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| Course Code: | DJ19CEL602 |
| Experiment No.: | 01-C |

**AIM: Perform Amortized Analysis of Multipop / Dynamic Tables / Binary Counter using**

**Aggregate, Accounting and Potential method. (Amortized Analysis)**

1C) Amortized Analysis (Potential method)

**CODE:**

def potential(n):

    size = 1

    total = 0

    dcost = 0

    icost = 0

    bank = 0

    phi = 0

    ci = 0

    phi\_prev = 0

    print("Elements\tDoubling Copying Cost\tInsertion Cost\tTotal Cost\t\tBank\t\tSize\t\tPhi\t\tCi")

    for i in range(1, n + 1):

        icost = 1

        if i > size:

            size \*= 2

            dcost = i - 1

        total = icost + dcost

        phi = 2 \* i - size

        ci = total + phi - phi\_prev

        bank += (3 - total)

        print(i, "\t\t\t\t", dcost, "\t\t", icost, "\t", total, "\t\t\t", bank, "\t\t", size, "\t\t", phi, "\t\t", ci)

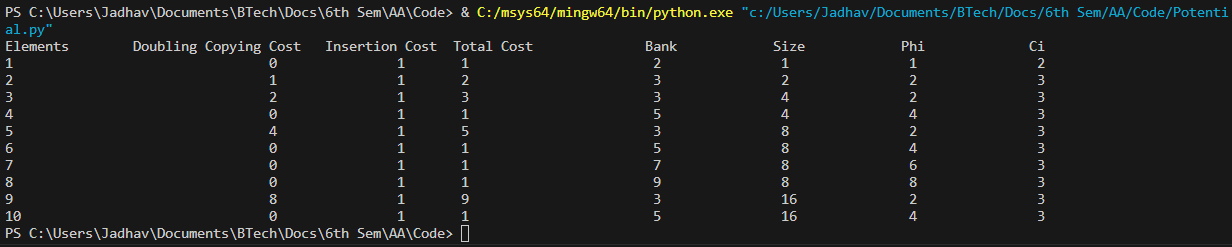
        icost = 0

        dcost = 0

        phi\_prev = phi

potential(10)

**OUTPUT:**

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**CONCLUSION:**  Hence we studied amortized analysis-Potential method.