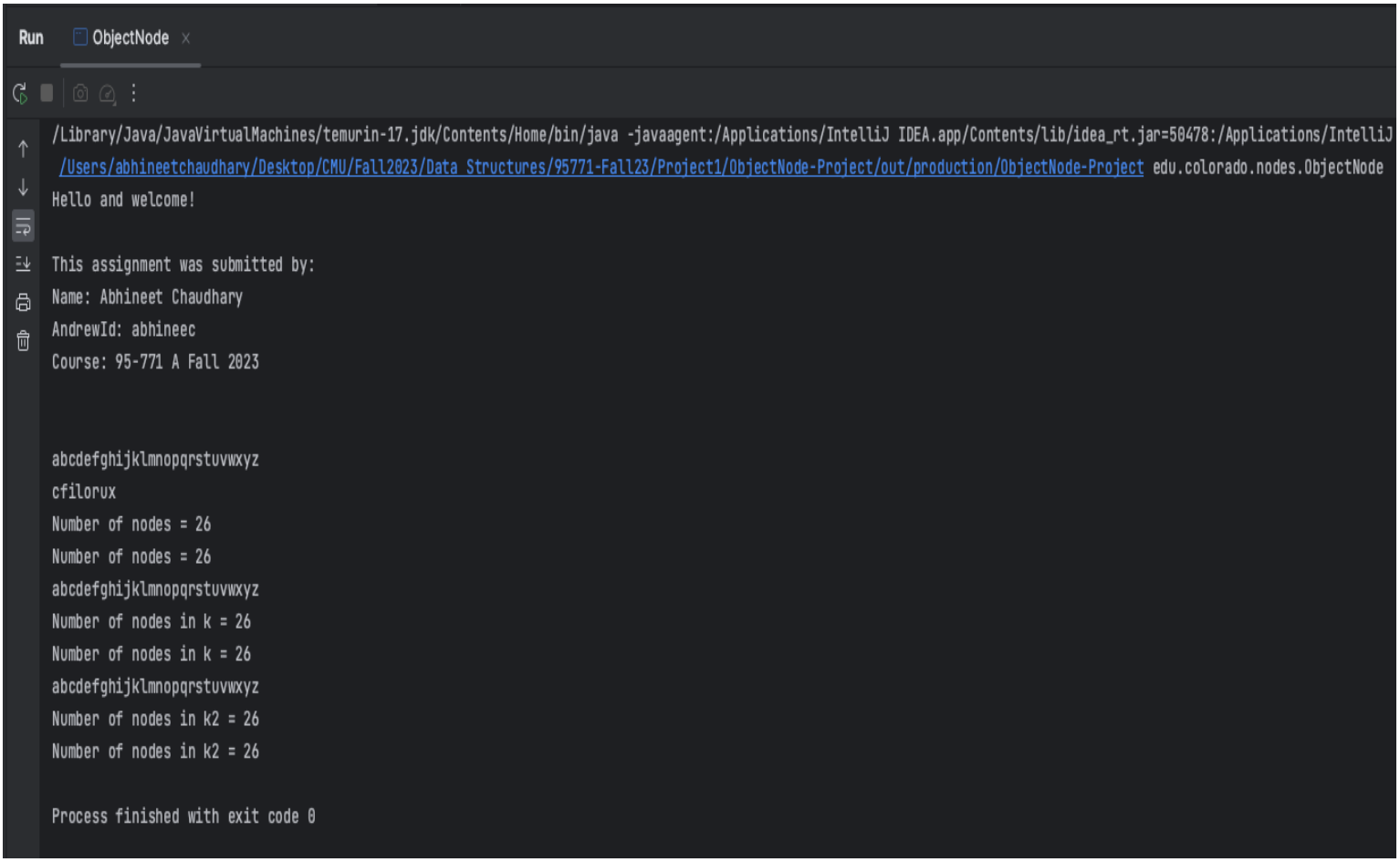
Data Structures & Algorithm for Information Processing
95-771 A
Prof. Michael Mccarthy
Fall 2023
Project 1

Submitted by:

