

Report Lambda Cheatsheet

Voxel Farm Python - Report Lambda Cheatsheet



Typical sections in a Report Lambda

Get Inputs

Load Voxels

Combine Voxels

Compute & Output

Vanilla Python (no Pandas)

```
volume_total = 0.0
tonnes_total = 0.0
for v in vf.voxels:
    volume = vf.get_volume(voxels, v)
    grade = vf.get_attribute(voxels, v, 'fe')
    volume_total += volume
    tonnes_total += volume * grade * D

sum_volume = vf.start_sum('Object', 'Volume')
sum_tonnes = vf.start_sum('Object', 'Tonnes')
vf.sum(sum_volume, volume_total)
vf.sum(sum_tonnes, tonnes_total)
```

	Volume	Tonnes
Object		

Using Pandas

```
df_model = vf.load_pandas_dataframe(voxels)
df_model['tonnes'] = df_model['fe'] * df_model['volume'] * D
df_model = df_model[['volume', 'tonnes']]
result = df_model.sum(axis=0)
vf.sum_pandas_result('report', result)
```

Volume	Tonnes

report.csv

* Join data frames
using voxel_id

Voxel Joins

```
df_A.merge(df_B,
            left_on='voxel_id',
            right_on='voxel_id')
```

```
import voxelfarm as vf
```

Getting inputs that were passed to the lambda

Inputs allow the calling program to provide parameters to a Lambda execution

```
entity = vf.input_entity(id, label, type)

double = vf.input(id, label, default)
str = vf.input_string(id, label, default)
bool = vf.input_bool(id, label, default)
```

Input Entity Types

```
vf.type.voxel_terrain
vf.type.block_model
vf.type.point_cloud
vf.type.voxel_generator
vf.type.mesh
vf.type.voxel_mesh
vf.type.drill_holes
vf.type.indexed_ortho
vf.type.voxel_ortho
vf.type.geo_chem
```

Loading voxel data and its attributes

```
voxels = vf.load_voxels(entity, attr, custom_attr)
```

Native Attributes

```
vf.type.none
vf.type.volume
```

Custom Attributes

A string containing
comma-separated
attribute identifiers

* Combine multiple
types using binary OR
operator

Voxel Operations - Volumetric Booleans and Voxel Stacks

```
voxels = vf.voxels_union(voxelsA, voxelsB, attr, custom_attr)
voxels = vf.voxels_complement(voxelsA, voxelsB, attr, custom_attr)
voxels = vf.voxels_intersection(voxelsA, voxelsB, attr, custom_attr)
```

```
voxels = vf.start_composite()
vf.add_layer(voxels, voxelsA, mode)
vf.add_layer(voxels, voxelsB, mode)
vf.add_layer(voxels, voxelsC, mode)
```

Composition Modes

```
vf.layer_merge_mode.none
vf.layer_merge_mode.oldest
vf.layer_merge_mode.newest
vf.layer_merge_mode.min
vf.layer_merge_mode.max
```

Reading Results Back

```
vf.download_file(
    projectId, entityId,
    'report.csv', local_file)
```

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