Walchand College of Engineering, Sangli
Department of Computer Science and Engineering

Class: Final Year (Computer Science and Engineering)

Year: 2022-23 **Semester:** 7

Course: High Performance Computing Lab

Practical No. 02

Exam Seat No:

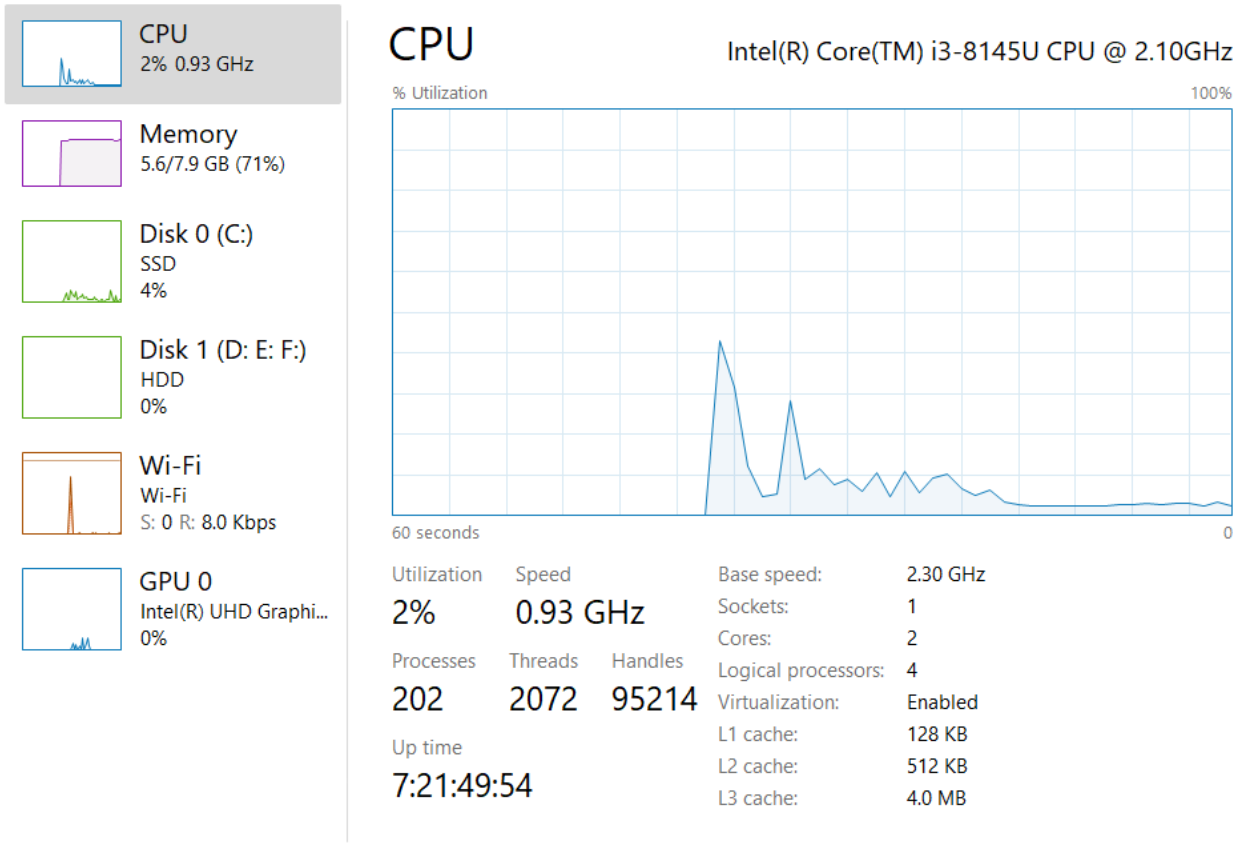
1. 2019BTECS00033 – Teknath K jha

Title of practical:

openMp program for :

