded_date</li> <li>- specimen_name</li> <li>- specimen_description</li> <li>- desired_air_temperature</li> <li>- desired_air_humidity</li> <li>- desired_air_co2</li> <li>- desired_light_level</li> <li>- type_key</li> <li>- hardware_key</li> <li>- user_key</li> </ul>	<ul style="list-style-type: none"> <li>- Uniquely identifies a specimen</li> <li>- Date of planting</li> <li>- Discard date of the specimen</li> <li>- The name of the specimen</li> <li>- Description of the specimen</li> <li>- Desired variable for air temperature</li> <li>- Desired variable for air humidity</li> <li>- Desired variable for co2 levels</li> <li>- Desired variable for light levels</li> <li>- Specimen's type</li> <li>- Specimen's hardware</li> <li>- Specimen's user</li> </ul>	<ul style="list-style-type: none"> <li>- Integer</li> <li>- Date Time</li> <li>- Date Time</li> <li>- 32 variable characters</li> <li>- 32 variable characters</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Real number</li> <li>- Integer</li> <li>- Integer</li> <li>- Integer</li> </ul>	<ul style="list-style-type: none"> <li>- No</li> <li>- No</li> <li>- Yes</li> <li>- No</li> <li>- No</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> <li>- Yes</li> <li>- No</li> <li>- Yes</li> <li>- Yes</li> </ul>
_status_entry	<ul style="list-style-type: none"> <li>- entry_key</li> </ul>	<ul style="list-style-type: none"> <li>- Uniquely identifies a status entry</li> </ul>	<ul style="list-style-type: none"> <li>- Integer</li> </ul>	<ul style="list-style-type: none"> <li>- No</li> </ul>

	- entry_time - stage_key - specimen_key	- The time that status entry was taken - The stage of the mushroom in entry - The specimen of the status entry	- Date Time - Integer - Integer	- No - No - No
_user	- user_key - username - password_hashed - permission_key - user_token	- Uniquely identifies a user - Username of the user - The hashed users password - The permission level of the user - The users access token	- Integer - 32 variable characters - 64 variable characters - Integer - 64 variable characters	- No - No - No - No - Yes

## Source Target-Mapping

Source			Target		
Table	Column	Data type	Table	Column	Data type
_mushroom_type	mushroom_name	nvarchar(32)	dim_specimen	mushroom_name	nvarchar(32)
_mushroom_type	mushroom_genus	nvarchar(32)	dim_specimen	mushroom_genus	nvarchar(32)
_specimen	specimen_key	int	dim_specimen	specimen_key	int
_status_entry	stage_name	nvarchar(32)	dim_specimen	stage_name	nvarchar(32)
_mushroom_stage	entry_time	datetime2(3)	dim_specimen	entry_time	datetime2(3)
_specimen	planted_date	datetime2(3)	fact_cultivation	planted_date	datetime2(3)
_sensor_entry	entry_time	datetime2(3)	fact_cultivation	entry_time	datetime2(3)
_sensor_entry	air_temperature	real	fact_cultivation	air_temperature	real
_sensor_entry	light_level	real	fact_cultivation	light_level	real
_sensor_entry	air_humidity	real	fact_cultivation	air_humidity	real
_sensor_entry	air_co2	real	fact_cultivation	air_co2	real
_specimen	specimen_key	int	fact_cultivation	specimen	int