Table 1

		Input			
Value	Media	_	Party	Output	
- Value	Wicaia	0301	1 dity	Output	
GlobalAggregate				amount	Sum of Bids across Parties, Users and Media
GlobalUserAggregate		1		amount	Sum of Bids across Parties and Media for given User
GlobalMediaAggregate	,	٧		amount	Sum of Bids across Parties and Users for given Media
GlobalUserMediaAggregate	√ ,	,		amount	Sum of Bids across Parties for given User and Media
	1	1	1	_	Sum of Bids across Users and Media for given Party
PartyAggregate		,	1	amount	
PartyUserAggregate	,	1	√	amount	Sum of Bids for given Party and User
PartyMediaAggregate	√		√ ,	amount	Sum of Bids for given Party and Media
PartyUserMediaAggregate	1	1	√	amount	Sum of Bids for given Party, User and Media
GlobalBidTop				Amount, Party, User, Media	Highest Bid amount across Parties, Users and Media
GlobalAggregateTop				Amount, Party, User, Media	Highest Aggregate amount across Parties, Users and Media
GlobalUserBidTop		1		Amount, Party, Media	Highest Bid amount across Parties and Media for given User
GlobalUserAggregateTop		1		Amount, Party, Media	Highest Aggregate amount across Parties and Media for given User
GlobalUserMediaBidTop	1	1		Amount, Party	Highest Bid amount across Parties for given User and Media
GlobalUserMediaAggregateTop	1	1		Amount	Highest Aggregate amount across Parties for given User and Media
PartyBidTop			J	Amount, User, Media	Highest Bid amount across Users and Media for given Party
PartyAggregateTop			J	Amount, User, Media	Highest Aggregate amount across Users and Media for given Party
PartyUserBidTop		1	1	Amount, Media	Highest Bid amount across media for given Party and User
PartyUserAggregateTop		1	1	Amount, Media	Highest Aggregate amount across media for given Party and User
PartyMediaBidTop	1		1	Amount, User	Highest Bid amount across Users for given Party and Media
PartyMediaAggregateTop	1		J	Amount, User	Highest Aggregate amount across Users for given Party and Media
PartyUserMediaBidTop	√	J	J	Amount	Highest Bid amount for given Party, User and Media
GlobalBidAvg				Amount	Average Bid across Parties, Users and Media
GlobalAggregateAvg				Amount	Average Aggregate across Parties, Users and Media
GlobalUserBidAvg		J		Amount	Average Bid across Parties and Media for given User
GlobalUserAggregateAvg		√		Amount	Average Aggregate across Parties and Media for given User
GlobalUserMediaBidAvg	J	1		Amount	Average Bid across Parties for given User and Media
GlobalUserMediaAggregateAv g	1	1		Amount	Average Aggregate across Parties for given User and Media
GlobalMediaBidAvg	1			Amount	Average Bid across Parties and Users for given Media
GlobalMediaAggregateAvg	1			Amount	Average Aggregate across Parties and Users for given Media
PartyBidAvg			J	Amount	Average Bid across Users and Media for given Party
PartyAggregateAvg			1	Amount	Average Aggregate across Users and Media for given Party
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		Input				
Value	Media	User	Party	Output		
PartyUserBidAvg		1	1	Amount	Average Bid across Media for given Party and User	
PartyUserAggregateAvg		1	J	Amount	Average Aggregate across Media for given Party and User	
PartyUserMediaBidAvg	J	1	1	Amount	Average Bid for given Party, User and Media	
PartyMediaBidAvg	J		1	Amount	Average bid across Users for given Party and Media	
PartyMediaAggregateAvg	J		1	Amount	Average Aggregate across Users for given Party and Media	
GlobalBidRank				Order		
GlobalAggregateRank				Order		
GlobalUserAggregateRank		1		Order		
GlobalUserMediaAggregateRa nk	J	1		Order		
PartyUserAggregateRank		1	1	Order		
PartyUserMediaAggregateRan k		1	1	Order		
GlobalUserBidRank		1		Order		
GlobalUserAggregateRank		1		Order		
GlobalUserMediaBidRank	J	1		Order		
GlobalUserMediaAggregateRa nk	1	1		Order		
PartyUserBidRank		1	1	Order		
PartyUserAggregateRank		1	1	Order		
PartyUserMediaBidRank	J	1	1	Order		
GlobalUserBidAvgRank		1		Order		
GlobalUserAggregateAvgRank		1		Order		
GlobalUserMediaBidAvgRank	1	1		Order		
GlobalUserMediaAggregateAv gRank	1	1		Order		
PartyUserBidAvgRank		1	1	Order		
PartyUserAggregateAvgRank		1	J	Order		
PartyUserMediaBidAvgRank	1	1	1	Order		

Value		
GlobalAggregate		
GlobalUserAggregate		
GlobalMediaAggregate		
GlobalUserMediaAggregate		
PartyAggregate		
PartyUserAggregate		
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GlobalBidTop		
GlobalAggregateTop		
GlobalUserBidTop		
GlobalUserAggregateTop		
GlobalUserMediaBidTop		
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GlobalUserMediaBidAvg		
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GlobalMediaBidAvg		
GlobalMediaAggregateAvg		
PartyBidAvg		
PartyAggregateAvg		

Value		
PartyUserBidAvg		
PartyUserAggregateAvg		
PartyUserMediaBidAvg		
PartyMediaBidAvg		
PartyMediaAggregateAvg		
GlobalBidRank		
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GlobalUserAggregateRank		
GlobalUserMediaBidRank		
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PartyUserBidRank		
PartyUserAggregateRank		
PartyUserMediaBidRank		
GlobalUserBidAvgRank		
GlobalUserAggregateAvgRank		
GlobalUserMediaBidAvgRank		
GlobalUserMediaAggregateAv		
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PartyUserBidAvgRank		
PartyUserAggregateAvgRank		
PartyUserMediaBidAvgRank		

Value	
GlobalAggregate	
GlobalUserAggregate	
GlobalMediaAggregate	
GlobalUserMediaAggregate	
PartyAggregate	
PartyUserAggregate	
PartyMediaAggregate	
PartyUserMediaAggregate	
GlobalBidTop	
GlobalAggregateTop	
GlobalUserBidTop	
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GlobalBidRank	
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GlobalUserBidRank	
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PartyUserBidRank	
PartyUserAggregateRank	
PartyUserMediaBidRank	
GlobalUserBidAvgRank	
GlobalUserAggregateAvgRank	
GlobalUserMediaBidAvgRank	
GlobalUserMediaAggregateAv gRank	
PartyUserBidAvgRank	
PartyUserAggregateAvgRank	
PartyUserMediaBidAvgRank	