

CPU PERFORMANCE

EXP NO: 32

AIM: To write a C program to implement CPU performance measures.

ALGORITHM:

Step 1: start

Step 2: Declare the necessary variables: cr

(clock rate), p (number of processors), p1 (a copy of the number of processors), i (loop variable), and cpu (array to store CPU times).

Step 3: Initialize the cpu array elements to 0.

Step 4: Prompt the user to enter the number of processors (p).

Step 5: Store the value of p in p1.

Step 6: Start a loop from 0 to p-1:

- Prompt the user to enter the cycles per instruction (cpi) for the current processor.
- Prompt the user to enter the clock rate (cr) in GHz for the current processor.
- Calculate the CPU time (ct) using the formula: $ct = 1000 * cpi / cr$.
- Display the CPU time for the current processor.
- Store the CPU time in the cpu array at index i.

Step 7: Set max as the first element of the cpu array.

Step 8: Start a loop from 0 to p1-1:

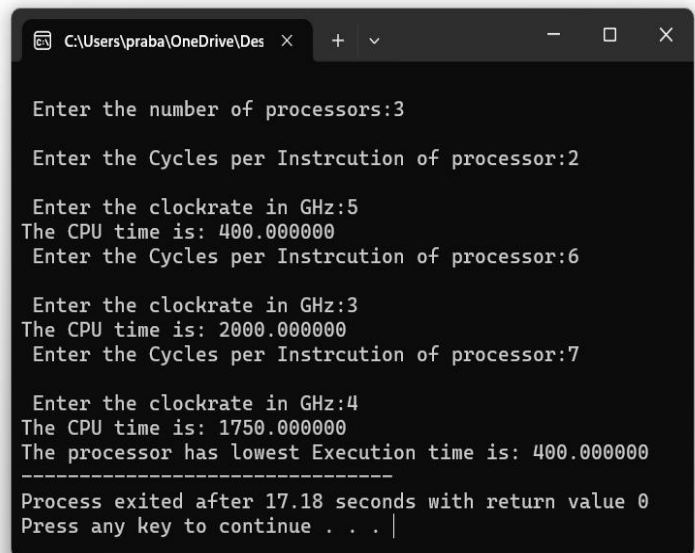
- If the CPU time at index i is less than or equal to max, update max to the current CPU time.

Step 9: Display the processor with the lowest execution time (max).

Step 10: Exit the program.

PROGRAM/OUTPUT SS:

```
1 #include <stdio.h>
2 int main(){
3     float cr;
4     int p,p1,i;
5     float cpu[5];
6     float cpi,ct,max;
7     int n=1000;
8     for(i=0;i<=4;i++)
9     {
10        cpu[i]=0;
11    }
12    printf("\n Enter the number of processors:");
13    scanf("%d",&p);
14    p1=p;
15    for(i=0;i<p;i++)
16    {
17        printf("\n Enter the Cycles per Instrcution of processor:");
18        scanf("%f",&cpi);
19        printf("\n Enter the clockrate in GHz:");
20        scanf("%f",&cr);
21        ct=1000*cpi/cr;
22        printf("The CPU time is: %f",ct);
23        cpu[i]=ct;
24    }
25    max=cpu[0];
26    for(i=0;i<p1;i++)
27    {
28        if(cpu[i]<=max)
29            max=cpu[i];
30    }
31    printf("\nThe processor has lowest Execution time is: %f ", max);
32    return 0;
33 }
```



```
C:\Users\praba\OneDrive\Des x + v - □ ×

Enter the number of processors:3

Enter the Cycles per Instrcution of processor:2

Enter the clockrate in GHz:5
The CPU time is: 400.000000
Enter the Cycles per Instrcution of processor:6

Enter the clockrate in GHz:3
The CPU time is: 2000.000000
Enter the Cycles per Instrcution of processor:7

Enter the clockrate in GHz:4
The CPU time is: 1750.000000
The processor has lowest Execution time is: 400.000000
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Process exited after 17.18 seconds with return value 0
Press any key to continue . . . |
```

RESULT: Thus the program was executed successfully using DevC++.