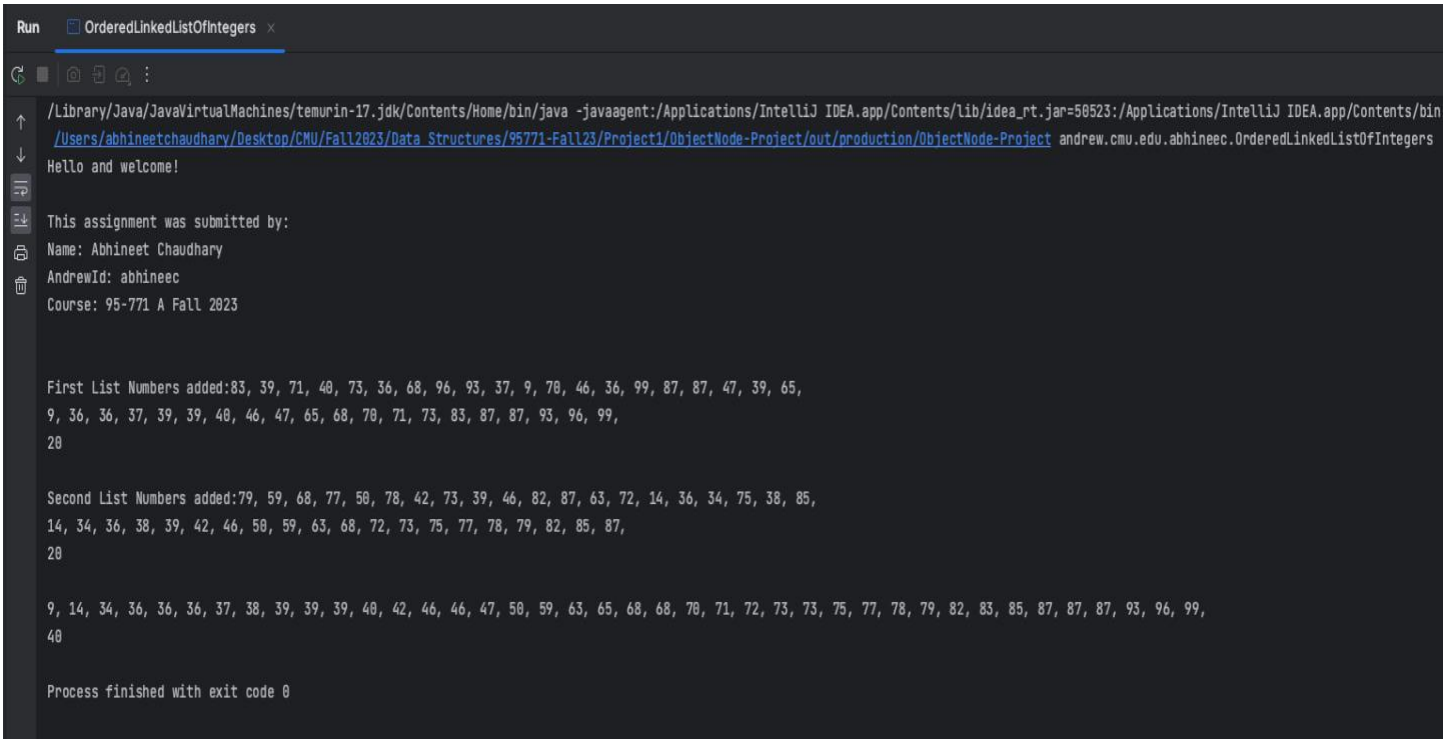
Abhineet Chaudhary
andrewID: abhineec

Part 1 (1 to 7)

