Movielens

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
## Joining, by = c("userId", "movieId", "rating", "timestamp", "title", "genres")
```

RMSE using different models

Mean rating :

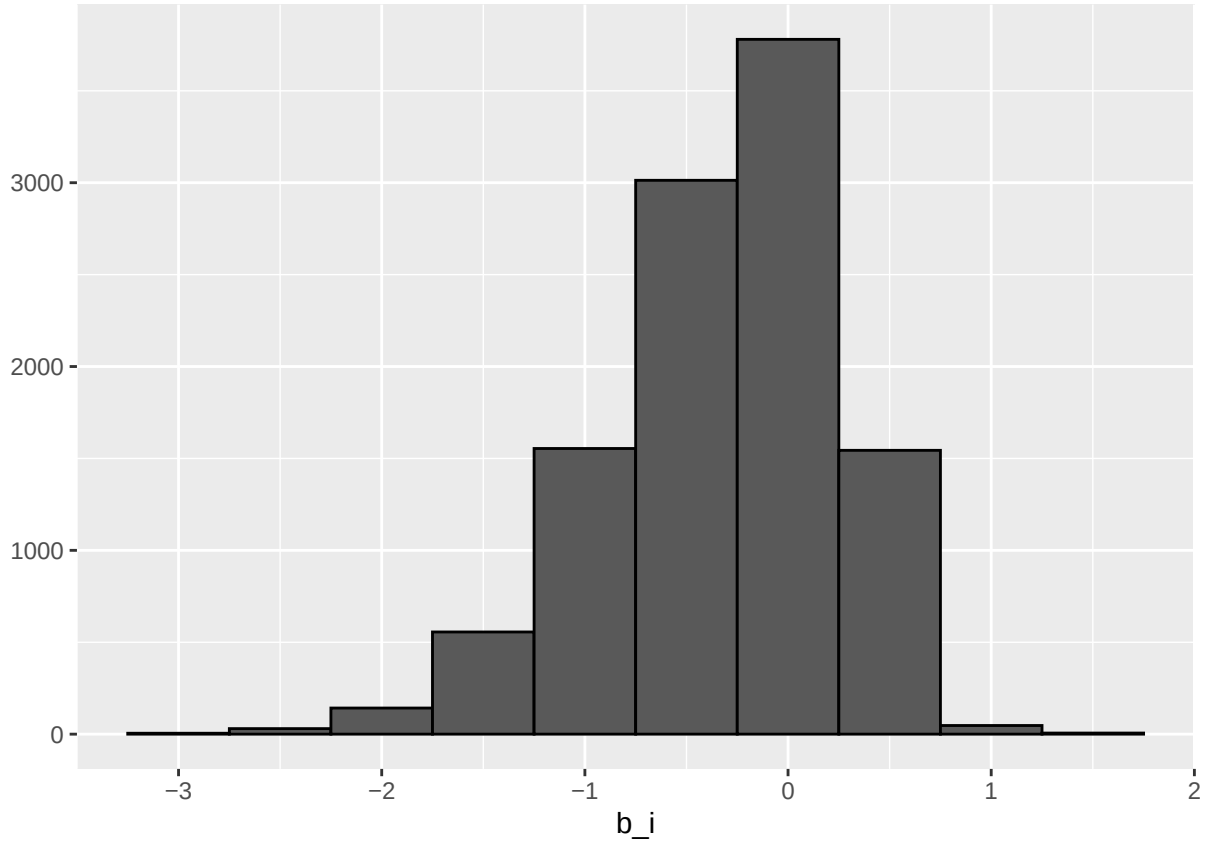
```
## [1] 3.512465
```

##Predict using :

1. Mean rating

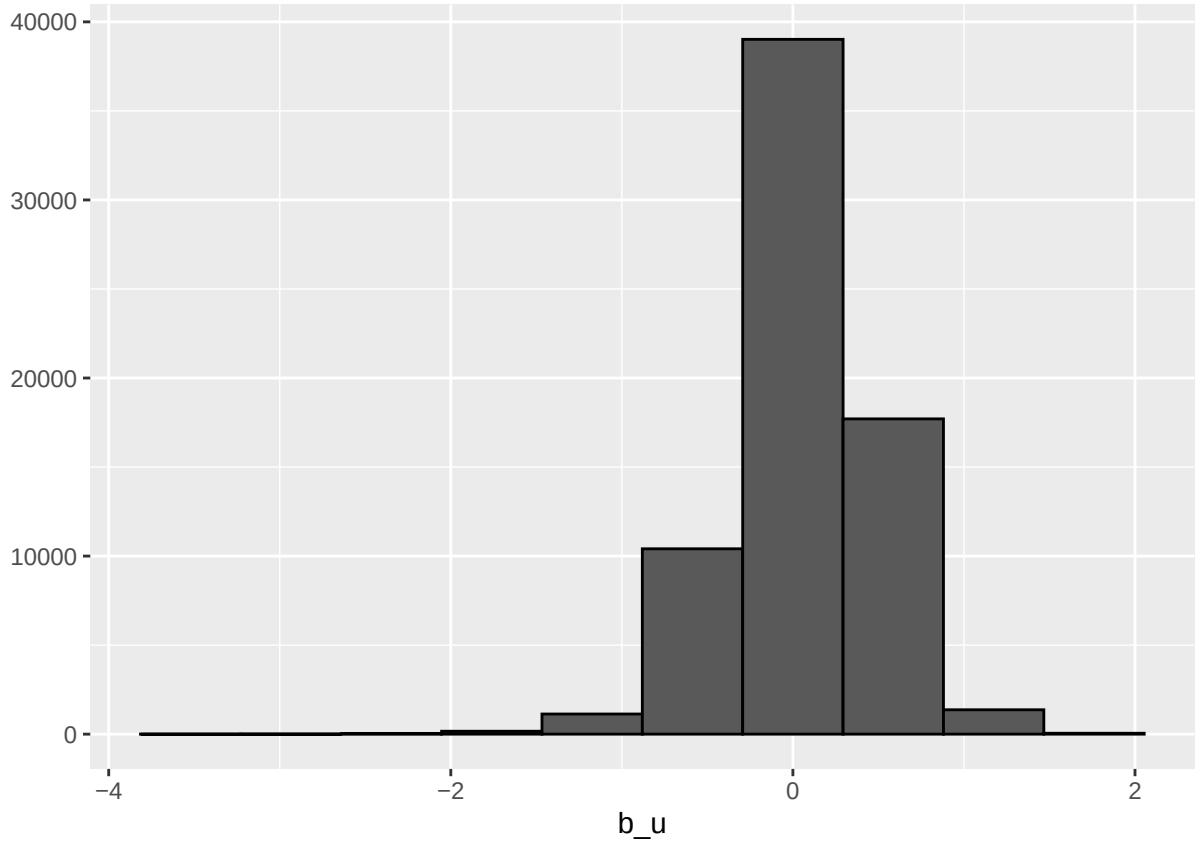
method	RMSE
Using Mean Rating	1.061202

2. Mean rating and movie effect :



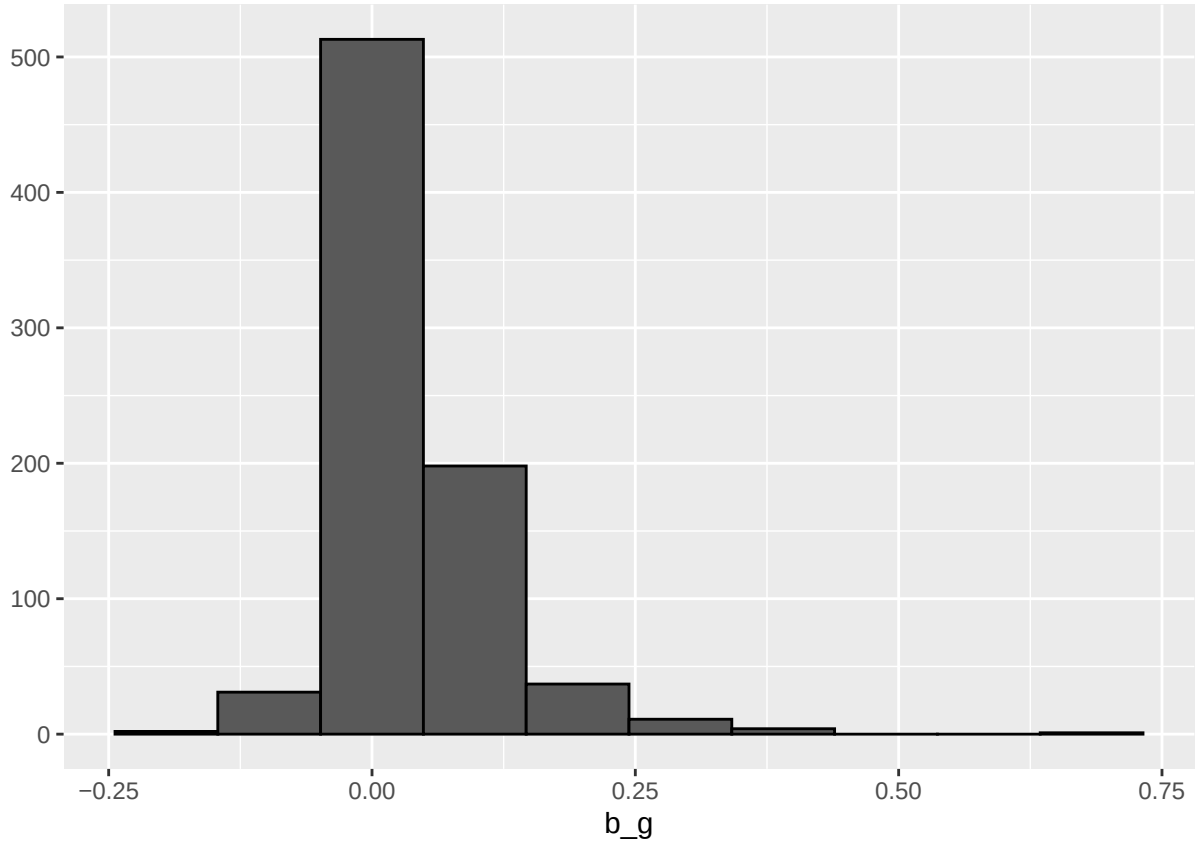
method	RMSE
Using Mean Rating	1.0612018
Movie Effect Model	0.9439087

3. User effect :



