

**A SEMINAR REPORT  
ON  
BLUE - BRAIN**

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**CERTIFICATE**

Certified that seminar work entitled “.....Blue - Brain.....”is a bonafide work carried out in the fifth semester by “.....”in partial fulfillment for the award of Bachelor of Technology in “.....Computer Engineering.....”from Alpha College of Engineering and Technology during the academic year 2012-2013. Who carried out the seminar work under the guidance and no part of this work has been submitted earlier for the award of any degree.

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## ABSTRACT

Today scientists are in research to create an artificial brain that can think, respond, take decision, and keep anything in memory. The main aim is to upload human brain into machine. So that man can think, take decision without any effort. After the death of the body, the virtual brain will act as the man. So, even after the death of a person we will not lose the knowledge, intelligence, personalities, feelings and memories of that man, that can be used for the development of the human society. Technology is growing faster than every thing. IBM is now in research to create a virtual brain, called “Blue brain”. If possible, this would be the first virtual brain of the world. IBM, in partnership with scientists at Switzerland’s Ecole Polytechnique Fédérale de Lausanne’s (EPFL) Brain and Mind Institute will begin simulating the brain’s biological systems and output the data as a working 3-dimensional model that will create a high-speed tele-chemical interactions that take place within the brain’s interior. These include cognitive functions such as language, learning, perception and memory in addition to brain malfunction such as psychiatric disorders like depression and autism. From there, the modeling will expand to other regions of the brain and, if successful, shed light on the relationships between genetic, molecular and cognitive functions of the brain.



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# CHAPTER 1

## INTRODUCTION

Human brain is the most valuable creation of God. The man is called intelligent because of the brain. The brain translates the information delivered by the impulses, which then enables the person to react. But we lose the knowledge of a brain when the body is destroyed after the death of man. That knowledge might have been used for the development of the human society. What happens if we create a brain and upload the contents of natural brain into it?

### 1 Blue Brain




The name of the world's first virtual brain. That means a machine that can function like a human brain. Today scientists are in research to create an artificial brain that can think, respond, take decisions, and keep anything in memory. The main aim is to upload human brain into machine. So that man can think, take decisions without any effort. After the death of the body, the virtual brain will act as the man. So, even after the death of a person we will not lose the knowledge, intelligence, personalities, feelings and memories of that man that can be used for the development of the human society. No one has ever understood the complexity of human brain. It is complex than any circuitry in the world. So, a question may arise "Is it really possible to create a human brain?" The answer is "Yes". Because whatever man has created today always he has followed the nature. When man does not have a device called computer, it was a big question for all. Technology is growing faster than everything. IBM is now in research to create a virtual brain, called "Blue Brain". If possible, this would be the first virtual brain of the world. Within 30 years, we will be able to scan ourselves into the computers. Is this the beginning of eternal life.



## 1.2 What is Virtual Brain?

Virtual brain is an artificial brain, which does not actually the natural brain, but can act as the brain. It can think like brain, take decisions based on the past experience, and response as the natural brain can. It is possible by using a super computer, with a huge amount of storage capacity, processing power and an interface between the human brain and this artificial one. Through this interface the data stored in the natural brain can be up loaded into the computer. So the brain and the knowledge, intelligence of anyone can be kept and used for ever, even after the death of the person.

## 3 Why we need Virtual Brain?



Today we are developing because of our intelligence. Intelligence is the information that can be created. People are of this quality, so that they can think up to such an extent where other can not reach. Human society is always need of such intelligence and such an intelligent brain to have with. But the intelligence is lost along with the body after the death. The virtual brain is a solution to it. The brain and intelligence will alive even after the death. We often face difficulties in remembering things such as people's names, their birthdays, and the spellings of words, proper grammar, important dates, history, facts etc... In the busy life every one want to be relaxed. Can't we use any machine to assist for all these? Virtual brain may be the solution to it. What if we upload ourselves into computer, we were simply aware of a computer, or maybe, what if we lived in a computer as a program?

## 1.4 How it is possible?

First, it is helpful to describe the basic manners in which a person may be uploaded into a computer. Raymond Kurzweil recently provided an interesting paper

on this topic. In it, he describes both invasive and noninvasive techniques. The most promising is the use of very small robots, or nanobots. These robots will be small enough to travel throughout our circulatory systems. Traveling 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 computers that is as close as our mind can be while we still reside in our biological form. Nanobots could also carefully scan the structure of our brain, providing a complete readout of the connections between each neuron. They would also record the current state of the brain. This information, when entered into a computer, could then continue to function as us. All that is required is a computer with large enough storage space and processing power. Is the pattern and state of neuron connections in our brain truly all that makes up our conscious selves? Many people believe firmly those we possess a soul, while some very technical people believe that quantum forces contribute to our awareness. But we have to now think technically. Note, however, that we need not know how the brain actually functions, to transfer it to a computer. We need only know the media and contents. The actual mystery of how we achieved consciousness in the first place, or how we maintain it, is a separate discussion. Really, this concept appears to be very difficult and complex to us. For this we have to first know how the human brain actually works.



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