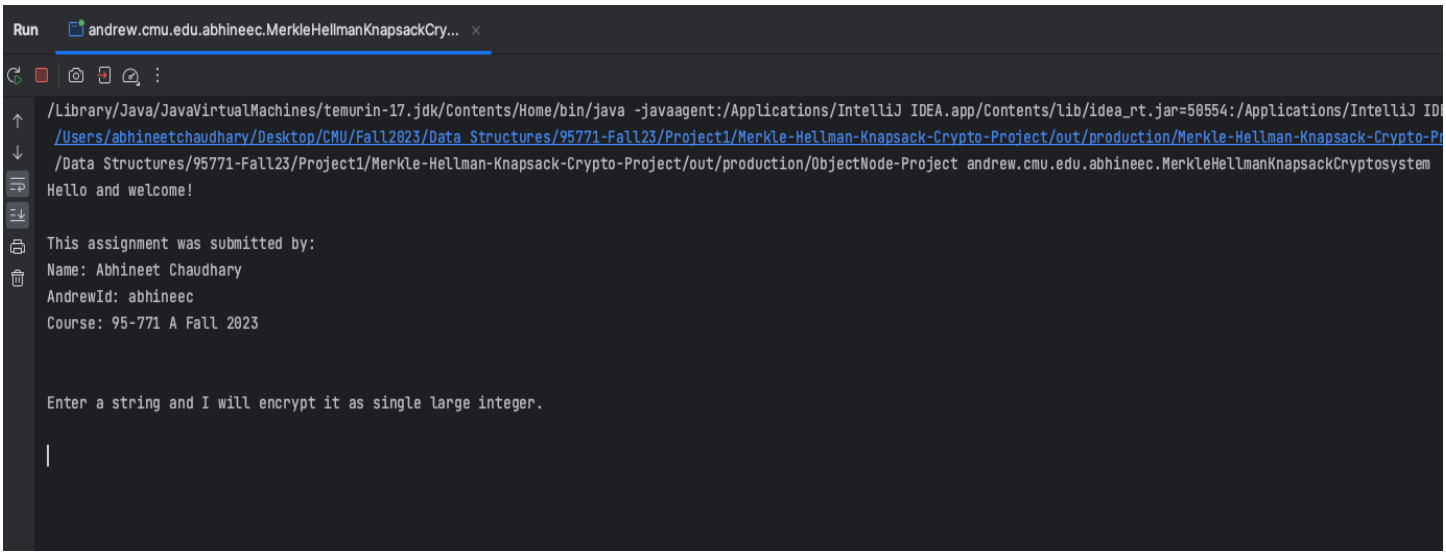


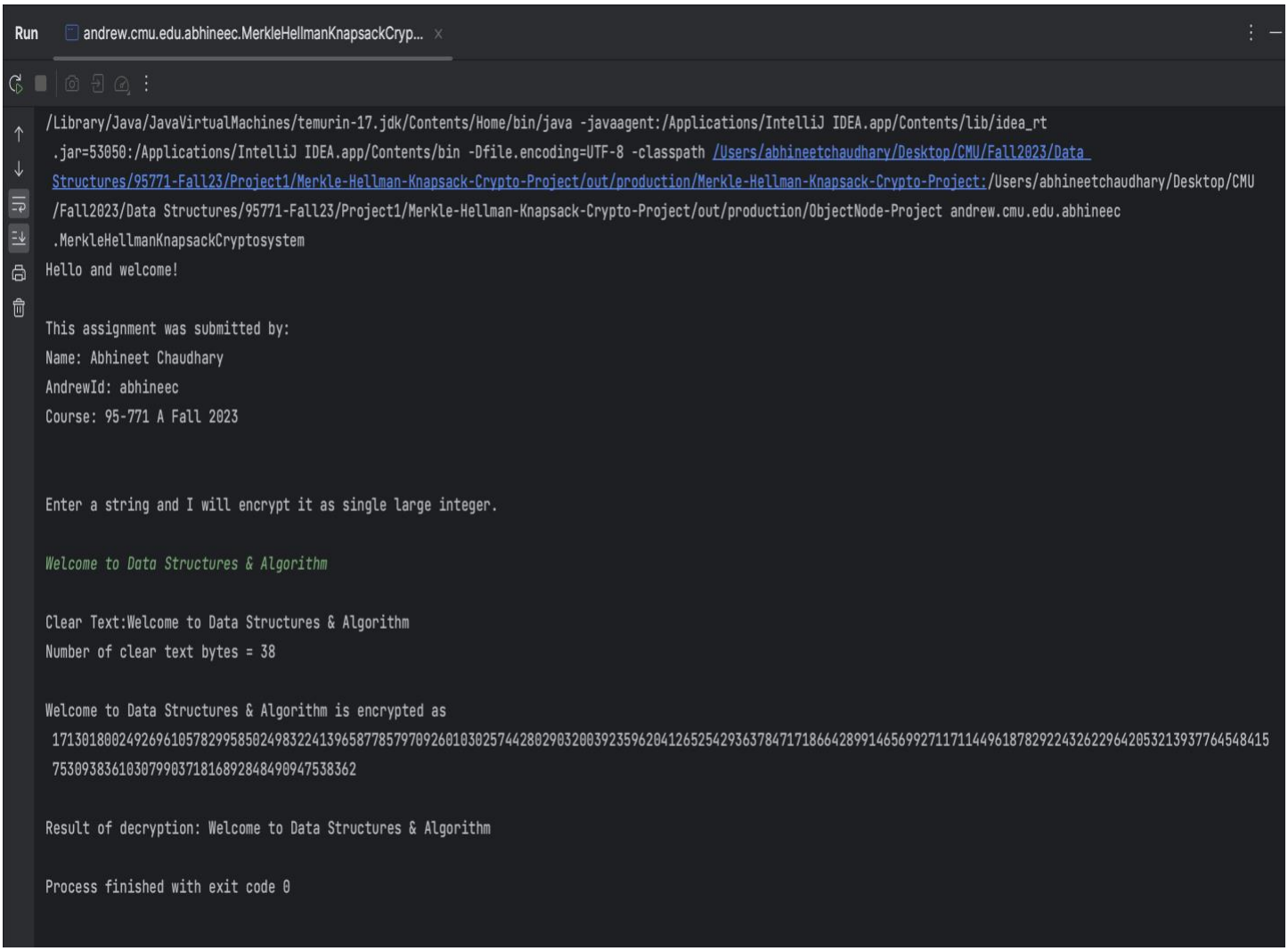
Part 1 (8 and 9)