method	RMSE
Using Mean Rating	1.0612018
Movie Effect Model	0.9439087
Movie + User Effects Model	0.8653488

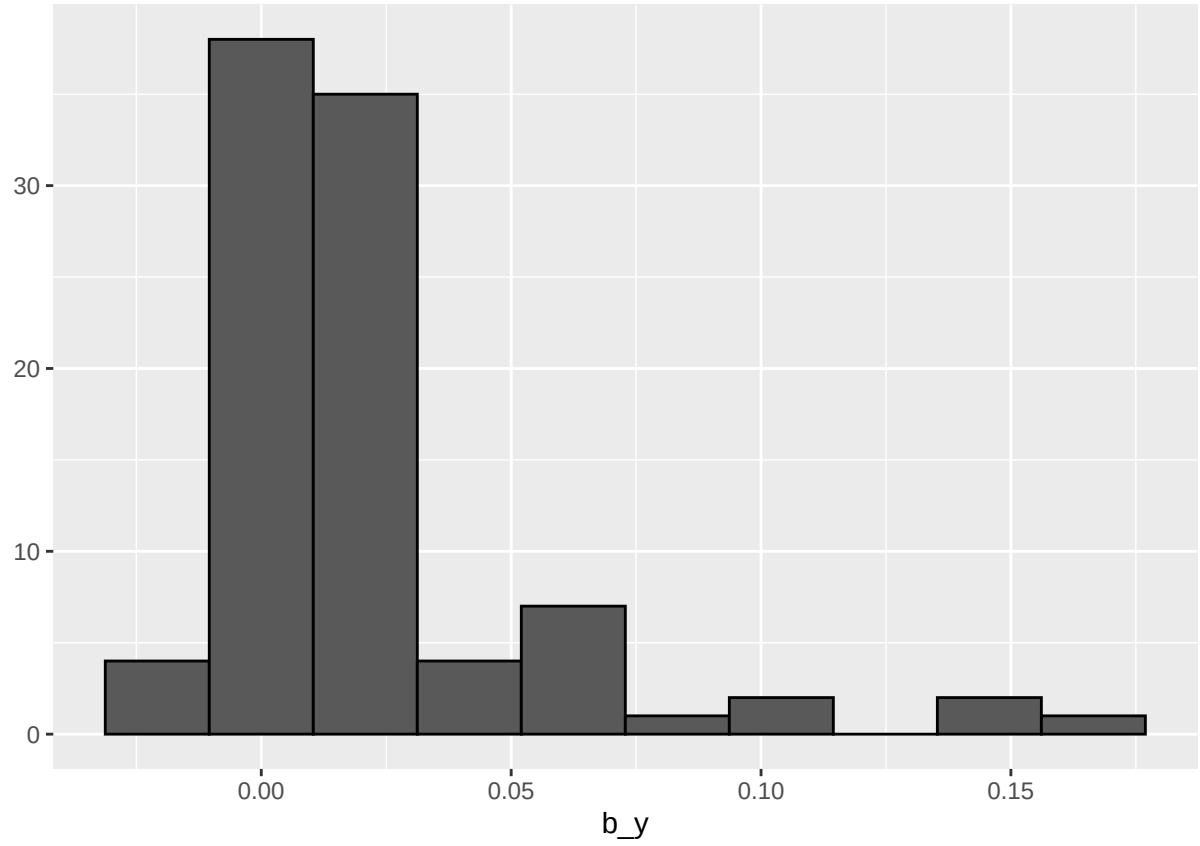
4. Genre effect



method	RMSE
Using Mean Rating	1.0612018
Movie Effect Model	0.9439087
Movie + User Effects Model	0.8653488
Movie + User + Genre Effects Model	0.8649469

5. movie year

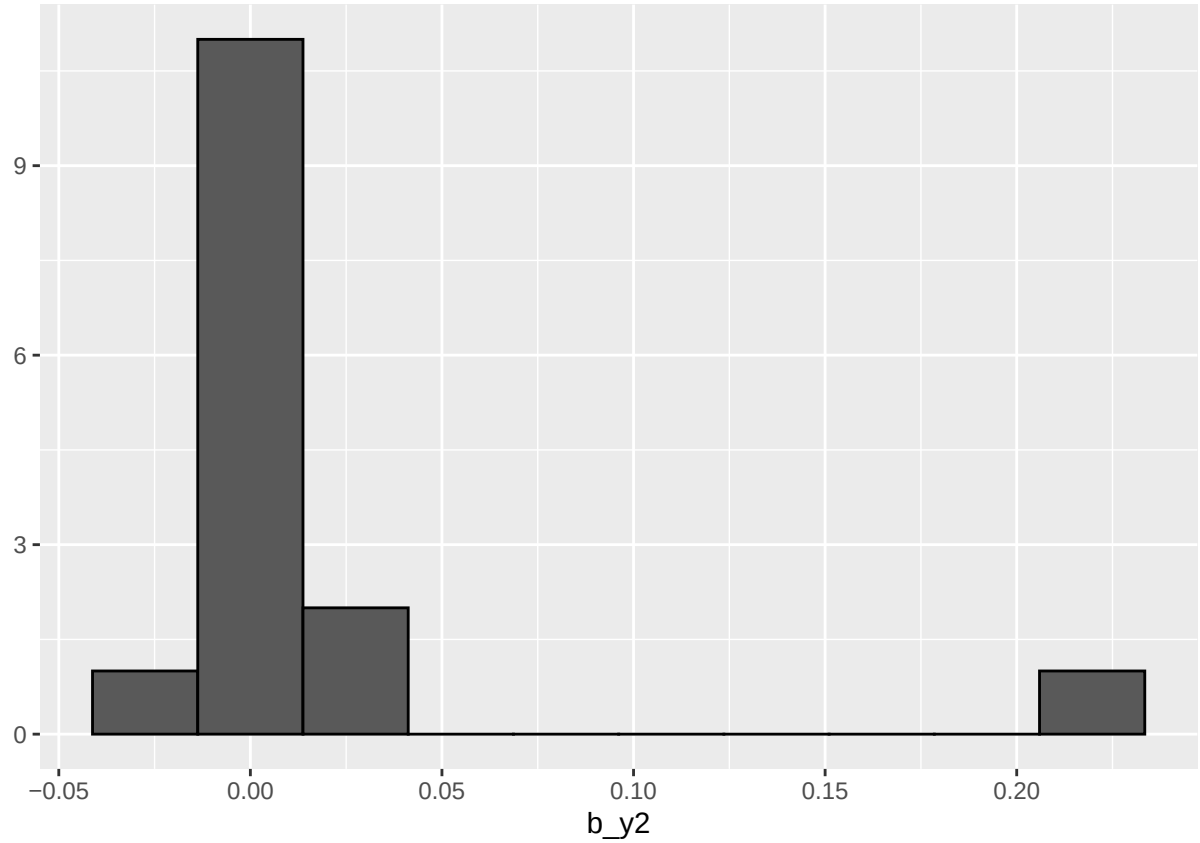
```
## [1] "movie year effect"
```



method	RMSE
Using Mean Rating	1.0612018
Movie Effect Model	0.9439087
Movie + User Effects Model	0.8653488
