



University of Regina

ENEL/ENSE 865: Applied Machine Learning

Professor: Dr. Abdul Bais

Instructional Designer/TA: Dr. Muhammad Hamza Asad

Submitted by:

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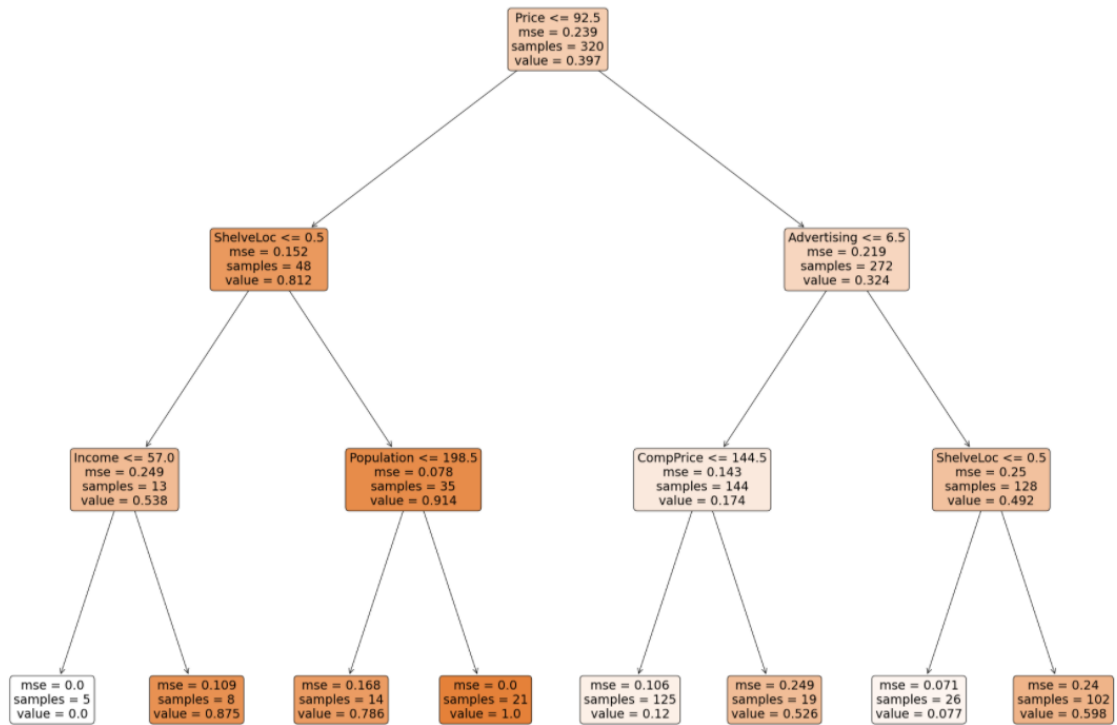
Student ID: 200441204

