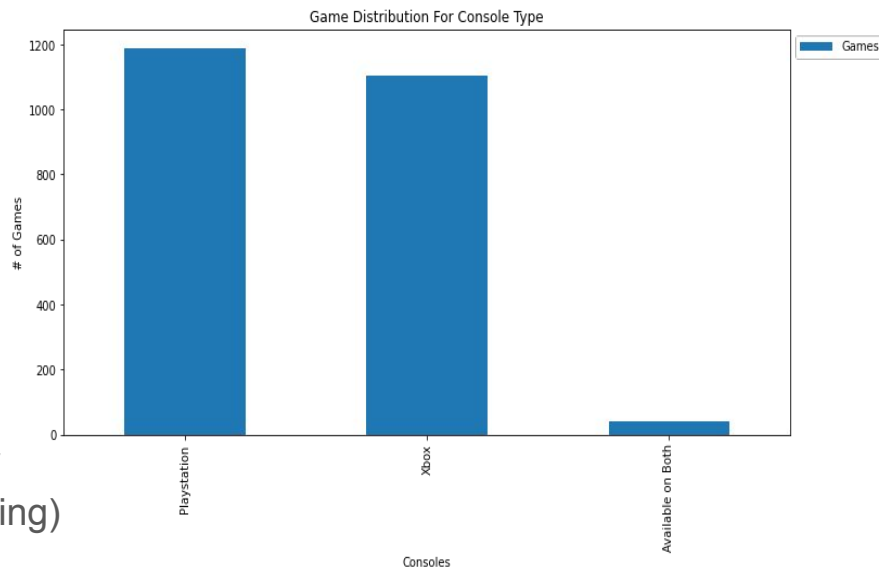# ESRB Rating Project

By: Cody Freese

Games by Console

- Our dataset includes mostly console exclusives
  - Xbox One & Playstation 4 both boast over 2,000 games
- Xbox & Playstation Exclusives
  - While this dataset focuses mainly on console exclusives, console type does not weigh on a games rating

- Very few games available on both
  - Important to note that many games available on both tend to be more popular multiplayer games (Fortnite/CoD/Wargaming)
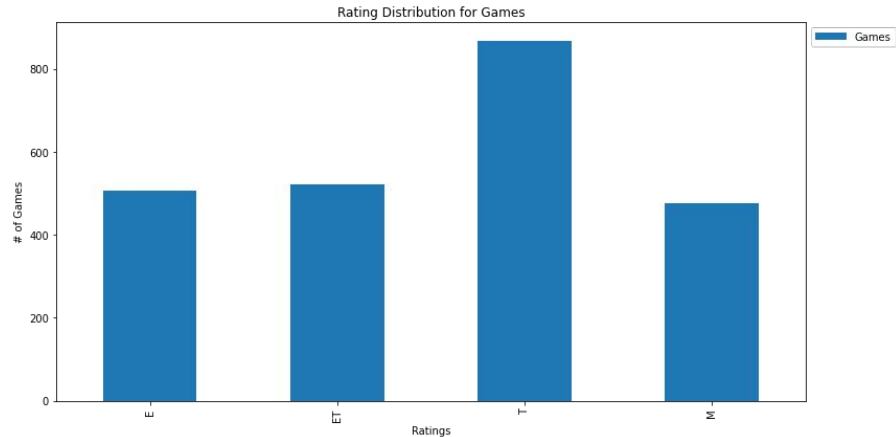
Games by Rating

- Majority of our games are rated T for Teen
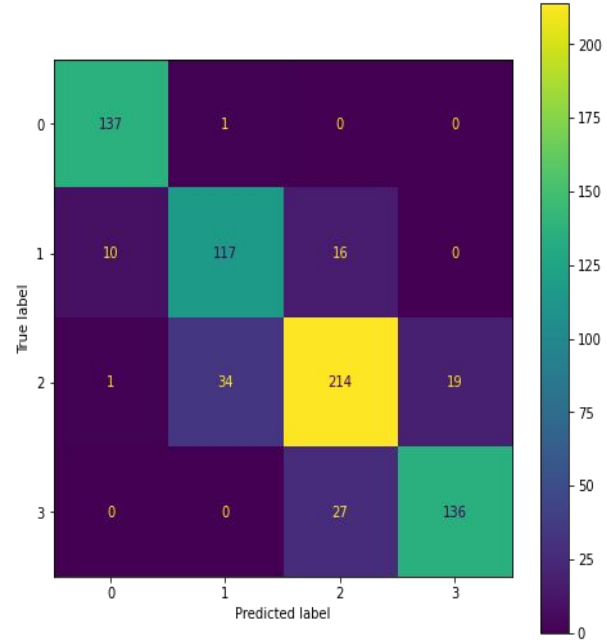- E & ET are a specific grey area Where characteristics can be Weighted differently if they are Animated or of Cartoon variety
- M rated games include games like:
  - Halo: Reach
  - Red Dead Redemption
  - Grand Theft Auto

Rating Distribution for Games

Random Forest Classification

- Final model
- Model does not Classify M as E (Important)

- Model is effective at being able to Identify specific ratings
- Not the best at deciphering +/- One tier of rating (E from ET, ET from T)
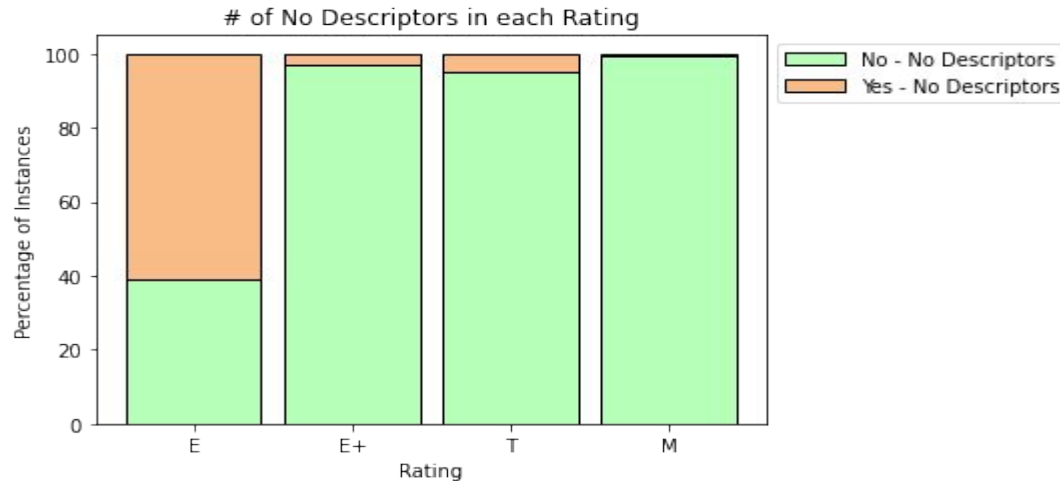
Recommendations

- Use for quality control to be used in tandem with more evaluation methods
- Can help identify potential factors for/against rating
- Effective check for minor protection against mislabeled M rated games

	Precision	Recall	F1-Score	Support
0 = E	93%	99%	96%	138
1 = ET+	74%	85%	79%	143
2 = T	84%	78%	80%	268
3 = M	89%	82%	85%	163
Weighted Average	85%	86%	85%	712
Accuracy: 84.41%				

Future Work

- Research what 'No_Descriptors' is comprised of
- Find out how much weight each variable plays in the rating as to be able to pinpoint which variables weigh towards each rating
- Explore other parameter tuning and estimators

# of No Descriptors in each Rating

Thank You

Any Questions???