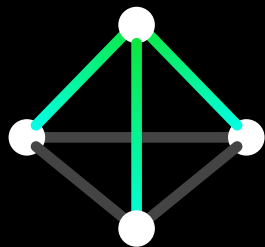


# stage 3 & 4

Solving problems | Software preview

---

# Review



Binary Search Tree

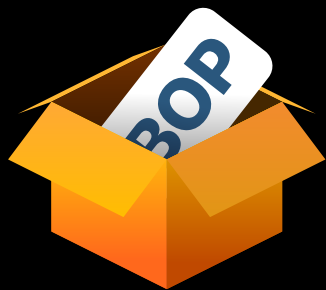


Box Office Prediction



Time Scheduling

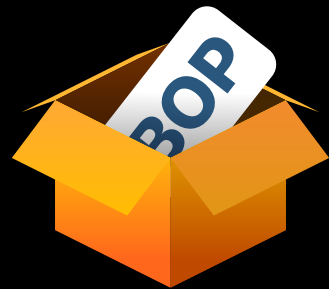
# Today



Box Office Prediction



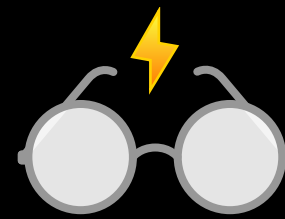
Time Scheduling



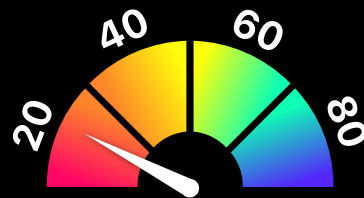
# Box Office Prediction



Director



Actor



score



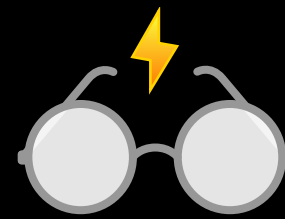
AgeGroup



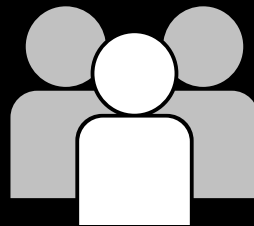
Genre



Director



Actor



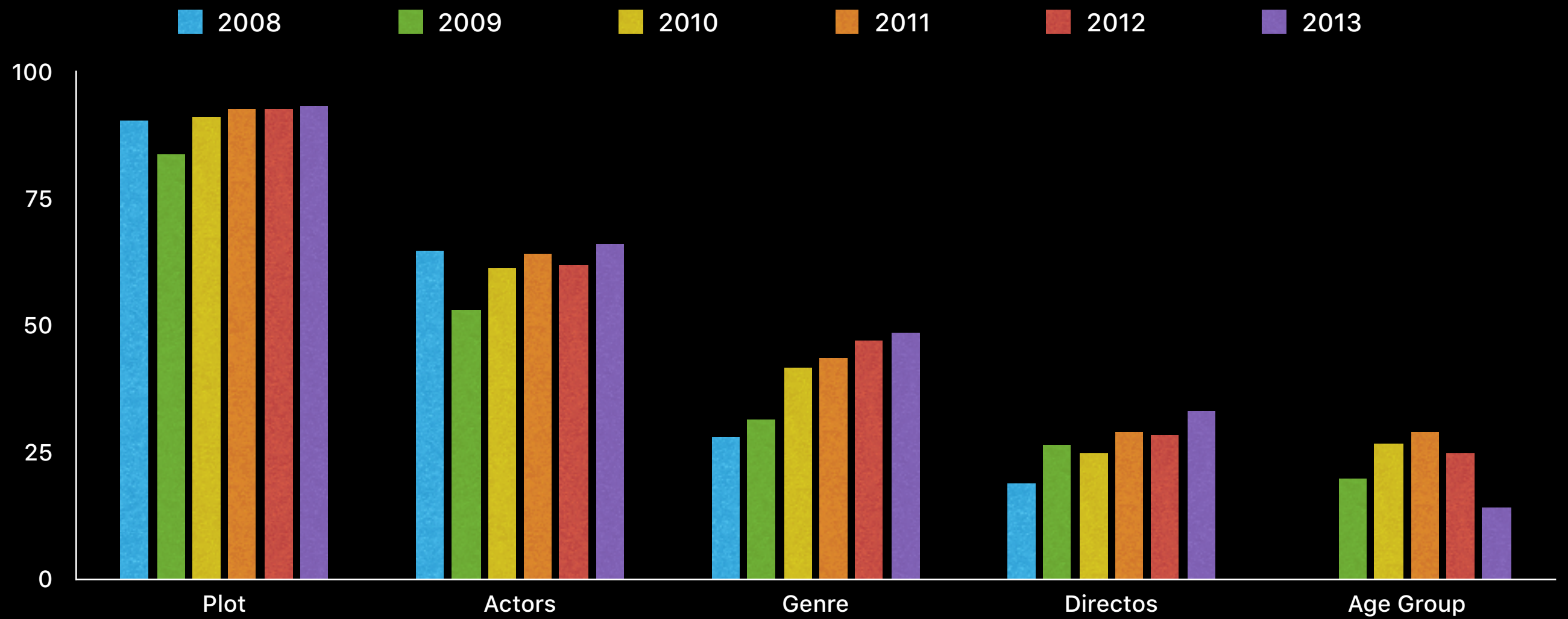
# Population



AgeGroup



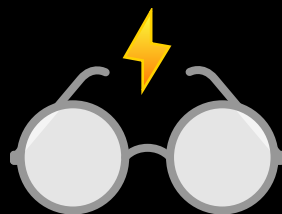
Genre



Considerations when choosing a movie.

