Linked List:

| **Code** | **Line Cost** | **# Times Executes** | **Total Cost** |
| --- | --- | --- | --- |
| Open the file | 1 | 1 | 1 |
| Create vector | 1 | 1 | 1 |
| Loop through each line of file | 1 | N | N |
| Split the line | 1 | N | N |
| Add course number to vector | 1 | N | N |
| Check if prereqs num in vector | 1 | N | N |
| If no errors add info into course object | 1 | N | N |
| Add course to linked list | 1 | N | N |
| **Total Cost** | | | 6n + 2 |
| **Runtime** | | | O(n) |

Hash Table:

| **Code** | **Line Cost** | **# Times Executes** | **Total Cost** |
| --- | --- | --- | --- |
| Open the file | 1 | 1 | 1 |
| Create vector | 1 | 1 | 1 |
| Loop through each line of file | 1 | N | N |
| Split the line | 1 | N | N |
| Add course number to vector | 1 | N | N |
| Check if prereqs num in vector | 1 | N | N |
| If no errors add info into course object | 1 | N | N |
| Add course to hash table | 1 | N | N |
| **Total Cost** | | | 6n + 2 |
| **Runtime** | | | O(n) |

Binary Tree:

| **Code** | **Line Cost** | **# Times Executes** | **Total Cost** |
| --- | --- | --- | --- |
| Open the file | 1 | 1 | 1 |
| Create vector | 1 | 1 | 1 |
| Loop through each line of file | 1 | N | N |
| Split the line | 1 | N | N |
| Add course number to vector | 1 | N | N |
| Check if prereqs num in vector | 1 | N | N |
| If no errors add info into course object | 1 | N | N |
| Add course to tree | 1 | Log N | Log N |
| **Total Cost** | | | Logn + 5n + 2 |
| **Runtime** | | | O(logn) |