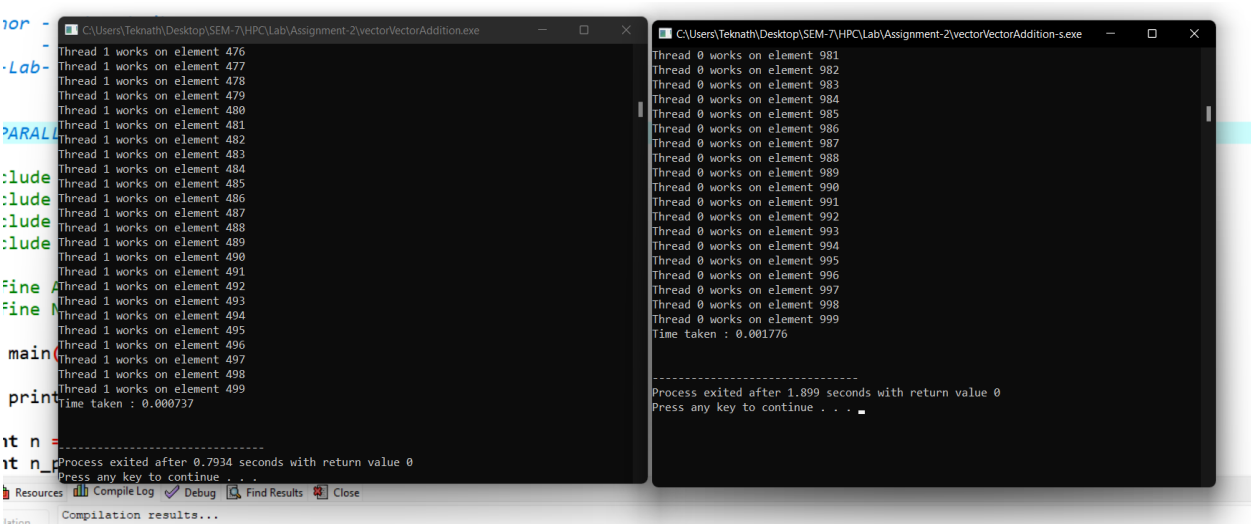
1) **Vector Vector Addition**
2) **Vector Scalar Addition**

MY SYSTEM CONFIGURATION :



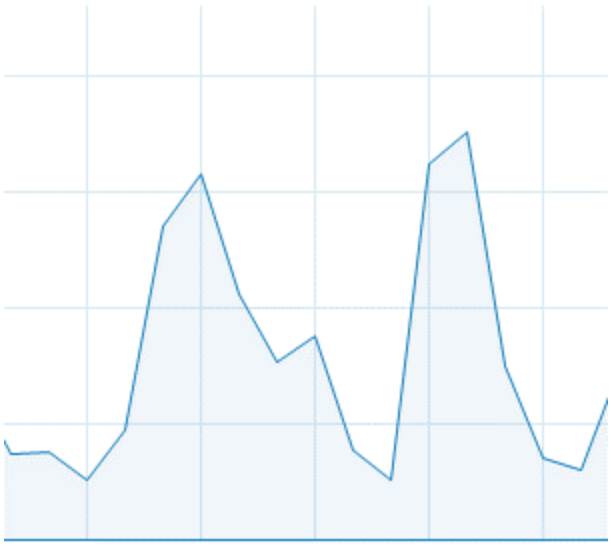
A) Problem Statement 1: Vector Vector Addition :

Comparison with sequential :

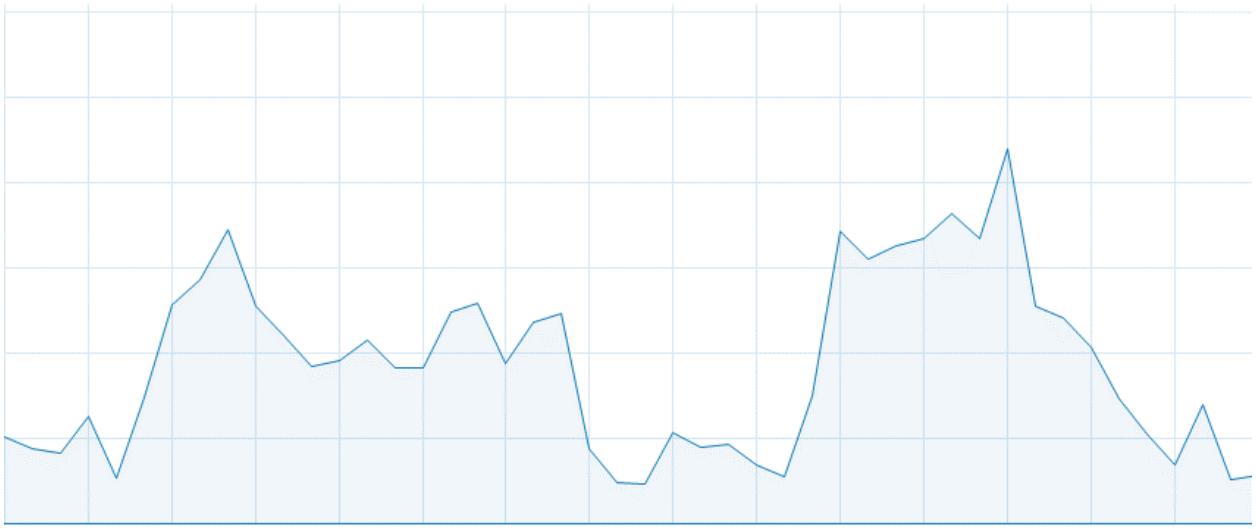


In below images 1st peak is of sequential and later is of parallel program :