**We can't digitize plots**





27

66

3

4

28

67

2

3

29

68

1

2

30

69

0

1

31

70

100

0

32

71

99

100

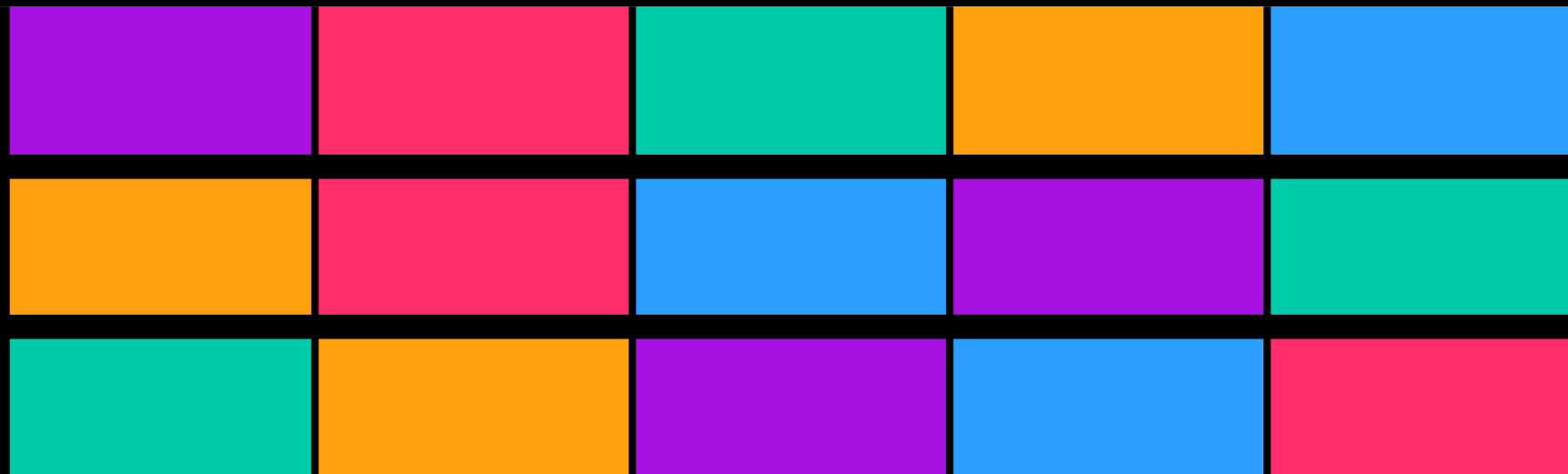
33

72

98

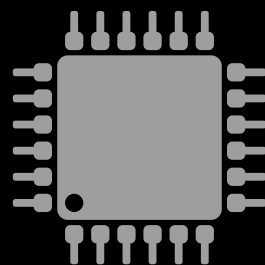
99

Original



Omtimized





120,000,000  
Loops

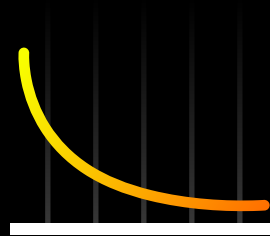
Too many loops to get the most optimized coefficients.



