

RA

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## Relational Algebra

1.  $\Pi_{nameFirst, birthYear}(\sigma_{birthCountry='Panama' \wedge weight > 79}(people))$
2.  $hrbatters := \Pi_{playerID}(\sigma_{h>1}(\gamma_{playerID, SUM(HR) \rightarrow h}(batting)))$   
 $\delta(\Pi_{nameFirst, nameLast}(\sigma_{birthYear > 1985}(people \bowtie hrbatters)))$
3.  $Wteams := \delta(\Pi_{teamId}(\sigma_{name \text{ like } \%Washington\%}(teams)))$   
 $Wsalaries := \Pi_{playerID, salary}(\gamma_{playerID, AVG(salary) \rightarrow salary}(salaries \bowtie Wteams))$   
 $\Pi_{nameFirst, nameLast, salary}(people \bowtie Wsalaries)$
4.  $sals := \Pi_{playerID, earnings}(\gamma_{playerID, SUM(salary) \rightarrow earnings}(salaries))$   
 $\Pi_{nameFirst, nameLast, earnings}(\tau_{earnings \text{ DESC}}(sals \bowtie people))$
5.  $a := awardsPlayers \quad b := awardsPlayers$   
 $p := \delta(\Pi_{a.playerId}(\sigma_{a.playerId=b.playerId \wedge a.yearId < > b.yearId}(aXb)))$   
 $\Pi_{a.playerId, total \ awards}(\gamma_{COUNT(a.playerID) \rightarrow total \ awards}(player \bowtie p))$