Temporal Mean Center

Title Temporal Mean Center

Description

This geogrocessing script is intended to do batch mean center analysis tool runs on a feature class based on tool determined time bins. Each bin will be a will be a mean center run in a merged feature class with temporal field IDs.

Usage

This tool is used to visualize temporal data by splitting a feature class into time bins with make feature layer and then running a mean center analysis tool on each time bin. After this tool runs time fields are joined to the feature class.

Syntax

TemporalMeanCenter (Input_Feature_Class, Output_Feature_Class, Start_Time_or_Single_Time_Field, {End_Time}, Time_Interval, {Bin_Start}, {Case_Field}, {Weight_Field}, {Dimension_Field})

Parameter	Explanation	Data Type
Input_Feature_Class	Dialog Reference Is the input feature class or table that will be split based on a datetime field. Python Reference Uses Python deltatime and datetime libraries.	Feature Class
Output_Feature_Class	Dialog Reference Final feature class created by multiple mean centers that are appended to each time bin. There is no python reference for this parameter.	Feature Class
Start_Time_or_Single_Time_Field	Dialog Reference Either the single datetime field or a start field that will be used with an endtime to extract all datetime values that are within the range of the created timebins. There is no python reference for this parameter.	Field
End_Time (Optional)	Dialog Reference This optional field is only used with specific datasets that have an end time field. If there is not end time field chosen, only start time will be used to both construct the time ranges and the final end time. Python Reference **if** FieldExist(*inFeatureClass*, *end_time*) **and**	Field

	*end_time***:**arcPrint("Using start and end time to grab feature classes whose bins occur within an events ""start or end time.")end_time_min, end_time_max **=** get_min_max_from_field(*inFeatureClass*, *end_time*) start_time_field **=** *start_time*end_time_field **=** *end_time*start_time_range **=** start_time_minend_time_range **=** end_time_max**else:**arcPrint("Using only first datetime start field to construct time bin ranges.") start_time_field **=** *start_time*end_time_field **=** *start_time*start_time_range **=** start_time_minend_time_range **=** start_time_max	
Time_Interval	Dialog Reference The number of seconds, minutes, hours, days, weeks, or years that will represent a single time step. Examples of valid entries for this parameter are 1 Day, 12 Hours, 30 Seconds, or 1 Minute. Units greater than weeks will break the tool, if you need years, put it into day or week equivalents. _____ Python Reference **@arcToolReportdef construct_time_bin_ranges** (*first_time*, *last_time*, *time_delta*)**:temporal_counter = *first_timetotal_time_range = last_time - first_timebin_count = int(np.ceil (total_time_range.total_seconds() / time_delta.total_seconds()))nested_time_bin_pairs = []for bin in range(bin_count):start_time = temporal_counterend_time = temporal_counter + time_deltanested_time_bin_pairs.append ([start_time, end_time])temporal_counter = end_timereturn nested_time_bin_pairs***	Time unit
Bin_Start (Optional)	Dialog Reference This is the time you want the binning process to start from. If you place a datetime here, it will replace the minimum time value of the start time field you selected as the bin start time. For example selecting 1990/1/1 12:00:00 AM would start the binning interval at that time period rather than a minimum calculated by the script. There is no python reference for this parameter.	Date
Case_Field (Optional)	Dialog Reference Field used to group features for separate mean center calculations. The case field can be of integer, date, or string type.	Field

	There is no python reference for this parameter.	
Weight_Field (Optional)	Dialog Reference The numeric field used to create a weighted mean center. There is no python reference for this parameter.	Field
Dimension_Field (Optional)	Dialog Reference A numeric field containing attribute values from which an average value will be calculated. There is no python reference for this parameter.	Field

Code Samples

There are no code samples for this tool.

Tags

Time, feature class, Mean center, FGDB, time bins, animation

Credits

David Wasserman

Use limitations

There are no access and use limitations for this item.

You are currently using the Item Description metadata style. Change your metadata style in the Options dialog box to see additional metadata content.