# Time Scheduling



Database



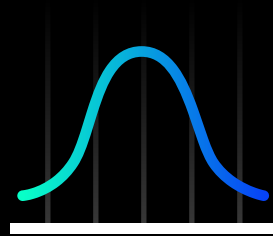
# Exponential Random Distribution



Predict the number of people  
for a day

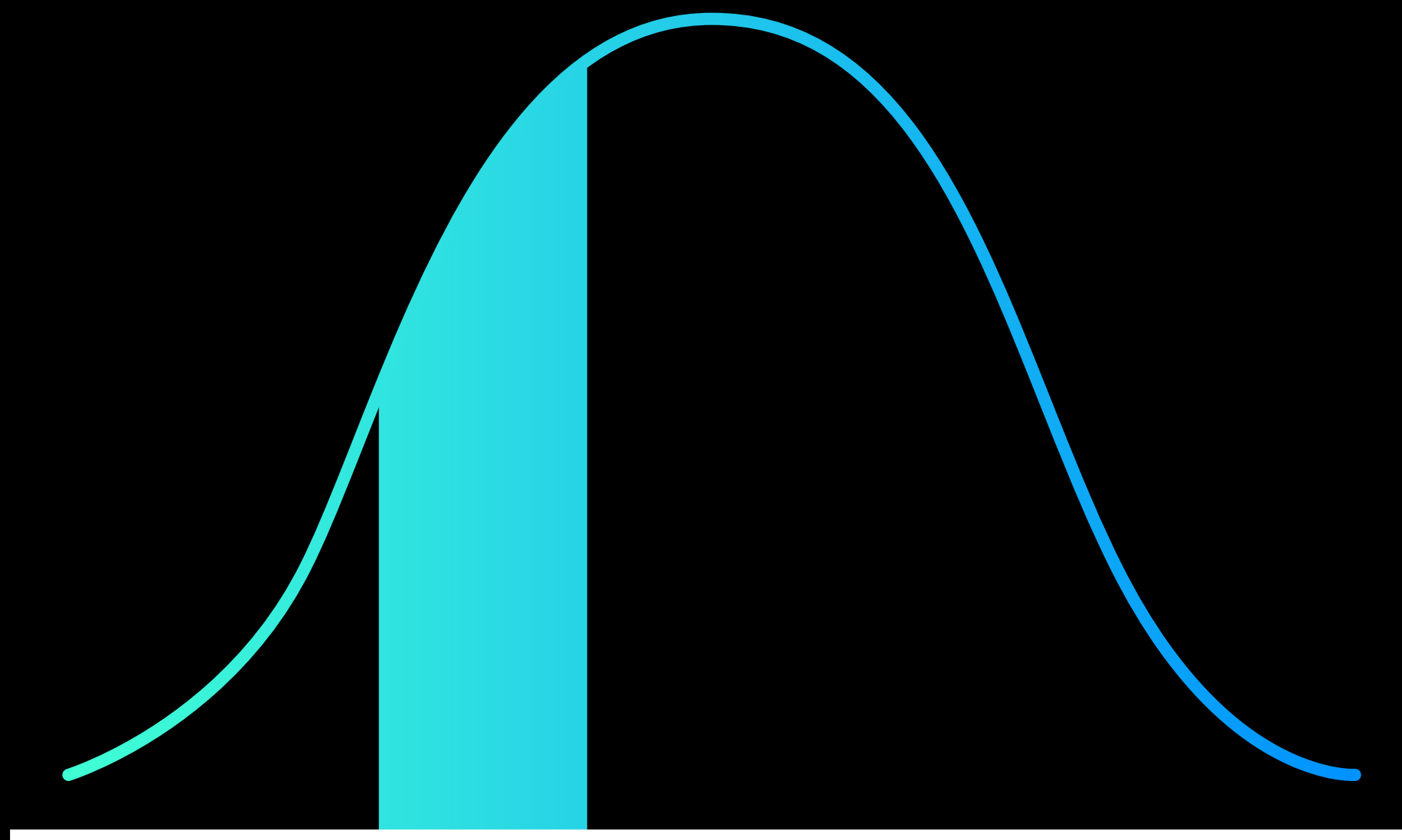
$$f_X(x) = \lambda e^{-\lambda x}$$

$$P(X \geq a) = \int_a^{\infty} \lambda e^{-\lambda x} dx$$



# Normal Random Distribution







X





CASSANDRA

*Demo*



# CASSANDRA

Box Office Prediction & Time Scheduling Software

Start

Developers

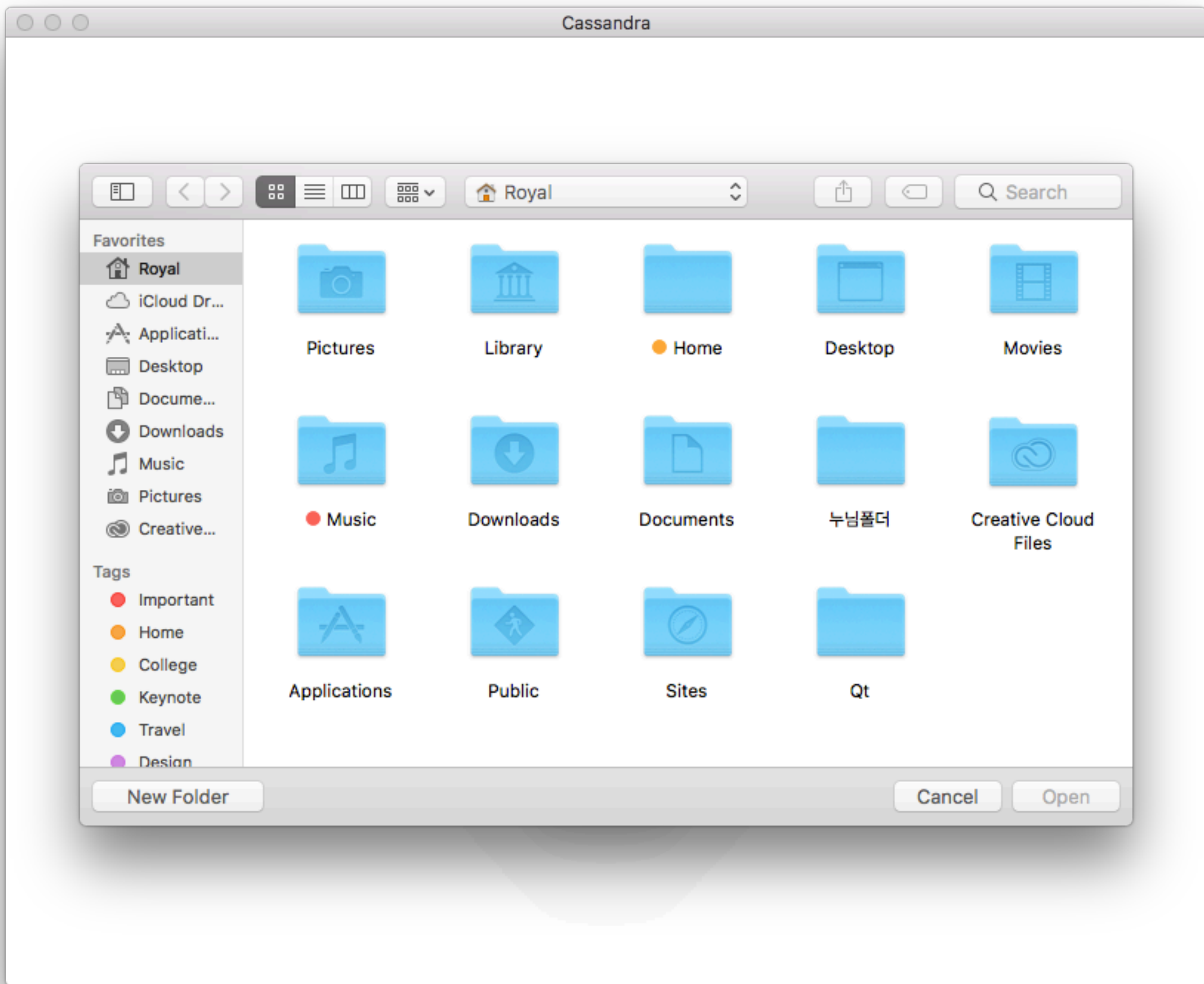


Cassandra



Select movie database

Go Back



# Actors' and Directors' Score

## Actors

이승준	90
톰 히들스턴	70
오건호	30
노아 테일러	40
추소영	30