Images from CPU Utilization Task Manager :

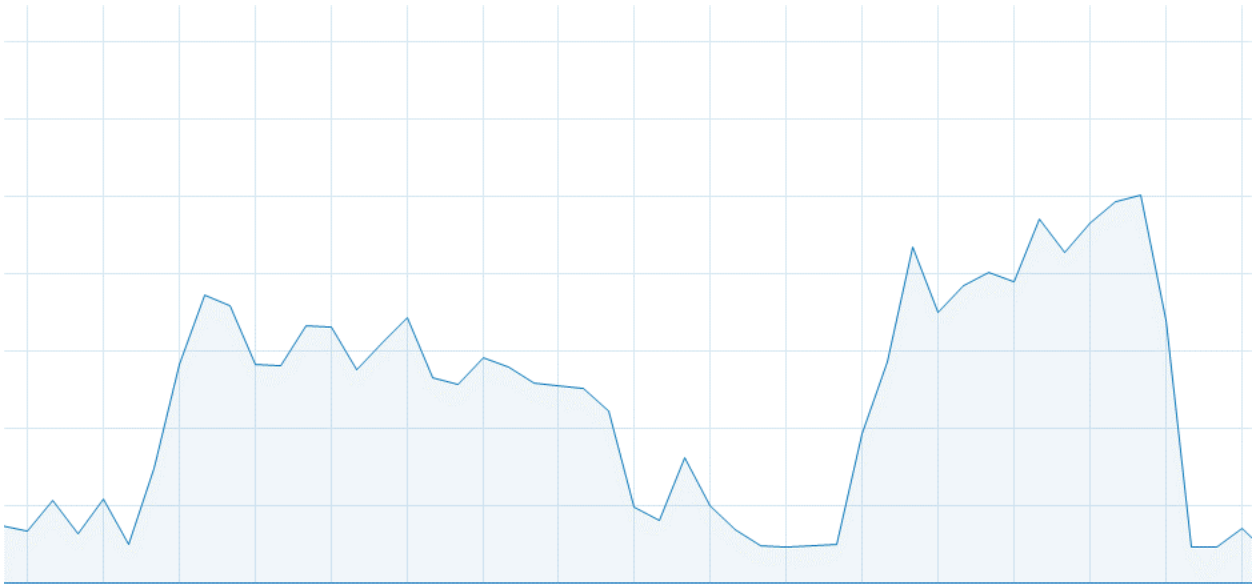


1) **for n=1000**



2)