Movie + User + Genre Effects Model	0.8649469
Movie + User + Genre + Movie year Effects Model	0.8647606

6. rating year rating year average rating

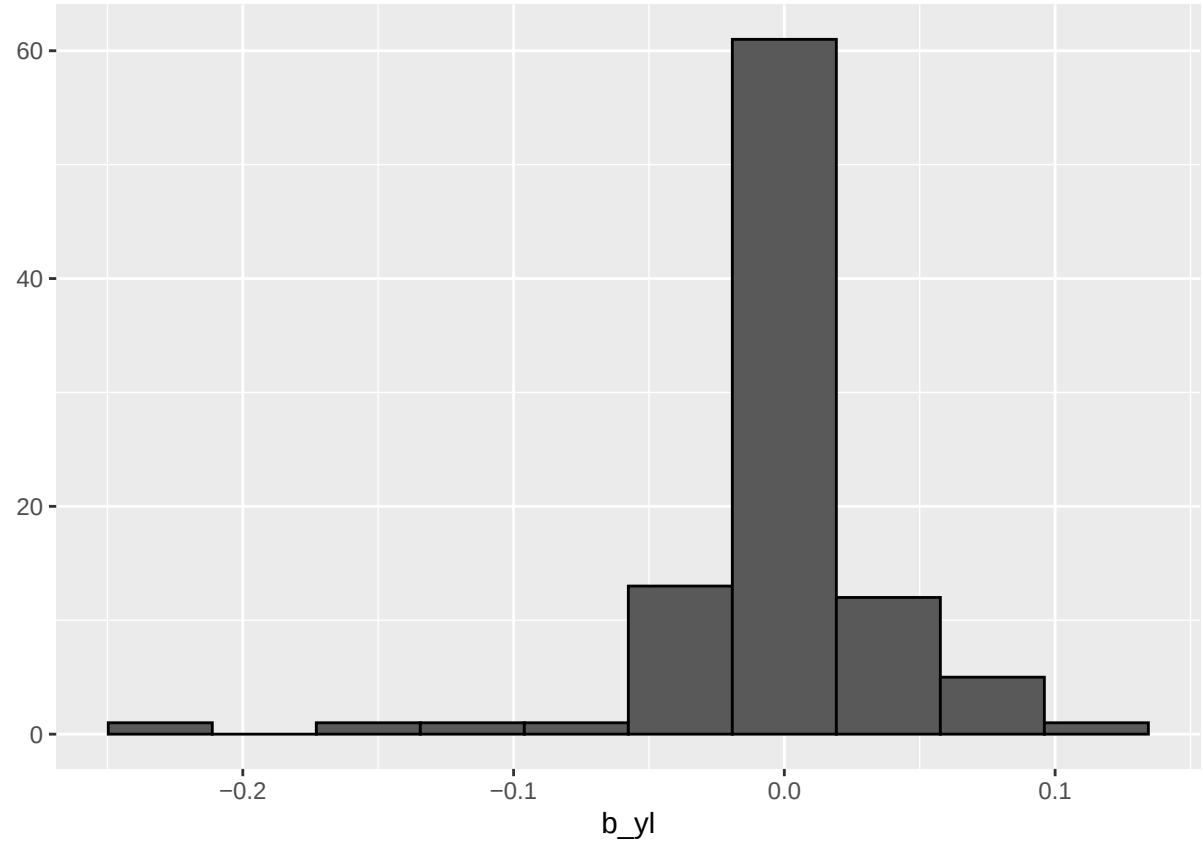
```
## [1] "rating year effect"
```



method	RMSE
Using Mean Rating	1.0612018
Movie Effect Model	0.9439087
Movie + User Effects Model	0.8653488
Movie + User + Genre Effects Model	0.8649469
Movie + User + Genre + Movie year Effects Model	0.8647606
Movie + User + Genre + Movie year + Rating year Effects Model	0.8646655

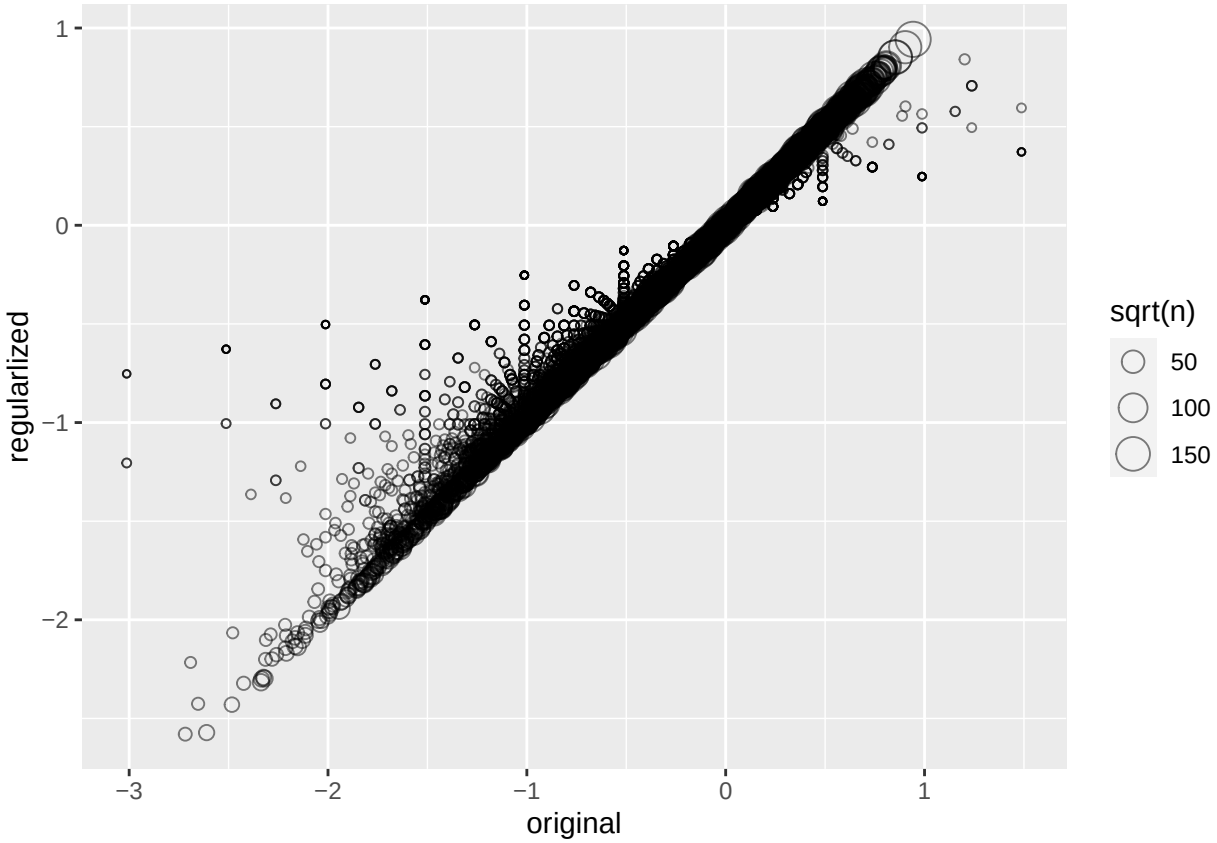