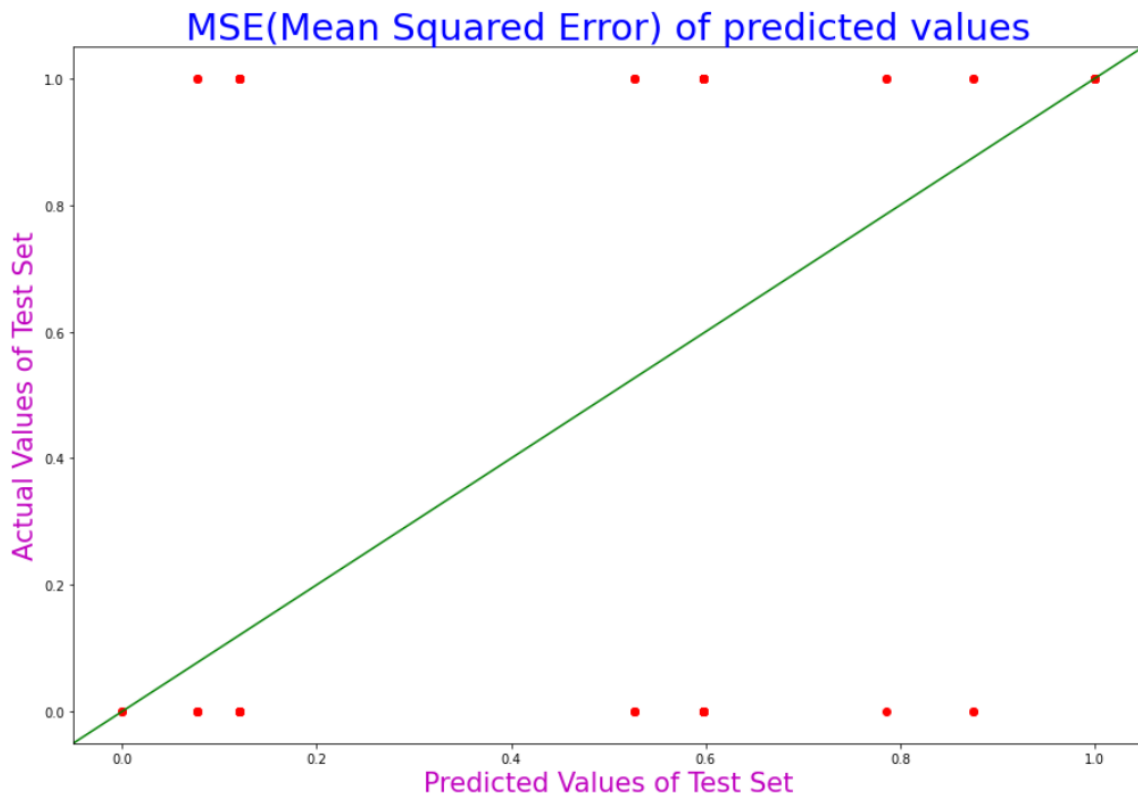
Programming Assignment: 04

Results:

