Report for Assignment 1
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1. CPU Usage of the system at an interval of 1 second. Took 1000 readings. The data is stored in the file **readings.log** as :
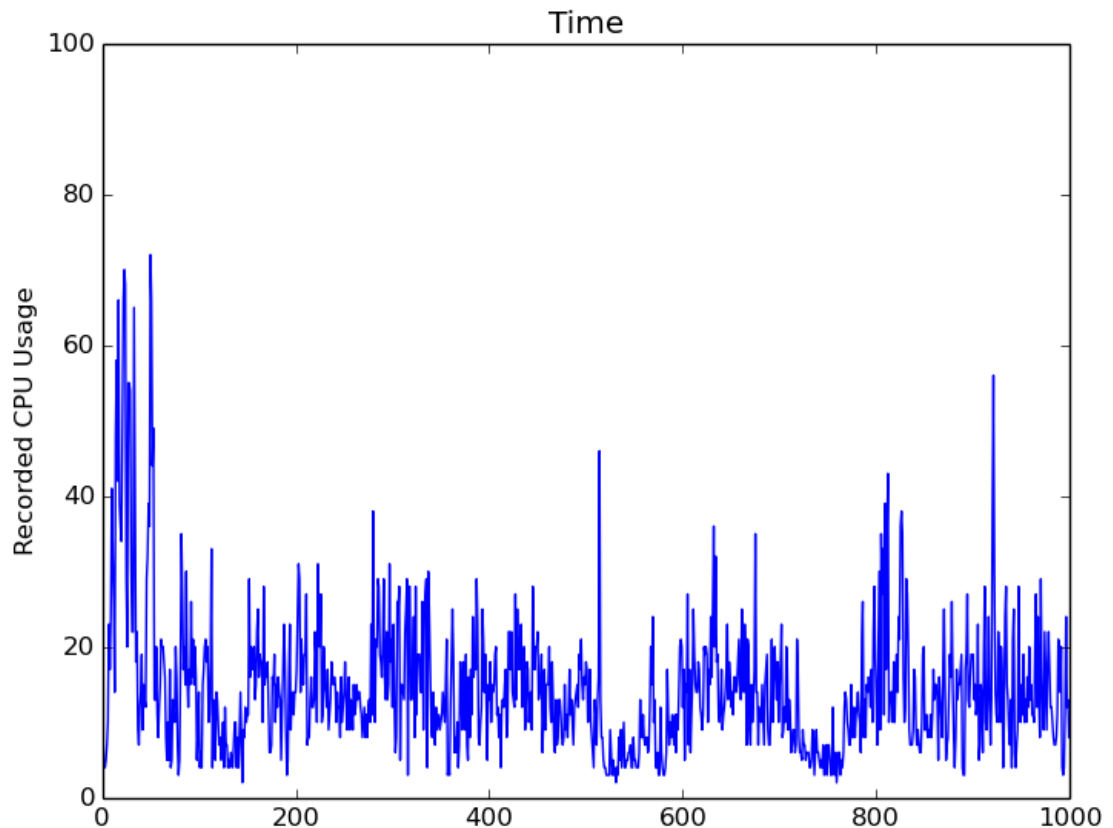   Timestamp   CPU Usage
   The code is written in python - **CPU_Usage.py** and **plot.py**
   CPU_Usage.py gets the cpu usage every second and stores it as an output file.
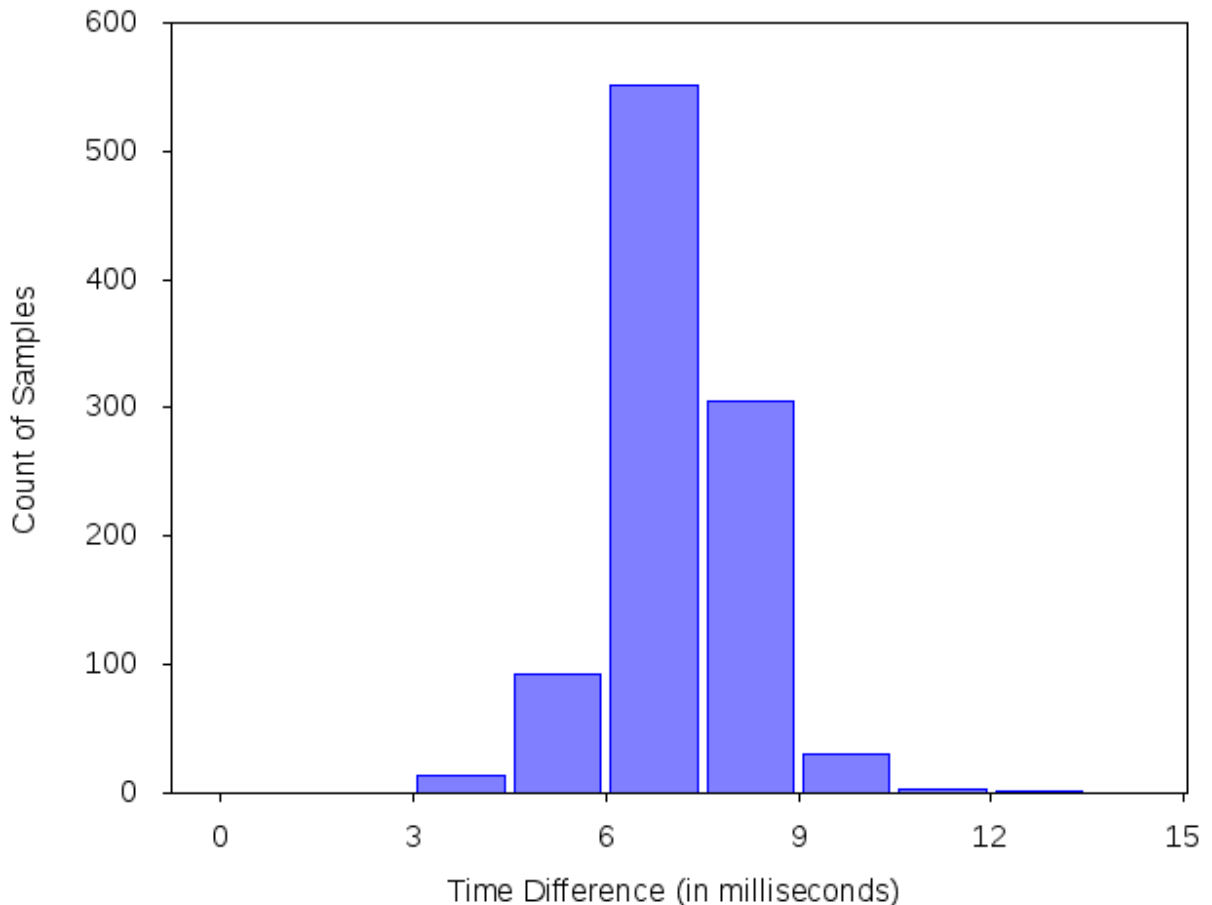   **plot.py** takes this output and plots the graph.

2. Graph between the Recorded CPU Usage v/s Time

The CPU usage takes a minimum value of 3% and a maximum value of 66% which varies non uniformly depending on the processes running inside the CPU.

3.   Histogram of the time interval between two readings vs **count** of samples

The graph indicates that even though readings were supposed to be taken at an interval of 1 second, there was a difference from 3 milli seconds to 13 milliseconds between many of them.

4. The difference between adjacent samples was not exactly 1 second because of scheduling delay. After 1 second, the process will be in the ready state but will not be executed immediately because the CPU might be busy in executing some other process . Also note that the inter-sample time difference is never exactly 1 second because in order to find the cpu usage at an interval of 1 second I have used the **sleep** function which puts it in the blocked state. Moreover the sleep function is not perfectly accurate and does not assure that the program will be added to the ready state after exactly 1 second.

Inter sample time:

1 second (for an accurate sleep function) + error in sleep function + scheduling delay (>= 0)