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**SE(4A) | 19F-0916**

Operating System Lab

Banker’s algorithm

**TASK 01**

**A computer screen capture

Description automatically generated with low confidence**

**Cpp code:**

**#include <iostream>**

**using namespace std;**

**int main()**

**{**

**int processes, resources, i, j, k;**

**processes = 5;**

**resources = 3;**

**int Allocation[5][3] = { { 0, 1, 0 },**

**{ 2, 0, 0 },**

**{ 3, 0, 2 },**

**{ 2, 1, 1 },**

**{ 0, 0, 2 } };**

**int Max\_Resources[5][3] = { { 7, 5, 3 },**

**{ 3, 2, 2 },**

**{ 9, 0, 2 },**

**{ 2, 2, 2 },**

**{ 4, 3, 3 } };**

**int Available\_Resources[3] = { 3, 3, 2 };**

**int f[processes], ans[processes], ind = 0;**

**for (k = 0; k < processes; k++) {**

**f[k] = 0;**

**}**

**int need[processes][resources];**

**for (i = 0; i < processes; i++) {**

**for (j = 0; j < resources; j++)**

**need[i][j] = Max\_Resources[i][j] - Allocation[i][j];**

**}**

**int y = 0;**

**for (k = 0; k < 5; k++) {**

**for (i = 0; i < processes; i++) {**

**if (f[i] == 0) {**

**int flag = 0;**

**for (j = 0; j < resources; j++) {**

**if (need[i][j] > Available\_Resources[j]){**

**flag = 1;**

**break;**

**}**

**}**

**if (flag == 0) {**

**ans[ind++] = i;**

**for (y = 0; y < resources; y++)**

**Available\_Resources[y] += Allocation[i][y];**

**f[i] = 1;**

**}**

**}**

**}**

**}**

**cout << "Following is the SAFE Sequence" << endl;**

**for (i = 0; i < processes - 1; i++)**

**cout << " P" << ans[i] << " ->";**

**cout << " P" << ans[processes - 1] <<endl;**

**return (0);**

**}**