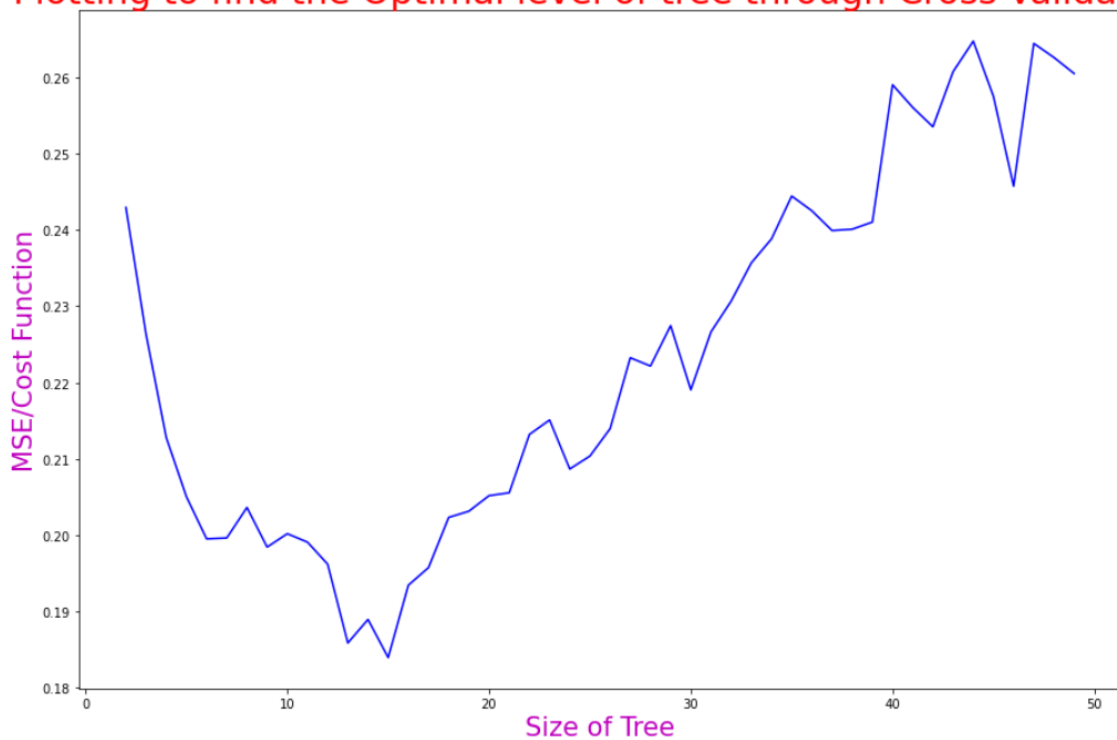
For max depth=3

Decision Regression Tree For Maximum Depth=3

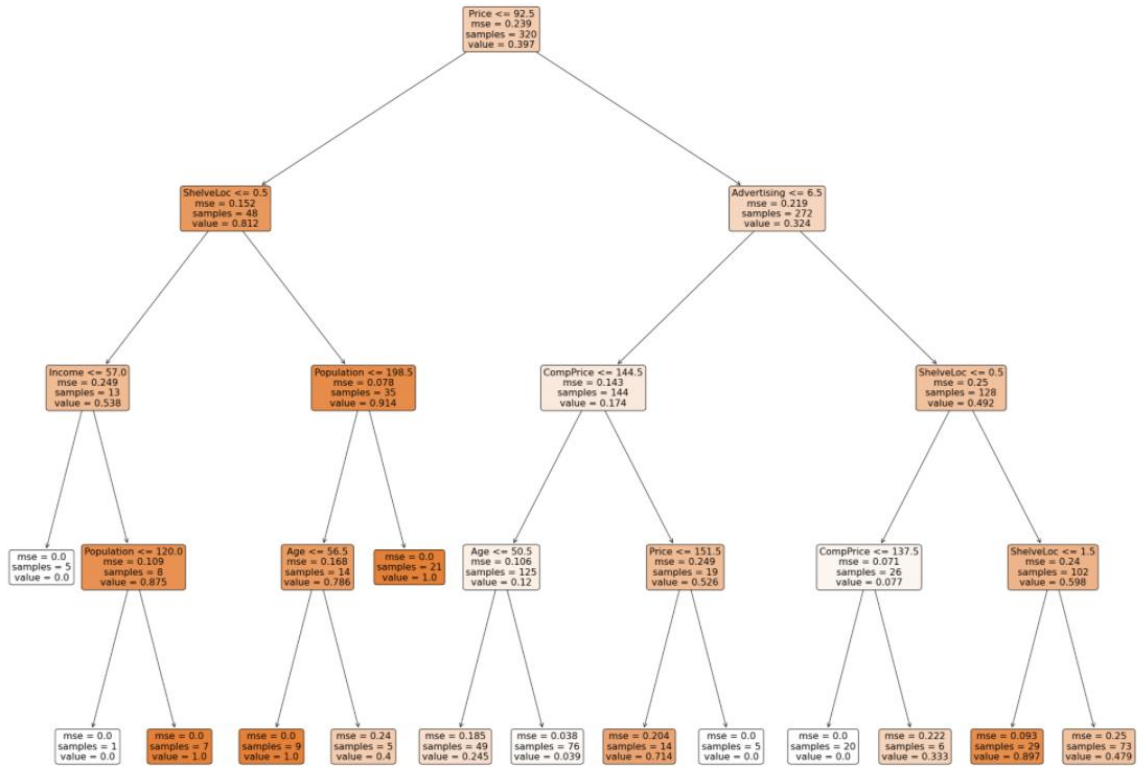


