**Parallel programming skills individual report**

* The raspberry PI B+ has the following components: CPU/Ram, Ethernet Controller, USB, HDMI, Display, Ethernet, camera.
* The Raspberry PI’s CPU is a quad-core or has 4 cores.
* The main differences between x86(CISC) and ARM (RISK) are the following: X86 processor by intel is a complex instruction set computing(CISC), which has a lot more and complex instruction sets to access the memory while Arm processors have reduced and less complicated instruction sets than the x86 processers. The intel x86 processors use the little-endian format to store date in the memory however the ARM processors use the BI-endian format since version 3. The other difference between them is for accessing the memory, The Arm processers use load/store and has more general registers unlike the x86 processors.
* The main difference between sequential and parallel computing is: parallel computing involves the concurrent or simultaneous execution of processes or threads at the same time while sequential computation involves consecutive and ordered execution of processes one after another.
* Data parallelism involves concurrent execution of the same task on each multiple computing cores and running task on different components of data, in contrast task parallelism involves distributing tasks simultaneously performed by threads across different processors.
* Process is the instance where a program is being executed in a computer(running). Thread is form of a process but involves dividing one process into smaller sequence of instructions that can be executed independently.
* Open MP is an application programming interface that supports shared memory programming and OpenMP programs are programs that helps the compiler to from a threaded code in order to have a concurrent execution of processes.
* Four applications that benefit from multi-core system are compliers, web servers, database servers, multimedia applications.
* Some of the reason to prefer multi-core over single-core are: it is hard and time consuming to increase a single-core’s clock frequencies, the applications that are being made now a days are multithreaded and in general parallelism is preferred for a computer architecture.