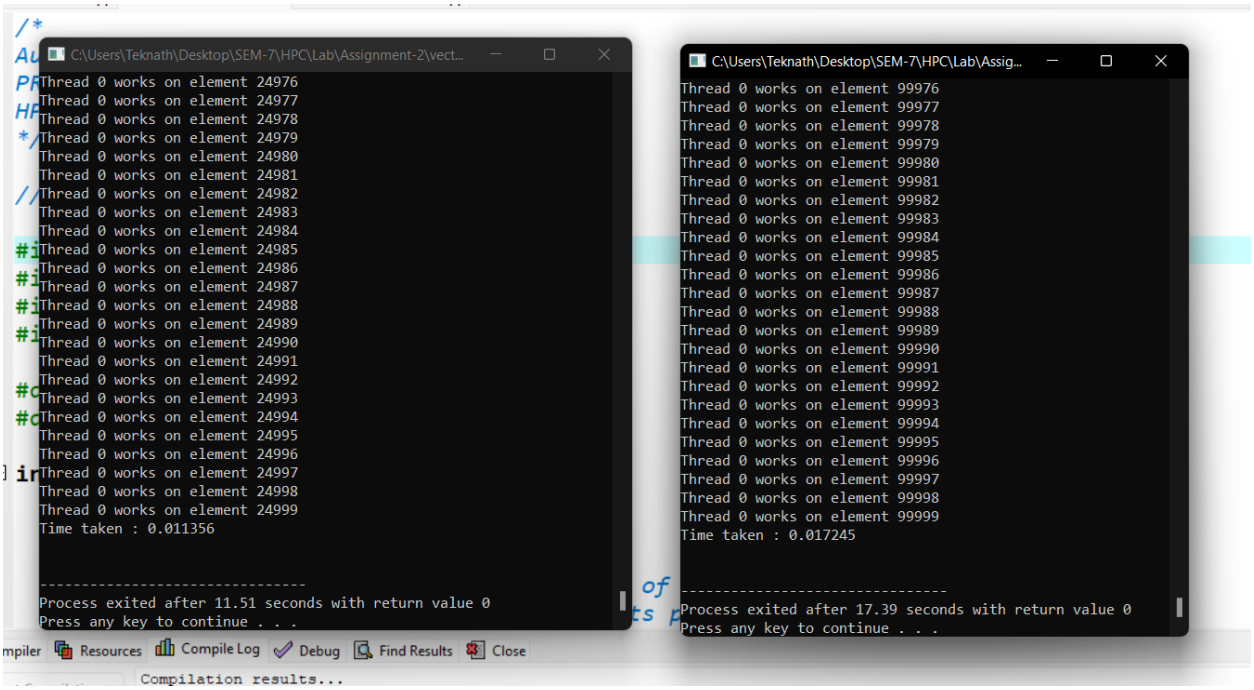
for n=10000



Base speed: 2.30 GHz
Sockets: 1

3) GHz

for n= 100000

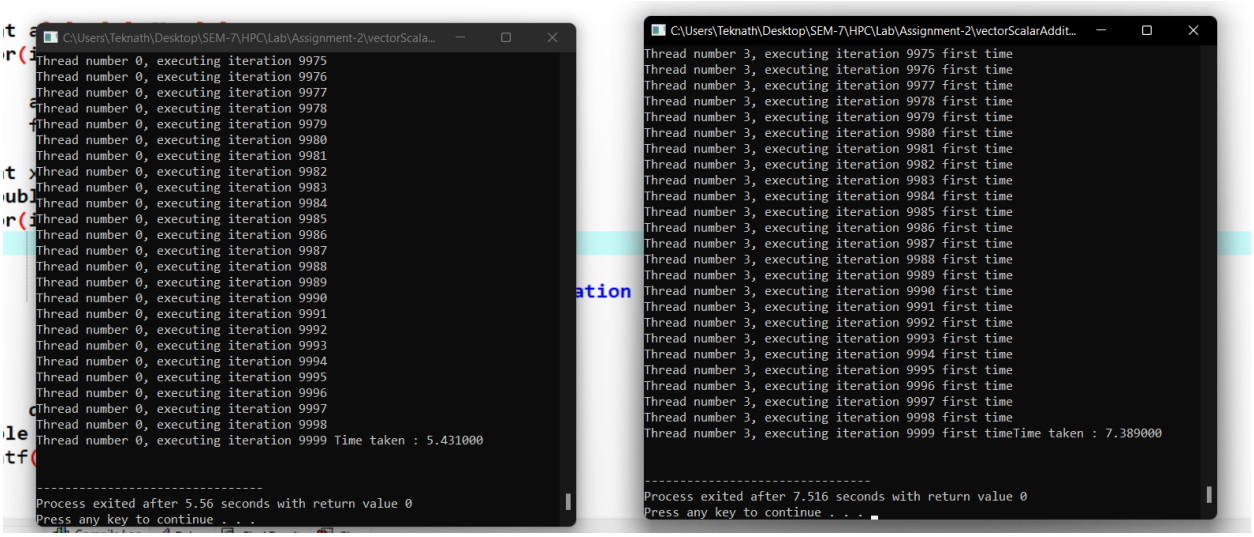


Here sequential takes 0.01725 and parallel takes 0.011356 clock ticks

Conclusion : my sequential program uses less CPU and parallel program uses more UPU for same program and same number of instruction Sets.

Although time calculation is negligible as it is small program .