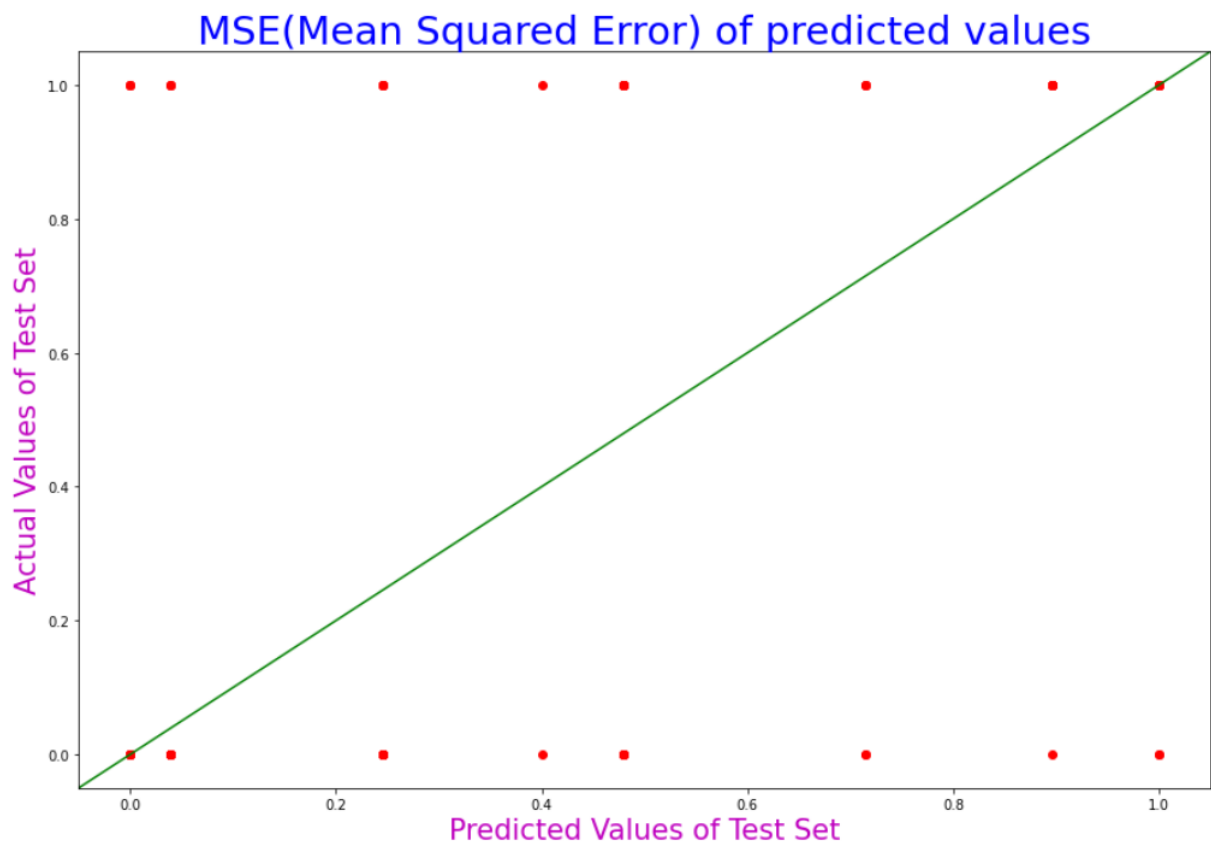


Plotting to find the Optimal level of tree through Cross-Validation

