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DT-22032

Operating System (CT-353)

Lab no 09

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DT-22032

Implement the above code and paste the screen shot of the output.

CODE:

```
#include <stdio.h>


int main() {
    int p[10], np, b[10], nb, ch;
    int c[10], d[10], alloc[10], flag[10];
    int i, j;
    printf("\nEnter the number of processes: ");
    scanf("%d", &np);
    printf("Enter the number of blocks: ");
    scanf("%d", &nb);
    printf("Enter the size of each process:\n");
    for (i = 0; i < np; i++) {
        printf("Process %d: ", i);
        scanf("%d", &p[i]);
    }
    printf("Enter the block sizes:\n");
    for (j = 0; j < nb; j++) {
        printf("Block %d: ", j);
        scanf("%d", &b[j]);

        c[j] = b[j];

        d[j] = b[j];

    }

    if (np <= nb) {

        printf("\n1. First Fit\n2. Best Fit\n3. Worst Fit");

        do {

            printf("\nEnter your choice: ");

            scanf("%d", &ch);

            switch (ch) {

                case 1:

                    printf("\nFirst Fit\n");

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

                        flag[i] = 1;

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

                            if (p[i] <= b[j]) {

                                alloc[j] = p[i];

                                printf("\nProcess %d of size %d is allocated in block
%d of size %d", i, p[i], j, b[j]);

                                flag[i] = 0;

                                b[j] = 0;

                                break;
                            }
                        }
                    }
                    for (i = 0; i < np; i++) {
                        if (flag[i] != 0)
                            printf("\nProcess %d of size %d is not allocated", i, p[i]);
                    }
                    break;

                case 2:
                    printf("\nBest Fit\n");
                    for (i = 0; i < nb; i++) {
                        for (j = i + 1; j < nb; j++) {
                            if (c[i] > c[j]) {
                                int temp = c[i];
                                c[i] = c[j];
                                c[j] = temp;
                            }
                        }
                    }
                    printf("\nAfter sorting block sizes:\n");
                    for (i = 0; i < nb; i++)
```

```
                printf("Block %d: %d\n", i, c[i]);

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

                flag[i] = 1;

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

                    if (p[i] <= c[j]) {

                        alloc[j] = p[i];

                        printf("\nProcess %d of size %d is allocated in block %d of size %d", i, p[i], j, c[j]);

                        flag[i] = 0;

                        c[j] = 0;

                        break;

                    }

                }

            }

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

                if (flag[i] != 0)

                    printf("\nProcess %d of size %d is not allocated", i, p[i]);

            }

            break;


        case 3:

            printf("\nWorst Fit\n");
```

```
for (i = 0; i < nb; i++) {
    for (j = i + 1; j < nb; j++) {
        if (d[i] < d[j]) {
            int temp = d[i];
            d[i] = d[j];
            d[j] = temp;
        }
    }
}
printf("\nAfter sorting block sizes:\n");
for (i = 0; i < nb; i++)
    printf("Block %d: %d\n", i, d[i]);

for (i = 0; i < np; i++) {
    flag[i] = 1;
    for (j = 0; j < nb; j++) {
        if (p[i] <= d[j]) {
            alloc[j] = p[i];
            printf("\nProcess %d of size %d is allocated in block %d of size %d", i, p[i], j, d[j]);
            flag[i] = 0;
            d[j] = 0;
```

```
                                break;
                            }
                        }
                    }
                    for (i = 0; i < np; i++) {
                        if (flag[i] != 0)
                            printf("\nProcess %d of size %d is not allocated", i, p[i]);
                    }
                    break;
                default:
                    printf("Invalid Choice…!");
                    break;
            }
        } while (ch <= 3);
    }
    return 0;
}
```

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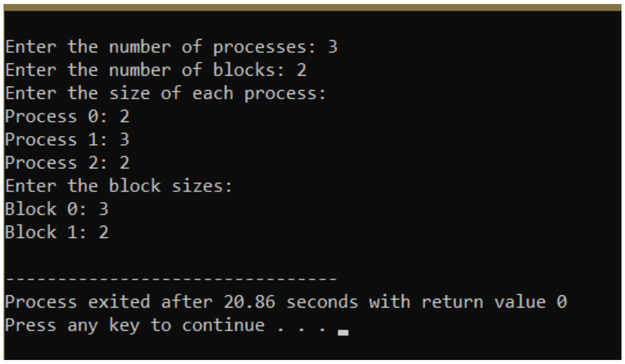
OUTPUT:



```
Enter the number of processes: 3
Enter the number of blocks: 2
Enter the size of each process:
Process 0: 2
Process 1: 3
Process 2: 2
Enter the block sizes:
Block 0: 3
Block 1: 2

--------------------------------
Process exited after 20.86 seconds with return value 0
Press any key to continue . . .
```