Content Objective: Students will begin to work recursive concepts in Java.

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| **On the Tech Horizon (10pts.)**  **link to a tech/coding related article or journal no more than one month old (no blogs or reddit clones see below)** | |
| URL: |  |
| Reaction/Commentary: |  |

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| **Tech Terms and History (20pts.)**  **vocabulary from BJ p.587-628 (definition/commentary/significance in your words)** | |
| Describe the difference between loops and recursion | BJ p.590 |
| What prevents infinite recursion? | BJ p.592 |
| Strategy for tracing a recursive method in debugger. | BJ p.592-593 |
| What is “trace text” within a recursive method? | BJ p.599-600 |
| Describe the call stack. | Glossary and external sources |
| Describe a recursive helper method. | BJ p. 596-597 |
| Describe permutations of strings and how you would implement them. | BJ p.603-604 |
| Describe the “halt checker” and “killer” in the “Limits of Computation” article | BJ p.606 |
| Describe mutual recursion | BJ p.608 |
| Explain the strategy behind the use of “tokens” in recursion. | BJ p.609-610 |
| What is “backtracking”? | BJ p.614-615 |
| In the “towers of Hanoi” example, describe how the add method is kept out of an infinite recursion in the Tower class. | BJ resources: “worked example 2” |

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| **Code Snippets (30pts.)**  **only submit snippets or classes no full programs required (test and run in IDE, then copy/paste applicable code frag)** | |
| Self Check #2 |  |
| Write a recursive Fibonacci method |  |
| Self Check #13 |  |
| E13.3, E13.4, E13.5 |  |
| E13.8, E13.9 |  |
| E13.12, E13 |  |
| E13.19 |  |

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| **Code Challenge (30pts.)**  **full functioning application sent to Github** | |
| You may choose any one of the following code challenges: P13.2-P13.6 and post code to GitHub under Recursion. | |
| Notes: |  |

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| **Badge Progress (10pts.)**  **building your coding profile: Java coding training site to earn badges (recommended site** [**http://coderbyte.com**](http://coderbyte.com) **)** | |
| Screenshot/URL: |  |
| Notes/Issues: |  |

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| **Notes**  **your notes** | |
| Notes: |  |