7. Yearlapsed effect

```
## [1] "Yearlapsed  effect"
```



method	RMSE
Using Mean Rating	1.0612018
Movie Effect Model	0.9439087
Movie + User Effects Model	0.8653488
Movie + User + Genre Effects Model	0.8649469
Movie + User + Genre + Movie year Effects Model	0.8647606
Movie + User + Genre + Movie year + Rating year Effects Model	0.8646655
Movie + User + Genres + Movie year + Rating year + Year lapsed Effects Model	0.8644061

8. Regularized Movie Effect




```
## Joining, by = "movieId"
```

b_i	n
0.9425650	28015
0.9027482	17747
0.8532702	21648
0.8509180	23193
0.8412744	7
0.8077428	11232
0.8058817	7935
0.8025903	2922
0.7981535	2967
0.7972415	2154

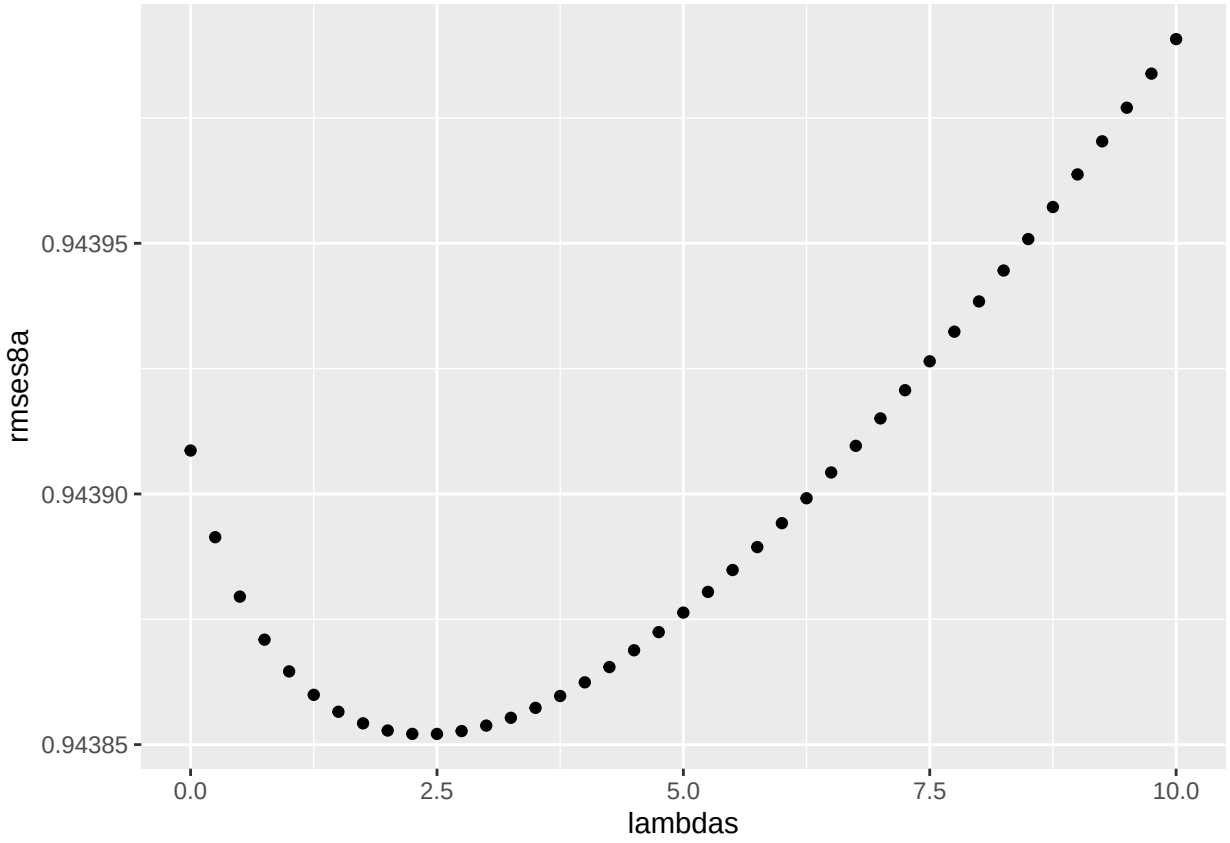
```
## Joining, by = "movieId"
```

b_i	n
-2.579628	5
-2.571686	17
-2.430055	19
-2.425683	8
-2.321798	11
-2.316449	41
-2.300088	31
-2.297157	39

b_i	n
-2.291909	26
-2.200377	6

method	RMSE
Using Mean Rating	1.0612018
Regularized Movie Effect Model	0.9438538

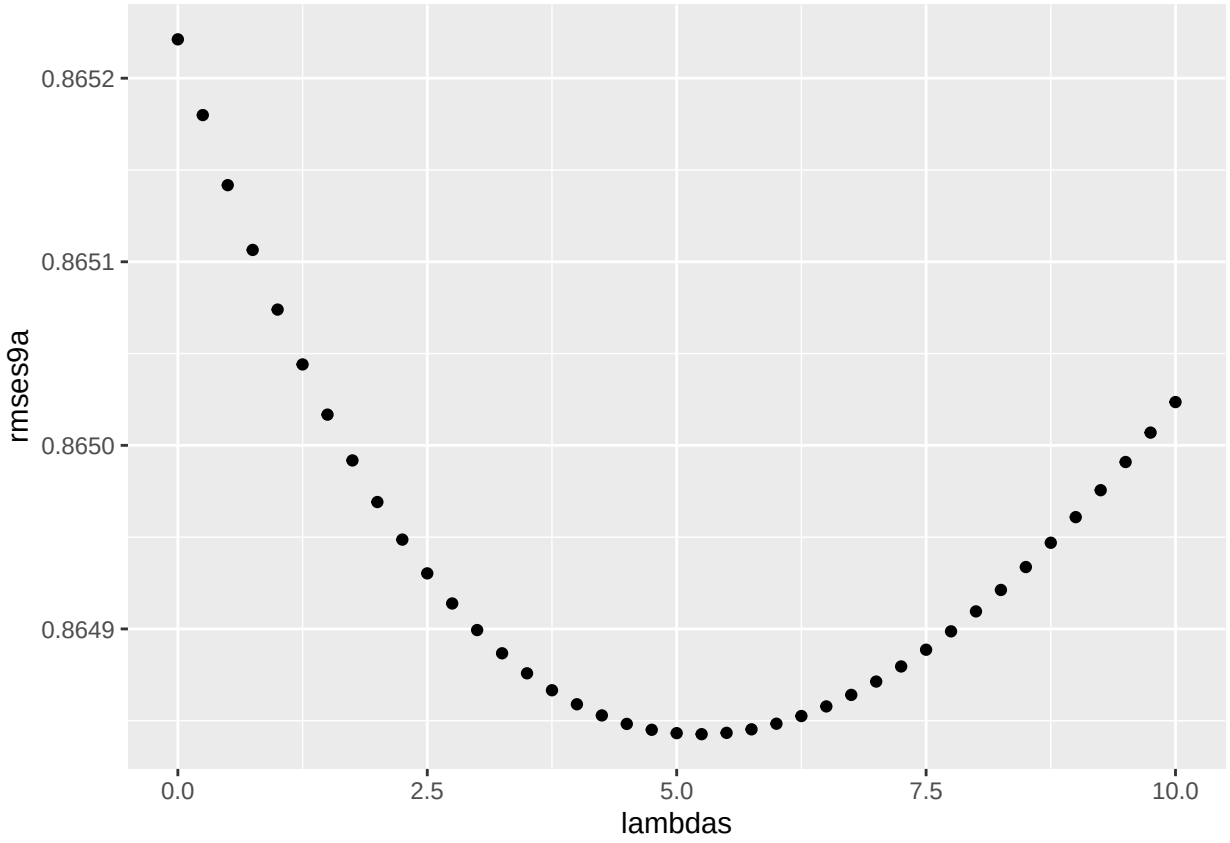
9. optimise lamdas for movie effect




```
## [1] 2.5
```

method	RMSE
