# Programming Questions

Utilize MapReduce to find the answers to these questions.

1. Find the mean, median, and standard deviation of the ratings for each of the movie genres. For each statistic (mean, median, or standard deviation), only use a single MapReduce program.

Output for sample mean calculation:

Film-Noir 3.9408055354000218

Drama 3.6742773734853547

Fantasy 3.5029912314315985

Thriller 3.5126902934511794

Horror 3.275260214307868

(no genres listed) 3.208014943114281

Romance 3.5424619995390905

Children 3.4166406309798836

Adventure 3.507091937178361

Action 3.4544531514134182

Mystery 3.6615097685590157

Crime 3.6785019629867692

IMAX 3.637097658372336

War 3.8032667825565434

Documentary 3.722772310125531

Animation 3.610498964247507

Musical 3.5439135923140777

Comedy 3.4174603547910225

Sci-Fi 3.455172838867968

Output for sample median calculation:

Film-Noir 4.0

Drama 4.0

Fantasy 3.5

Thriller 3.5

Horror 3.5

(no genres listed) 3.5

Romance 4.0

Children 3.5

Adventure 3.5

Action 3.5

Mystery 4.0

Crime 4.0

IMAX 4.0

War 4.0

Documentary 4.0

Animation 4.0

Musical 4.0

Comedy 3.5

Sci-Fi 3.5

Output for sample standard deviation calculation:

Film-Noir 0.9154781611402477

Drama 1.002524350894216

Fantasy 1.0867500247329882

Thriller 1.0398685086065347

Horror 1.1520617325923062

(no genres listed) 1.2310507794221146

Romance 1.046780167005858

Children 1.1010527199833091

Adventure 1.0675220659603486

Action 1.0721365559782599

Mystery 1.0119406716579022

Crime 1.0132314135781613

IMAX 1.0274731139134385

War 0.9968902171996887

Documentary 1.0220074103047196

Animation 1.0317178473795843

Musical 1.0627111413546169

Comedy 1.0850123560000309

Sci-Fi 1.0916316918987354

1. Using a single MapReduce program, identify the user who provides the most rating. Which genre does this user watch the most?

Output for sample user identification

186590 -- Total Rating Counts: 13250 -- Most Rated Genre: Drama - 8026