류승범	90

## Directors

김한민	90
월리 피스터	20
길 키넨	40
사이몬 J.스미스	60
조규장	20
박대민	50

Search actors

Search directors

Predict Box Office

Go Back



# Actors' and Directors' Score

## Actors

로버트 포스터	70
로버트 호프먼	30
로버트 패틴슨	80
로버트 드 니로	60
로버트 네퍼	30
로버트 레드포드	60

로버트

## Directors

최동훈	90
크리스토퍼 놀란	90
마이클 베이	90
이환경	90
이석훈	90
추창민	90

90

Predict Box Office

Go Back

# Create a new movie

## Movie title

닥터 스트레인지

## Directors

스콧 데릭슨

## Actors

브리긴스/토니 폴 웨스트/시나 시호코 나가이

## Running Time (min)

115

## Genre

- ☐ Action ☐ Adventure ☐ Animation
- ☐ Comedy ☐ Crime ☐ Documentary
- ☐ Drama ☒ Fantasy ☐ Family
- ☐ Horror ☐ Historical ☐ Mystery
- ☐ Musical ☐ Romance ☐ SF
- ☐ Thriller ☐ War ☐ Western

## Age

- ☐ All ☒ 12 ☐ 15 ☐ 18 ☐ Adult

Done

Go Back



Cassandra

Complete

Add more movies

## Prediction result

형	권수경	조정석, 디오, 박신혜, 김강현, 지대한	코미디	12세	3076954
닥터 스트레인지	스콧 데릭슨	베네딕트 컴버배치, 레이첼 맥아담스, 틸다 스윈튼, 매즈 미켈슨, 치웨텔 에지오포, 스콧 앳킨스, 마이클 스틸버그, 베네딕 왕, 에이미 랜덱커, 단테 브리긴스, 토니 풀 ...	판타지	12세	5539406
럭키	이계벽	유해진, 이준, 조윤희, 임지연, 조한철, 김민상, 차엽, 김지안, 성병숙, 박승태, 고준, 이용녀, 금광산, 김한규, 차순형, 이승철, 이성욱, 정희태, 이동용, 김서현, 송요셉	코미디	15세	6975394

Start time scheduling!

# 형

상영중 >

MY ANNOYING BROTHER, 2016

관람객                                                       