BLUE BRAIN

Human brain and the activity of its countless neurons and synaptic possibilities contribute to the human mind. The human mind is different from the brain: the brain is the tangible, visible part of the body; the mind consists of the intangible realm of thoughts, feelings, beliefs and consciousness. We have the unique power of forethought: the ability to imagine the future in many iterations, and then to actually create the future we visualize, to make the visible invisible. So, just imagine if we could transact these ideas and knowledge to a computer, a virtual brain which can be made to think, analyse and respond. We could upload contents of the natural brain into it and that way the intelligence, thoughts and skill of a person can be made eternal even after his demise. Things could be remembered without any effort and decisions can be made even without the presence of a person.

 Sounds fascinating, isn't it? But is it really possible to create a virtual brain? Well, the answer is Yes. "Blue brain" Is the name given to the world's first virtual brain. IBM in collaboration with Brain Mind institute at EPFL in Switzerland initiated this project and aims to create digital reconstruction of brain by reverse engineering mammalian brain circuitry. And there arises a question of "how this blue brain actually works?" It takes in its input through Artificial neurons with silicon chips and electric impulses which will be interpreted by the set of bits in set of registers and processed through AI and Arithmetic and logical calculations. To build a Blue brain firstly the data should be acquired where the slices of brain are studied under microscope and its neuronal 3D morphologies are reconstructed using Neurolucida software package. The simulation is brought about by a primary software called NEURON written in C, C++ And FORTRAN and using a set of software classes called BBP-SDK. Whereas the visualization of results is made possible by RTNeuron which is a primary application written in C++ And open GL where Animations can be stopped, started and zoomed. It employs a super computer capable of processing 228 TFLOPS called "Blue Gene" which can simulate up to 100 cortical columns, 1 million neurons and 1 billion synapses at once. Now, there is no question how the blue brain work. But the real intriguing question is that How Is exactly a human brain will be uploaded into it? The uploading is possible by the use of very small robots known as "nanobots". These bots are so tiny that they can easily travel through our circulatory system. By propagating into the spine and brain, they will be able to monitor the activity and structure of our central nervous system. They will be able to provide an interface with computer while we still reside in our biological form. Nanobots could also carefully scan the structure of our brain, providing a complete readout of the connection. This information, when entered into a computer, could then continue to function as us. Thus the data stored in the entire brain will be uploaded into the computer thereby clearing the ambiguity of updating of human brain into the blue brain. This project will search for insights into how human beings think and remember. Also, scientists think that the blue brain could help to cure the Parkinson's disease. It can be a good remedy towards human disability like a deaf can get the information via direct nerve stimulation. Business analysis, attending conferences, reporting can be done consistently without any delay. Just like the two faces of a coin it has its own demerits Further, there are many new dangers these technologies will open. We will be susceptible to new forms of harm. We become dependent upon the

computer systems and Others may use technical knowledge against us. Computer viruses will pose an increasingly critical threat. The real threat, however, is the fear that people will have of new technologies and that fear may culminate in a large resistance. Clear evidence of this type of fear is found today with respect to human cloning.

Within span of few years, we will be able to scan ourselves into the computers. Is this the beginning of eternal life? If it is, then the secrets of functioning of our brain would finally be revealed and any data could be accessed from the knowledge of the virtual brain irrespective of time. It would be a revolutionary change in the both biological as well as digital technologies. However, the arguments regarding outcome of this project is controversial and can contribute to the betterment of human's society if successful else the repercussions would be catastrophic.