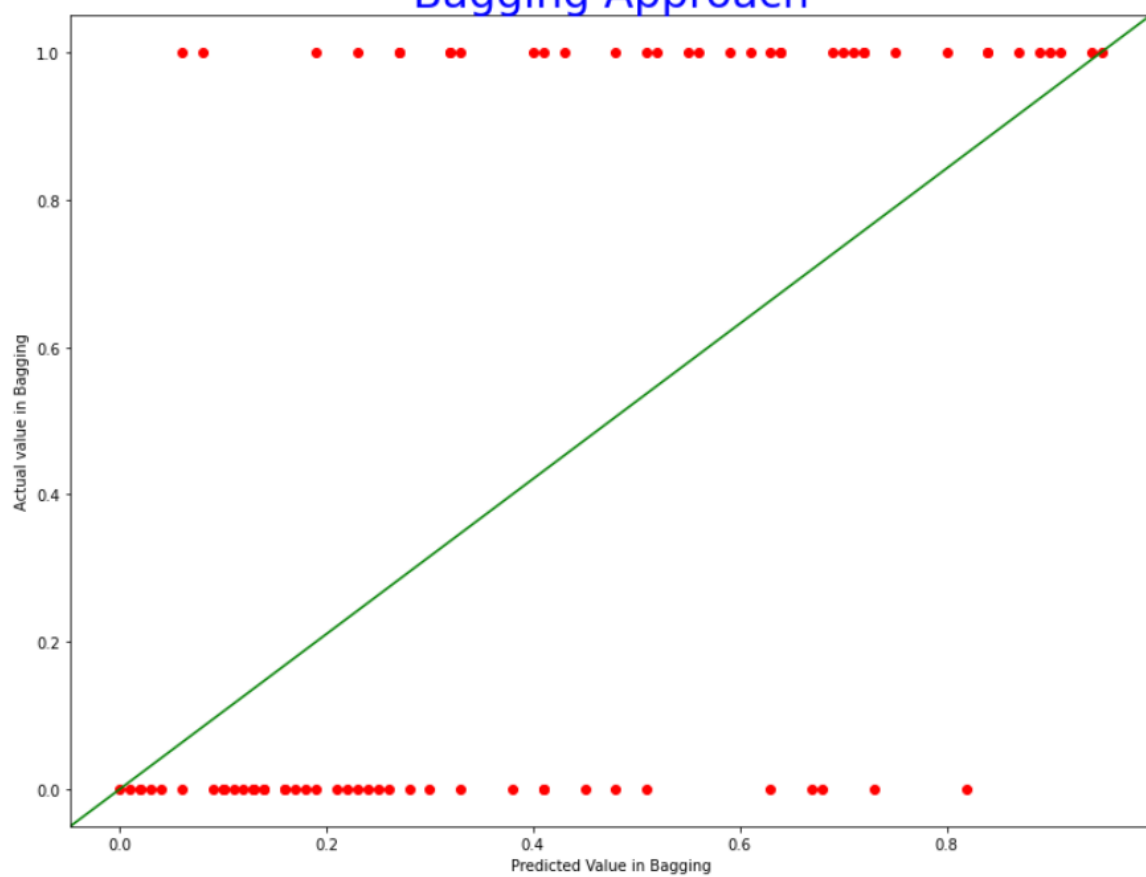


For max depth=4

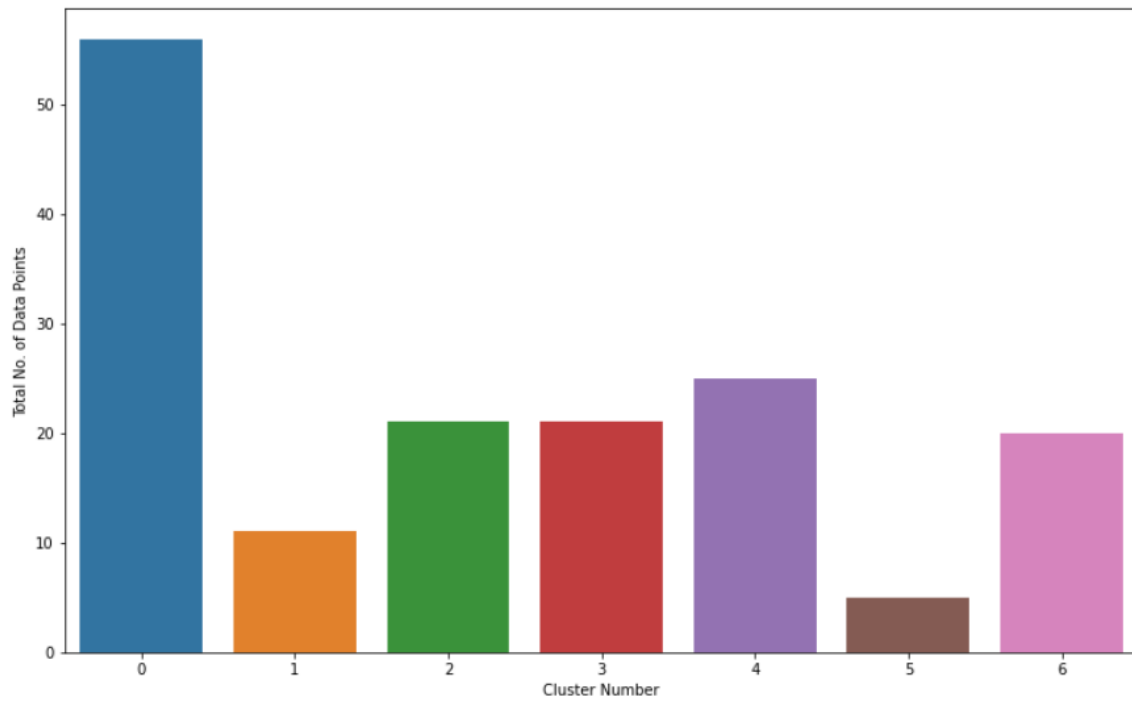
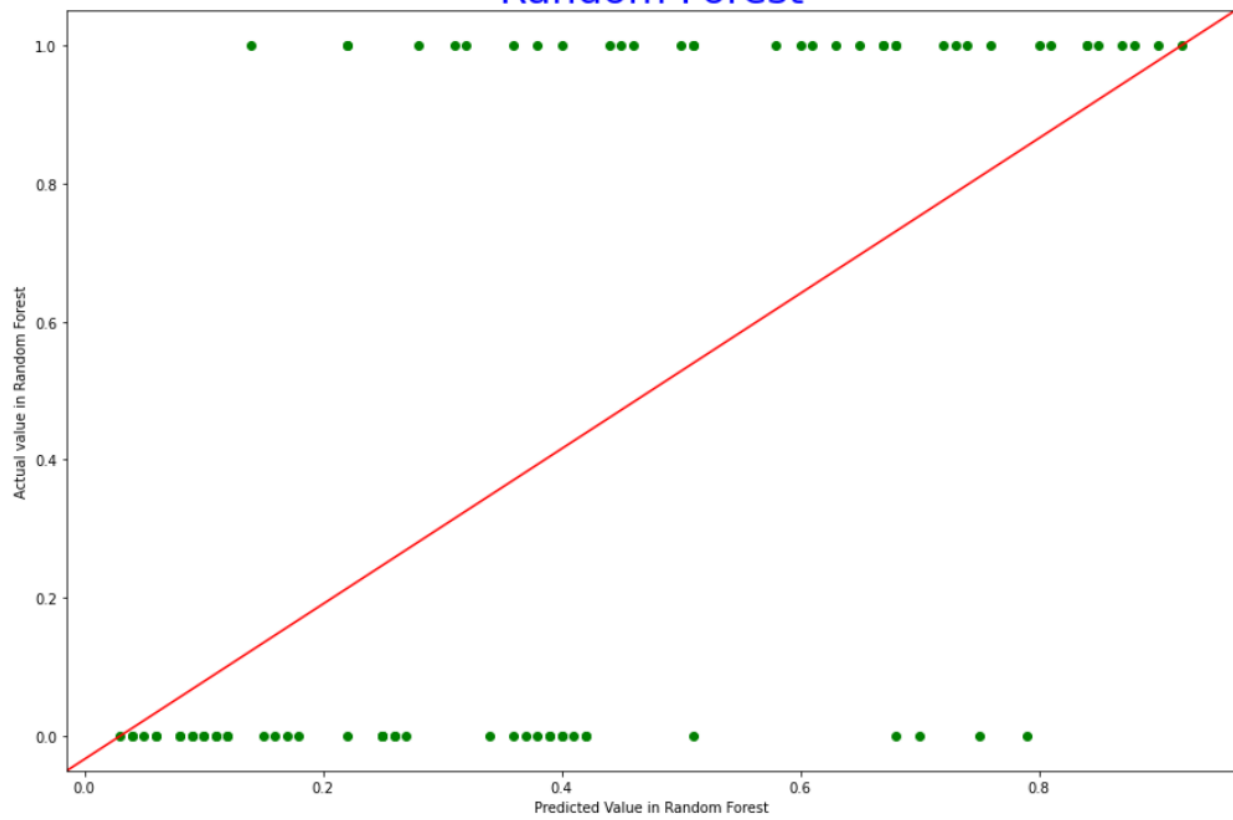