Problem Statement 2: Vector Scalar Addition



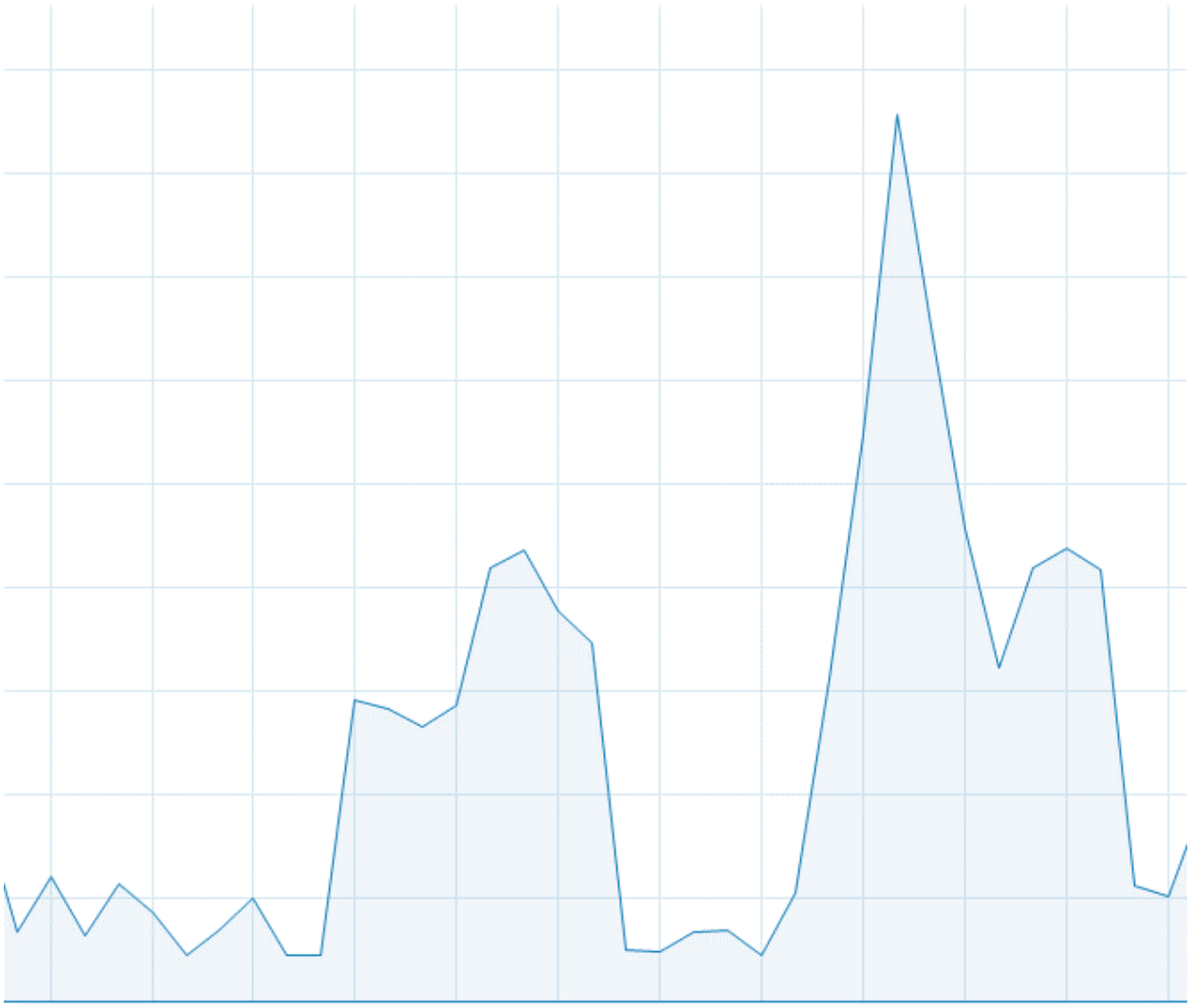
Parallel :7.3 sec Sequential: 5.4sec

So here sequential is faster than parallel.