Part 1 (10)

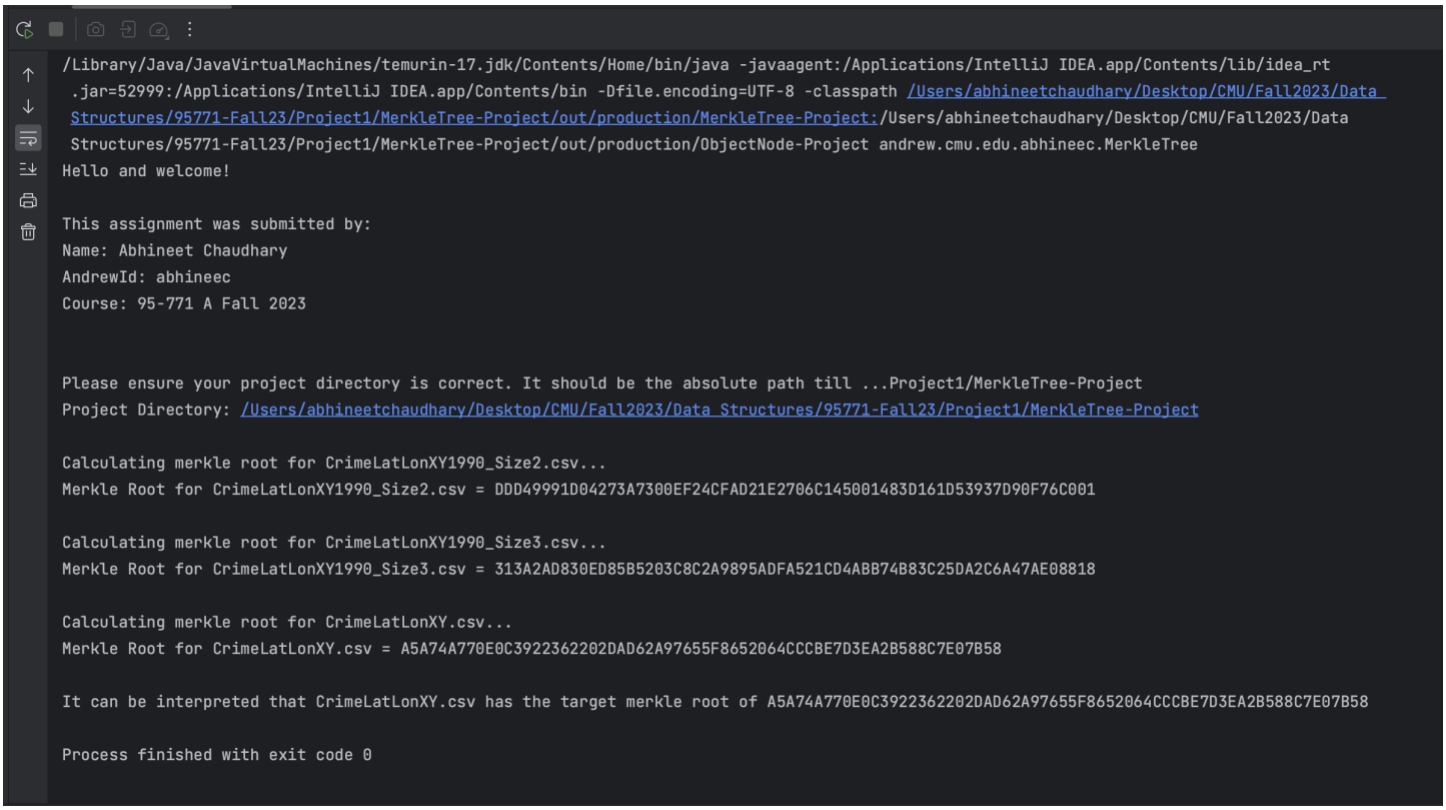


Part 2


Run
andrew.cmu.edu.abhineec.MerkleHellmanKnapsackCry...
/Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt.jar=50554:/Applications/IntelliJ ID
/Users/abhineetchaudhary/Desktop/CMU/Fall2023/Data Structures/95771-Fall23/Project1/Merkle-Hellman-Knapsack-Crypto-Project/out/production/Merkle-Hellman-Knapsack-Crypto-Pr
/Data Structures/95771-Fall23/Project1/Merkle-Hellman-Knapsack-Crypto-Project/out/production/ObjectNode-Project andrew.cmu.edu.abhineec.MerkleHellmanKnapsackCryptosystem
Hello and welcome!
This assignment was submitted by:
Name: Abhineet Chaudhary
AndrewId: abhineec
Course: 95-771 A Fall 2023
Enter a string and I will encrypt it as single large integer.


Run
andrew.cmu.edu.abhineec.MerkleHellmanKnapsackCryp...
/Library/Java/JavaVirtualMachines/temurin-17.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA.app/Contents/lib/idea_rt
.jar=53050:/Applications/IntelliJ IDEA.app/Contents/bin -Dfile.encoding=UTF-8 -classpath /Users/abhineetchaudhary/Desktop/CMU/Fall2023/Data
Structures/95771-Fall23/Project1/Merkle-Hellman-Knapsack-Crypto-Project/out/production/Merkle-Hellman-Knapsack-Crypto-Project:/Users/abhineetchaudhary/Desktop/CMU
/Fall2023/Data Structures/95771-Fall23/Project1/Merkle-Hellman-Knapsack-Crypto-Project/out/production/ObjectNode-Project andrew.cmu.edu.abhineec
