DZ_SDO

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Utilities for the creation and manipulation of Oracle Spatial geometries.

Summary

DZ_SDO

FUNCTIONS

update_metadata_envelope	Procedure to update user_sdo_geom_metadata table with extents of the current set of geometry.
morton	Morton Key generator function by Simon Greener http://www.spatialdbadvisor.com/oracle_spatial_tips_tricks/138/spatial-sorting-of-data-via-morton-key
morton_key	Wrapper function to handle the conversion of geometry types into points before generating the morton key.
morton_update	Function to generate the morton key update clause.
morton_visualize	Function to visualize the results of a morton key spatial clustering.

FUNCTIONS

update_metadata_envelope

```
PROCEDURE update_metadata_envelope(p_table_name  IN VARCHAR2 ,
                                   p_column_name IN VARCHAR2 DEFAULT 'SHAPE')
```

Procedure to update user_sdo_geom_metadata table with extents of the current set of geometry.

Parameters

p_table_name	the table to examine
p_column_name	the spatial column in the table to examine

Returns

NA

Notes

- To avoid tracking dimension name, SRIDs and dimensions beyond X and Y this procedure requires the metadata record to already exist.
- Any M or Z dimensions are ignored and will remain as is.

morton

```
FUNCTION morton(p_column IN NATURAL ,
                p_row    IN NATURAL  ) RETURN INTEGER DETERMINISTIC
```

Morton Key generator function by Simon Greener http://www.spatialdbadvisor.com/oracle_spatial_tips_tricks/138/spatial-sorting-of-data-via-morton-key

Parameters

p_column	the morton grid column number
p_row	the morton grid row number

Returns

INTEGER

morton_key

```
FUNCTION morton_key(
  p_input          IN MDSYS.SDO_GEOMETRY ,
  p_x_offset       IN NUMBER ,
  p_y_offset       IN NUMBER ,
  p_x_divisor      IN NUMBER ,
  p_y_divisor      IN NUMBER ,
  p_geom_devolve IN VARCHAR2 DEFAULT 'ACCURATE' ,
  p_tolerance      IN NUMBER DEFAULT 0.05
) RETURN INTEGER DETERMINISTIC
```

Wrapper function to handle the conversion of geometry types into points before generating the morton key.

Parameters

p_input	input geometry to generate a morton key for.
p_x_offset	the offset to move x coordinates to be zero-based
p_y_offset	the offset to move y coordinates to be zero-based
p_x_divisor	the grid divisor for the x axis
p_y_divisor	the grid divisor for the y axis
p_geom_devolve	either ACCURATE or FAST to control how points are generated.
p_tolerance	tolerance value to use when generating centroids and such.

Returns

INTEGER

Notes

- for p_geom_devolve with polygon input, ACCURATE uses SDO_CENTROID while FAST uses SDO_POINTONSURFACE.
- for p_geom_devolve with linear or multipoint input, ACCURATE uses the SDO_CENTROID of the geometry MBR while FAST uses the first point in the geometry.

morton_update

```
FUNCTION morton_update(
  p_owner              IN VARCHAR2 DEFAULT NULL ,
  p_table_name         IN VARCHAR2 ,
  p_column_name        IN VARCHAR2 DEFAULT 'SHAPE' ,
  p_use_metadata_env IN VARCHAR2 DEFAULT 'FALSE' ,
  p_grid_size          IN NUMBER
) RETURN VARCHAR2
```

Function to generate the morton key update clause.

Parameters

p_owner	the owner of the table to examine
p_table_name	the table to examine
p_column_name	the spatial column in the table to examine
p_use_metadata_env	TRUE/FALSE whether to obtain envelope from metadata
p_grid_size	the desired morton grid size

Returns

VARCHAR2

Notes

- p_use_metadata_env value of TRUE will obtains envelope size from metadata. FALSE will calculate the values from the table via SDO_AGGR_MBR (and may take a long time).
- Probably the most important value here is the grid size. You should use a reasonable grid size.

morton_visualize

```
FUNCTION morton_visualize(
   p_owner                IN VARCHAR2 DEFAULT NULL ,
   p_table_name           IN VARCHAR2 ,
   p_column_name          IN VARCHAR2 DEFAULT 'SHAPE' ,
   p_key_field            IN VARCHAR2 DEFAULT 'OBJECTID' ,
   p_key_start            IN VARCHAR2 ,
   p_morton_key_range IN NUMBER ,
   p_morton_key_field   IN VARCHAR2 DEFAULT 'MORTON_KEY'
) RETURN MDSYS.SDO_GEOMETRY
```

Function to visualize the results of a morton key spatial clustering. Intended for use with mapviewer or other sdo_geometry viewers that can directly display the result of a query.

Parameters

p_owner	the owner of the table to examine
p_table_name	the table to examine
p_column_name	the spatial column in the table to examine
p_key_field	the field name used to obtain the start record
p_key_start	the field value used to obtain the start record
p_morton_key_range	the range of morton values to fetch results for
p_morton_key_field	the name of the field holding the morton key

Returns

MDSYS.SDO_GEOMETRY

Notes

- Use a modest morton key range to avoid an overly large return geometry.
- You may wish to index the morton key field for performance when running this function.