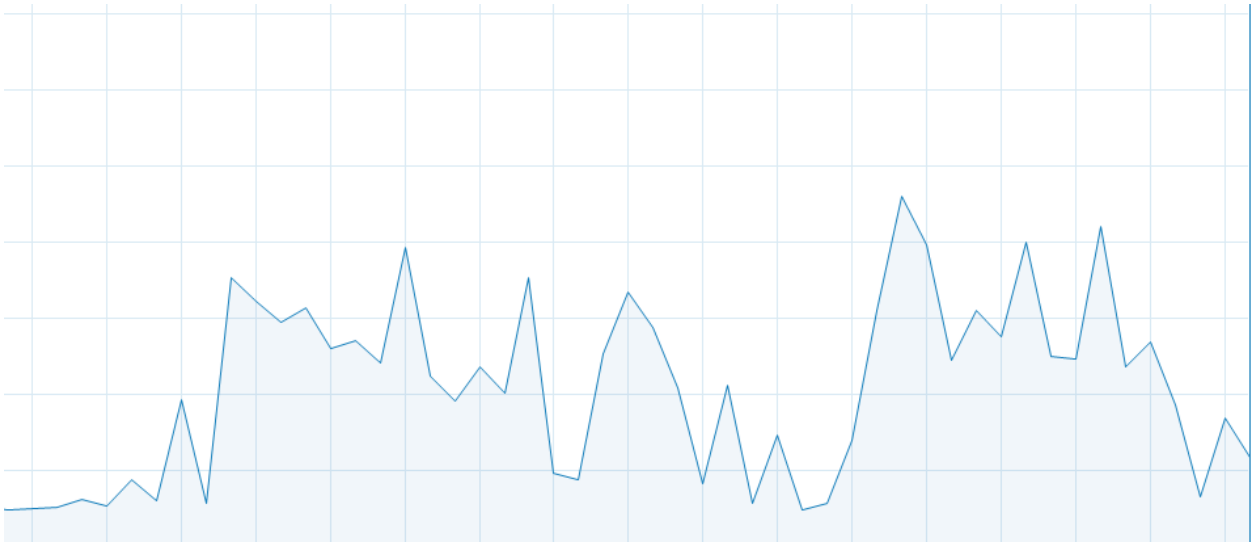
In below images 1st peak is of sequential and later is of parallel program :

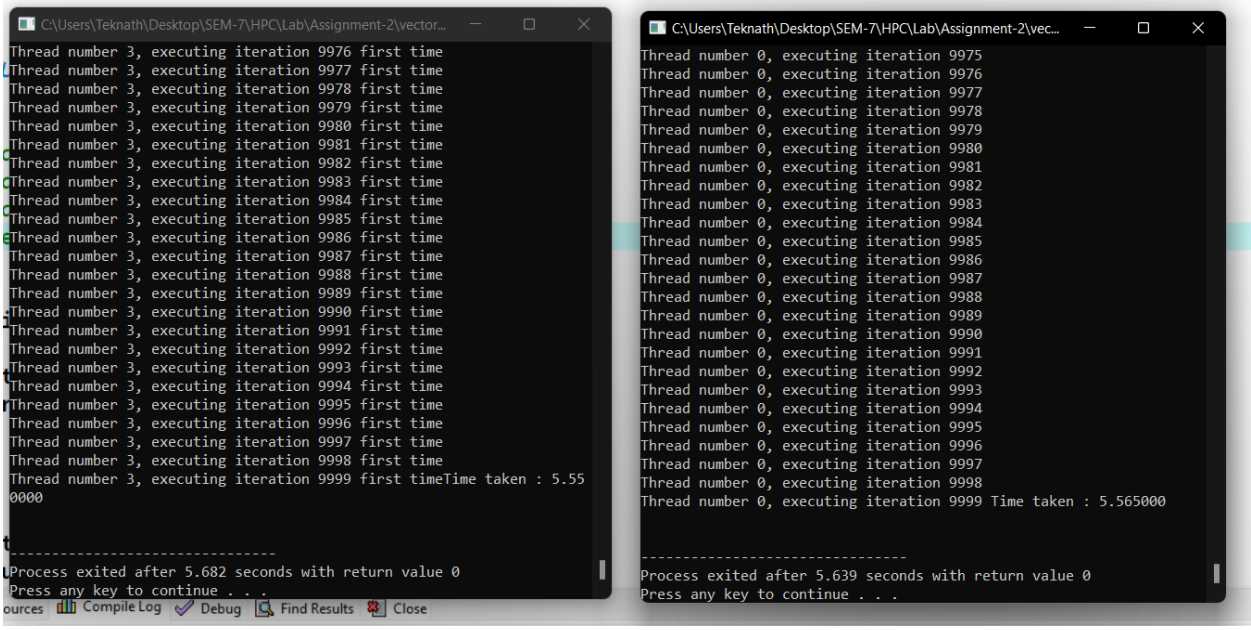
CPU Graphs :

1)



2)





Here most of time width of sequential is more than parallel which shows time difference.

Conclusion :

In execution : sequential taken 5.56 while parallel taken 5.55 which is considerable difference , further observation of CPU cycles also proves this that parallel is faster than sequential .

Github Link:

https://github.com/Teknath-jha/HPC-LAB-2019BTECS00033/tree/main/Assignment-2