.MerkleHellmanKnapsackCryptosystem
Hello and welcome!
This assignment was submitted by:
Name: Abhineet Chaudhary
AndrewId: abhineec
Course: 95-771 A Fall 2023
Enter a string and I will encrypt it as single large integer.
Welcome to Data Structures & Algorithm
Clear Text:Welcome to Data Structures & Algorithm
Number of clear text bytes = 38
Welcome to Data Structures & Algorithm is encrypted as
171301800249269610578299585024983224139658778579709260103025744280290320039235962041265254293637847171866428991465699271171144961878292243262296420532139377645484157530938361030799037181689284849094753836 2
Result of decryption: Welcome to Data Structures & Algorithm
Process finished with exit code 0

Part 3



References:

1. https://www.geeksforgeeks.org/java-math-random-method-examples/
    a. Used to generate random values for W and B lists in Part 2
2. https://stackoverflow.com/questions/31342689/how-do-i-use-classes-from-another-project-in-intellij-idea
    a. Used to add ObjectNode-Project as a dependency module in IntelliJ
3. https://www.geeksforgeeks.org/largest-number-less-than-or-equal-to-n-2-which-is-coprime-to-n/
    a. Derived my own solution based on the ideas discussed in this article
4. https://www.w3schools.com/java/
    a. To refer common java functions or syntax