

Experiment – 7

Write a CPU bound C program and a I/O bound C program and observe the effect of their CPU share using the top command and its variants.

```
GNU nano 6.2 exp7cpu.c
#include<stdio.h>
int main()
{
    int ResultantMatrix[4][4],i,j,k; //matrix multiplication
    int matrix[4][4]={2,23,23,45},
    {66,45,3,23},
    {3,5,89,67},
    {4,4,9,7}};

    int matrix2[4][4]={3,5,6,4},
    {64,89,56,2},
    {56,26,56,99},
    {90,7,43,2}};

    while(1)
    {
        for (j=0; j<=4; j++){
            for (i=0; i<=4; i++){
                ResultantMatrix[i][j]=0;
                for (k=0; k<=4; k++){
                    ResultantMatrix[i][j]+=matrix[i][k]*matrix2[k][j];
                }
                printf("Result=%d", ResultantMatrix[i][j]);
            }
        }
    }
}
```

[illegible]

```
GNU nano 6.2 exp7cpu2.c
#include<stdio.h>
#include<time.h>
void main() {
    clock_t start, end;
    double runtime;
    start=clock();
    int i, num = 1, primes = 0;
    while (num<=10){
        i=2;
        while (i<=num){
            if (num%i==0)
                break;
            i++;
        }
        if (i==num)
            primes++;
        printf("%d prime numbers calculated \n", primes);
        num++;
    }
    end=clock();
}
```

[Read 21 lines]

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```
GNU nano 6.2 exp7io.c *
#include<stdio.h>
#include<time.h>
int main()
{
    int j,k,n;
    while(1){
        printf("\nEnter any number : ");
        scanf("%d",&k);
        printf("Enter any number : ");
        scanf("%d",&j);
        n=k*j;
        printf("%d",n);

        time_t rawtime;
        struct tm * timeinfo;
        time( &rawtime );
        timeinfo = localtime ( &rawtime );
        printf(" \nCurrent local time and date: %s", asctime (timeinfo));
    }
}
```

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