# Bansilal Ramnath Agarwal Charitable Trust’s

Vishwakarma Institute of Technology, Pune-37

*(Anautonomous Institute of Savitribai Phule Pune University)*



**Department of Computer Engineering**

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**Bankers Algorithm Implementation Using C Program :**

#include <stdio.h>

int m, n, i, j, need[10][10], temp, z, y, p, k;

int al[5][3] = {{0, 1, 0}, {2, 0, 0}, {3, 0, 2}, {2, 1, 1}, {0, 0, 2}};

int max[10][10] = {{7, 5, 3}, {3, 2, 2}, {9, 0, 2}, {2, 2, 2}, {4, 3, 3}};

int av[10] = {3, 3, 2};

void main() {

printf("\n Enter no of processes : ");

scanf("%d", &m);

printf("\n Enter no of resources : ");

scanf("%d", &n);

// Calculate the need matrix

for (i = 0; i < m; i++) {

for (j = 0; j < n; j++) {

need[i][j] = max[i][j] - al[i][j];

}

}

// Print allocation values

printf("\nAlocation Values :\n");

for (i = 0; i < m; i++) {

for (j = 0; j < n; j++) {

printf("\t%d", al[i][j]);

}

printf("\n");

}

printf("\n\n");

// Print max values

printf("Max Values :\n");

for (i = 0; i < m; i++) {

for (j = 0; j < n; j++) {

printf("\t%d", max[i][j]);

}

printf("\n");

}

printf("\n\n");

// Print need values

printf("Need Values :\n");

for (i = 0; i < m; i++) {

for (j = 0; j < n; j++) {

printf("\t%d", need[i][j]);

}

printf("\n");

}

printf("\n Available Matrix : \n ");

for (k = 0; k < n; k++) {

printf("%d ", av[k]);

}

printf("\n");

p = 1;

y = 0;

while (p != 0) {

p = 0; // Resetting p

for (i = 0; i < m; i++) {

z = 0;

for (j = 0; j < n; j++) {

if (need[i][j] <= av[j]) {

z++;

}

}

if (z == n && need[i][0] != -1) {

printf("-> P%d ", i);

y++;

need[i][0] = -1;

for (k = 0; k < n; k++) {

av[k] += al[i][k];

printf("%d ", av[k]);

}

printf("\n");

p = 1; // Set p to 1 to indicate progress

}

}

}

if (y != m) {

printf("\nSystem is in unsafe state\n");

}

printf("\n");

}

OUTPUT:-