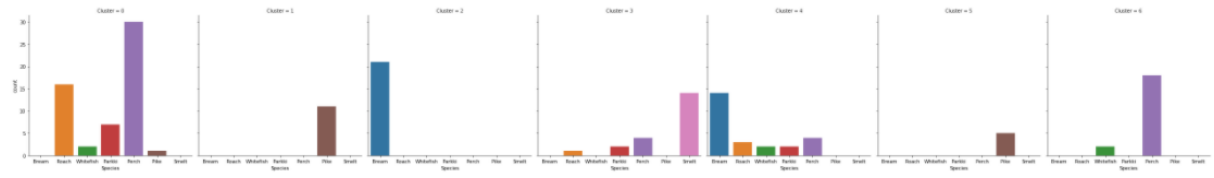


Bagging Approach



Random Forest





| Species | Bream | Parkki | Perch | Pike | Roach | Smelt | Whitefish |
|---------|-------|--------|-------|------|-------|-------|-----------|
| Cluster | | | | | | | |
| 0 | 0 | 7 | 30 | 1 | 16 | 0 | 2 |
| 1 | 0 | 0 | 0 | 11 | 0 | 0 | 0 |
| 2 | 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 2 | 4 | 0 | 1 | 14 | 0 |
| 4 | 14 | 2 | 4 | 0 | 3 | 0 | 2 |
| 5 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 18 | 0 | 0 | 0 | 2 |