Report for Assignment1

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| Dataset 1 | Gain(Entropy) | | Gain(Variance Impurity) | |
| (L,K) | Before pruning | After pruning | Before pruning | After pruning |
| (20,5) | 0.7555 | 0.7555 | 0.762 | 0.7695 |
| (30,20) | 0.7555 | 0.763 | 0.762 | 0.767 |
| (32,15) | 0.7555 | 0.771 | 0.762 | 0.7675 |
| (37,18) | 0.7555 | 0.7675 | 0.762 | 0.766 |
| (42,15) | 0.7555 | 0.7665 | 0.762 | 0.769 |
| (45,9) | 0.7555 | 0.7755 | 0.762 | 0.7665 |
| (44,18) | 0.7555 | 0.761 | 0.762 | 0.767 |
| (47,20) | 0.7555 | 0.7555 | 0.762 | 0.777 |
| (49,22) | 0.7555 | 0.7555 | 0.762 | 0.7665 |
| (50,12) | 0.7555 | 0.7645 | 0.762 | 0.766 |

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| Dataset 2 | Gain(Entropy) | | Gain(Variance Impurity) | |
| (L,K) | Before pruning | After pruning | Before pruning | After pruning |
| (28,12) | 0.7233 | 0.7267 | 0.725 | 0.7417 |
| (30,15) | 0.7233 | 0.7317 | 0.725 | 0.7567 |
| (33,26) | 0.7233 | 0.7317 | 0.725 | 0.7333 |
| (36,28) | 0.7233 | 0.7233 | 0.725 | 0.7483 |
| (40,27) | 0.7233 | 0.7283 | 0.725 | 0.7433 |
| (44,19) | 0.7233 | 0.73 | 0.725 | 0.745 |
| (45,18) | 0.7233 | 0.7383 | 0.725 | 0.7383 |
| (47,40) | 0.7233 | 0.7233 | 0.725 | 0.735 |
| (49,22) | 0.7233 | 0.7233 | 0.725 | 0.7267 |
| (50,32) | 0.7233 | 0.7416 | 0.725 | 0.725 |

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The report of accuracies on decision trees which are before pruning and post pruned has given below.