Using Mean Rating	1.0612018
Regularized Movie Effect Model	0.9438521

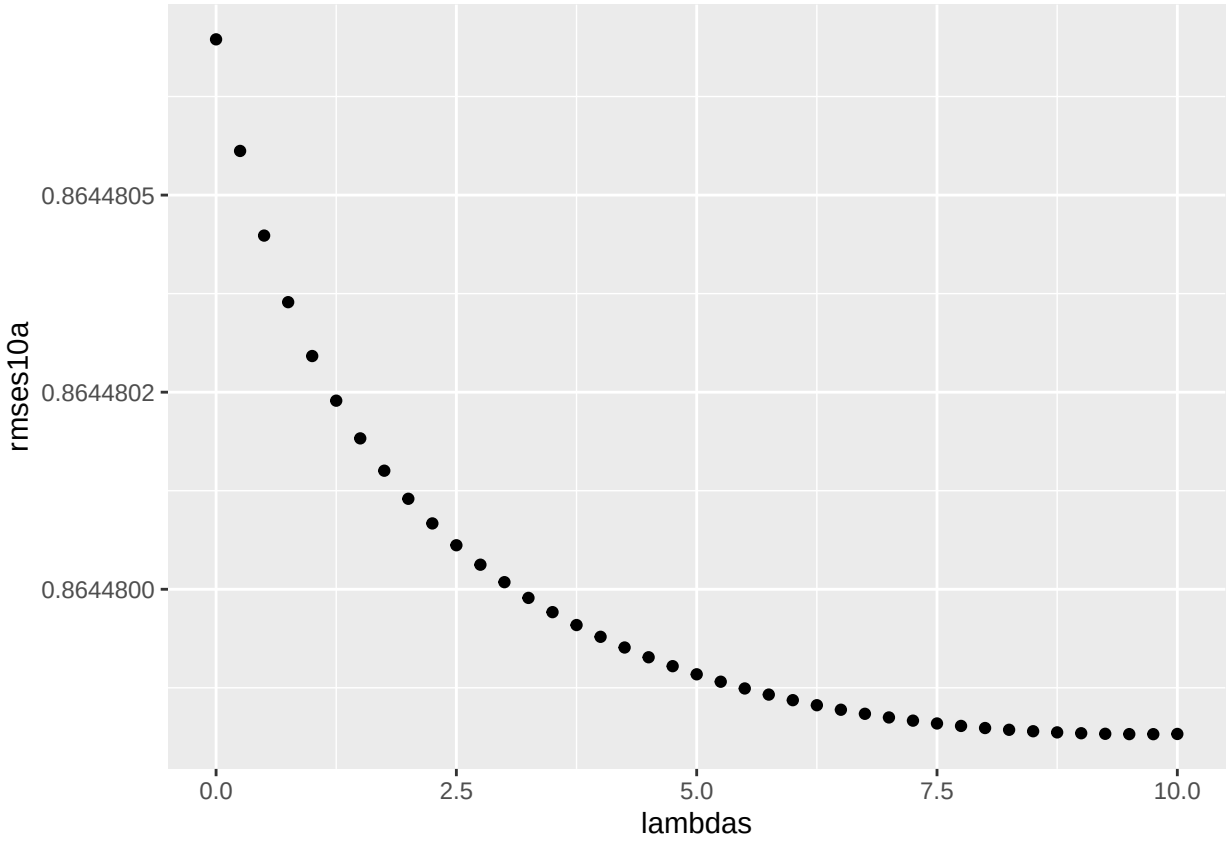
10. optimise lambdas for user effect




```
## [1] 5.25
```

method	RMSE
Using Mean Rating	1.0612018
Regularized Movie Effect Model	0.9438521
Regularized User Effect Model	0.8648427

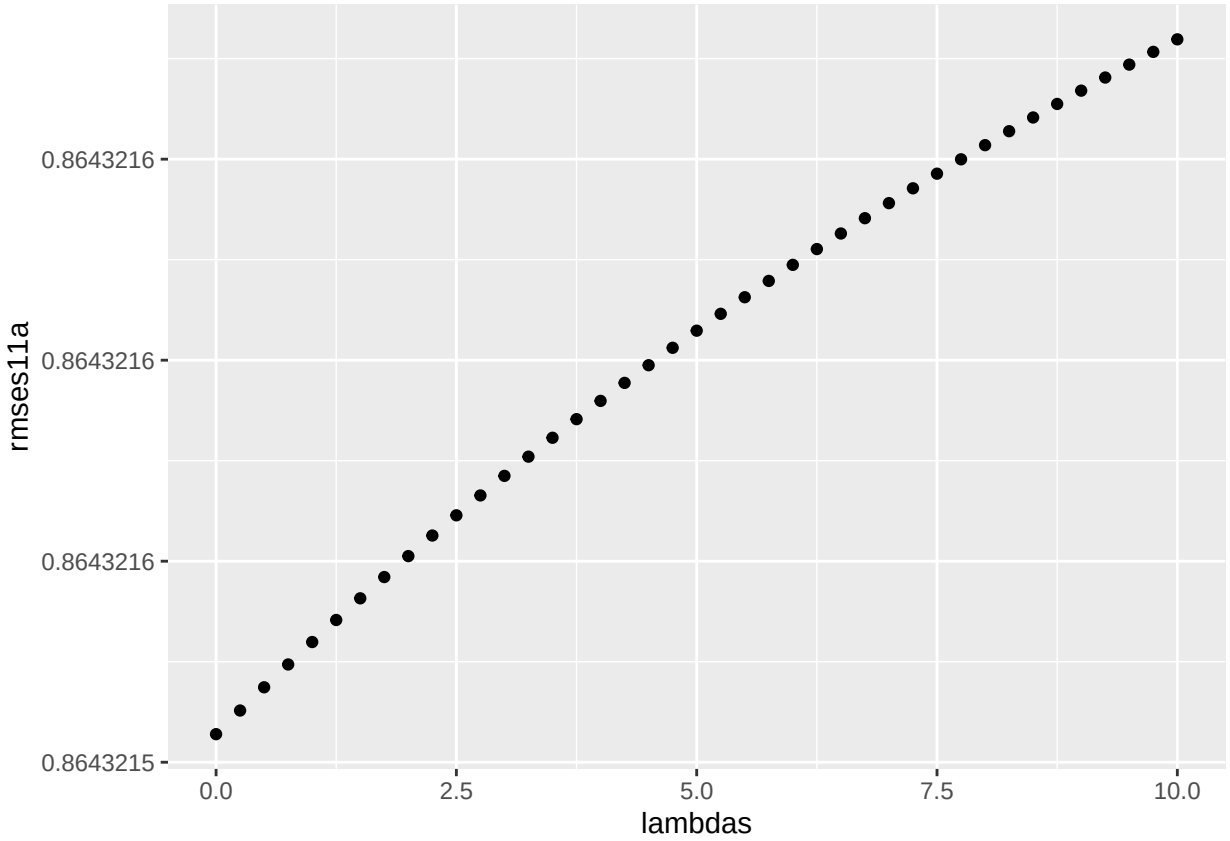
11. optimise lambdas for genres effect




```
## [1] 9.75
```

method	RMSE
Using Mean Rating	1.0612018
Regularized Movie Effect Model	0.9438521
Regularized User Effect Model	0.8648427
Regularized Genres Effect Model	0.8644798

