

## 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:

- a. Prompt the user to enter the cycles per instruction (cpi) for the current processor.
- b. Prompt the user to enter the clock rate (cr) in GHz for the current processor.
- c. Calculate the CPU time (ct) using the formula:  $ct = 1000 * cpi / cr$ .
- d. Display the CPU time for the current processor.
- e. 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:

- a. 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:

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    float cr;
```

```
    int p,p1,i;
```

```
    float cpu[5];
```

```
    float cpi,ct,max;
```

```
    int n=1000;
```

```
    for(i=0;i<=4;i++)
```

```
    {
```

```
        cpu[i]=0;
```

```
    }
```

```
    printf("\n Enter the number of processors:");
```

```
    scanf("%d",&p);
```

```

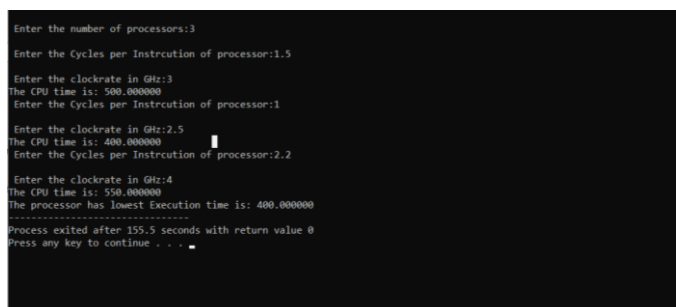
p1=p;
for(i=0;i<p;i++)
{
    printf("\n Enter the Cycles per Instrcution of processor:");
    scanf("%f",&cpi);
    printf("\n Enter the clockrate in GHz:");
    scanf("%f",&cr);
    ct=1000*cpi/cr;
    printf("The CPU time is: %f",ct);
    cpu[i]=ct;
}
max=cpu[0];
for(i=0;i<p1;i++)
{
    if(cpu[i]<=max)
        max=cpu[i];
}
printf("\nThe processor has lowest Execution time is: %f ", max);

return 0;

}

```

## OUTPUT:



```

Enter the number of processors:3
Enter the Cycles per Instrcution of processor:1.5
Enter the clockrate in GHz:3
The CPU time is: 500.000000
Enter the Cycles per Instrcution of processor:1
Enter the clockrate in GHz:2.5
The CPU time is: 400.000000
Enter the Cycles per Instrcution of processor:2.2
Enter the clockrate in GHz:4
The CPU time is: 550.000000
The processor has lowest Execution time is: 400.000000
-----
Process exited after 155.5 seconds with return value 0
Press any key to continue . . .

```

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