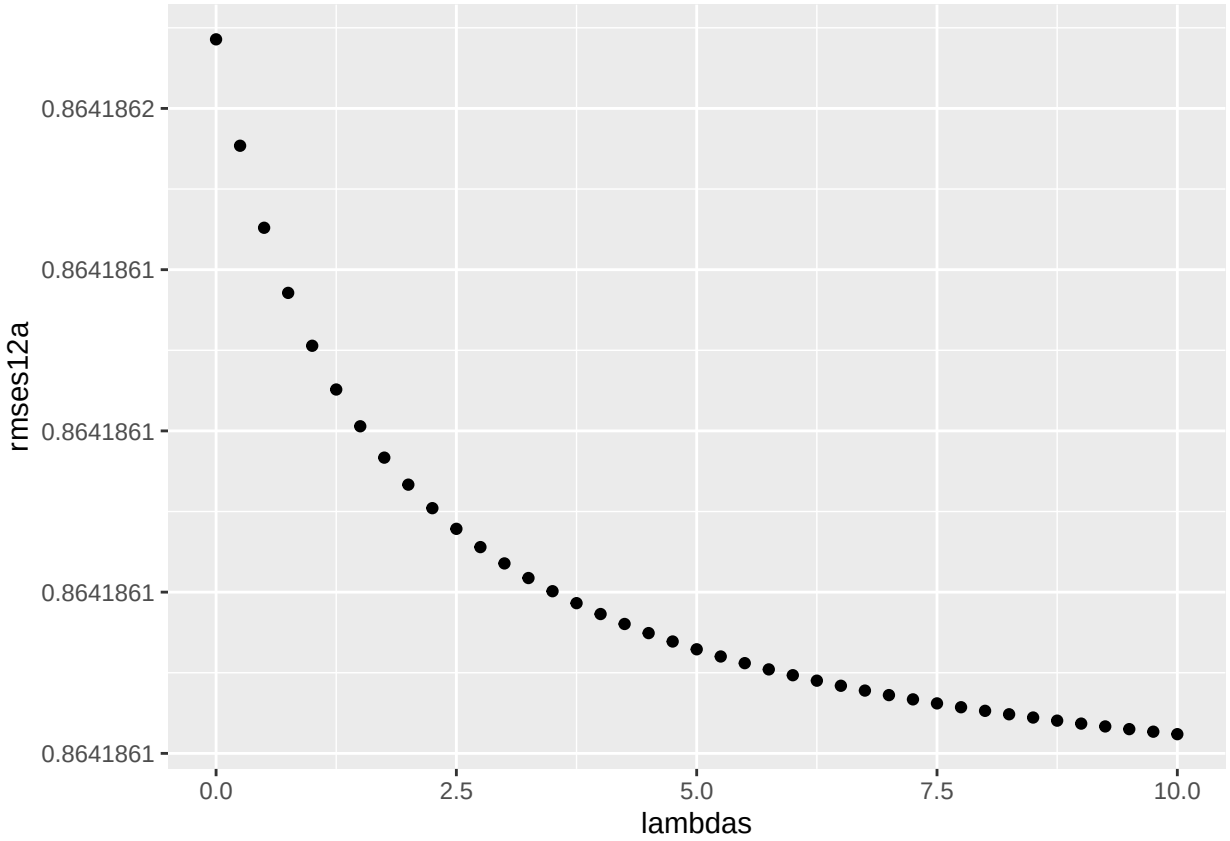
12. optimise lamdas for movie year effect




```
## [1] 0
```

method	RMSE
Using Mean Rating	1.0612018
Regularized Movie Effect Model	0.9438521
Regularized User Effect Model	0.8648427
Regularized Genres Effect Model	0.8644798
Regularized Movie Year Effect Model	0.8643215

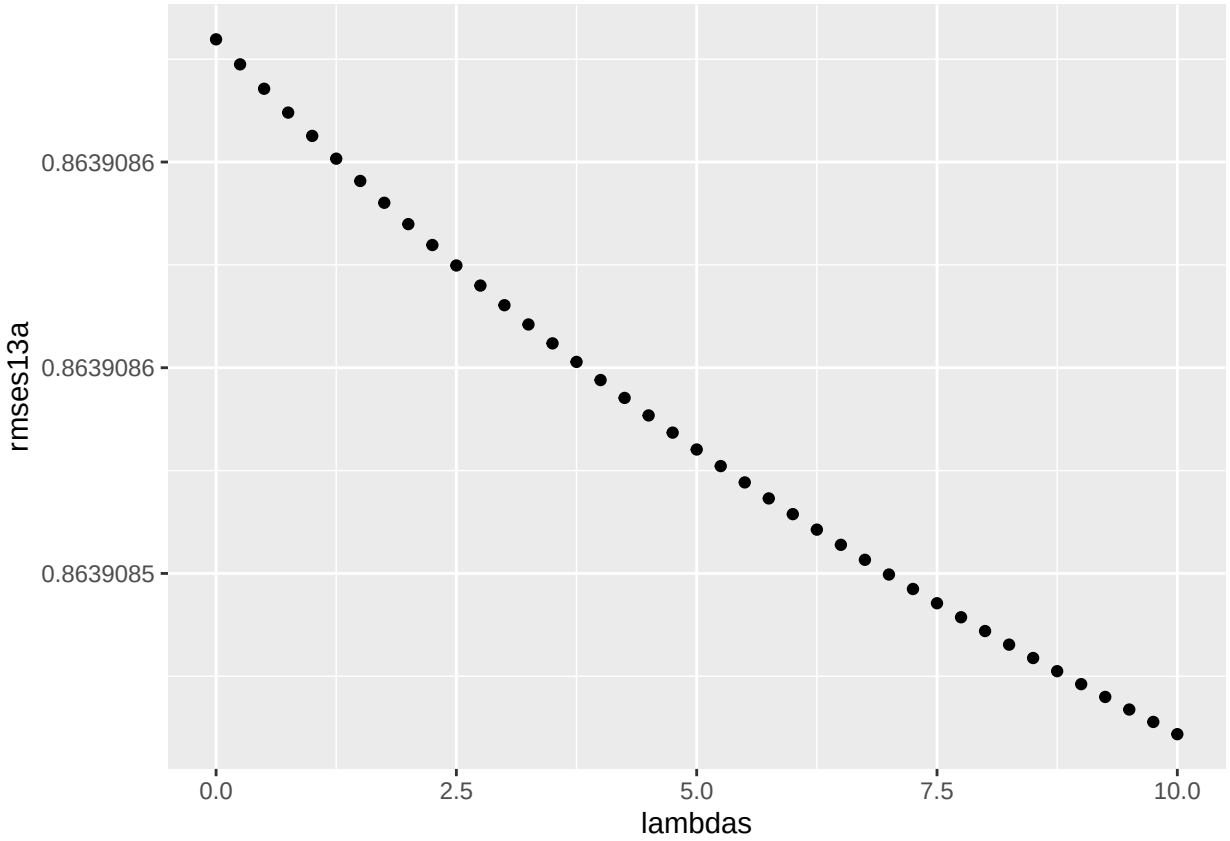
13. optimise lamdas for rating year effect




```
## [1] 10
```

method	RMSE
Using Mean Rating	1.0612018
Regularized Movie Effect Model	0.9438521
Regularized User Effect Model	0.8648427
Regularized Genres Effect Model	0.8644798
Regularized Movie Year Effect Model	0.8643215
Regularized Rating Year Effect Model	0.8641861

14. optimise lamdas for year lapsed effect




```
## [1] 10
```

method	RMSE
Using Mean Rating	1.0612018
Regularized Movie Effect Model	0.9438521
Regularized User Effect Model	0.8648427
Regularized Genres Effect Model	0.8644798
Regularized Movie Year Effect Model	0.8643215
Regularized Rating Year Effect Model	0.8641861
Regularized Year lapsd Effect Model	0.8639085

End of report