

An Industrial Visit Report
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the requirements for the award of the degree of
BACHELOR OF TECHNOLOGY

in

Computer Science & Engineering

from

UNIVERSITY OF CALICUT



Submitted By

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Certificate

*This is to certify that the INDUSTRIAL VISIT REPORT is a bonafide record of the work done by **SAJIHE C. K. (CEAOECS066)** under our supervision and guidance. The report has been submitted in partial fulfilment of the requirement for award of the Degree of **Bachelor of Technology** in **Computer Science & Engineering** from the University of Calicut for the year 2018.*

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Last but not least, I would like to thank all the teaching and non-teaching staff and my friends who have helped me in every possible way in the completion of the Industrial visit.

SAJIHE C. K. (CEAOECS066)

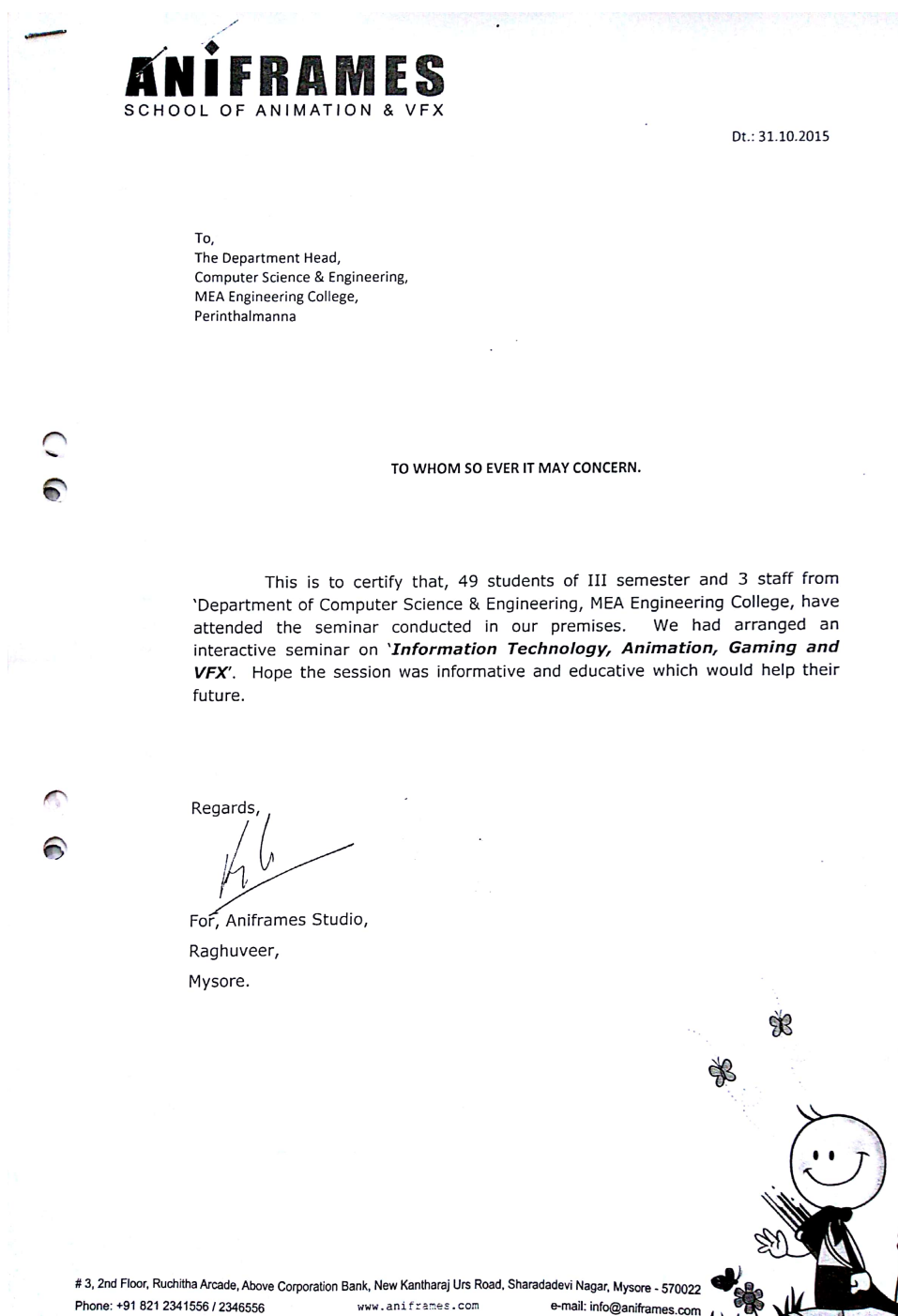


FIGURE 1: ANiFRAMES

OSTRICH**Date: 28/09/2016****Certificate****Ref: INDL/VST/OMI/011/2016-2017****To Whomsoever It May Concern**

This is to certify that team of 51 students of 5th Semester B.Tech Computer Science & Engineering with 3 faculty members of **MEA ENGINEERING COLLEGE**, Vengoor, Pattikkad P.O., Malapuram, Kerala-679325 has visited our factory on 28/09/2016 as part of their industrial tour.

We wish them all success.

For Ostrich Mobility Instruments Pvt. Ltd.,

Authorized Signatory



FIGURE 2: Ostrich Mobility Instruments

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List of Abbreviations

APP	A pplication
RF	R adio F requency
IC	I ntegrated C ircuit
ECG	E lectro C ardiogram
CMG	C ontrol M oment G yro
TSOP	T hin S mall O utline P ackage
EPW	E lectrically P owered W heelchair

CHAPTER 1

INTRODUCTION

Industrial visit is a part of professional courses, during which students visit companies and get insight on the internal working environment of the company. Industrial visits sensitize students to the practical challenges that organizations face in the business world. It focuses on preparing the students to learn about the day-to-day workings of a particular industry and understand its operational issues.

The following industrial visits have been undertaken by me. It includes ANiFRAMES College of Arts, Animation and Multimedia Mysore and Ostrich Mobility Instruments Pvt.Ltd. Bangalore.

ANiFRAMES - College of Arts, Animation and Multimedia strives to be the premier institute for multimedia education and become a worldwide influence as an education provider in the field of learning and creativity, with its presence felt across the country. This vision will be achieved through a learning-centered approach that fulfills the evolving needs of the market place in a variety of creative careers.

OSTRICH MOBILITY relentless focus on bringing innovations to the health-care segment, resulted in bringing a new product line under the brand of Ostrich Intimate series, dedicatedly for high quality electric beds for home and hospitals. Using their own unique and patented technologies, they have created feature-rich products in every category, which customers have come to rely on and accept as an integral part of their lives. The most innovative and revolutionary suspension technology named “SPLIT Frame Technology”, provides comfort and safety in all types of road conditions.

CHAPTER 2

ANiFRAMES - College of Arts, Animation and Multimedia

Date Of Visit: 31/10/15

Venue: ANiFRAMES College of Arts, Animation and Multimedia Mysore



FIGURE 2.1: Session about Animation and Production

ANiFRAMES - College of Arts, Animation and Multimedia strives to be the premier institute for multimedia education and become a worldwide influence as an education provider in the field of learning and creativity, with its presence felt across the country. This vision will be achieved through a learning-centered approach that fulfills the evolving needs of the market place in a variety of creative careers.

2.1 Animation

Animation is a dynamic medium in which images or objects are manipulated to appear as moving images. In traditional animation, images are drawn or painted by hand on transparent celluloid sheets to be photographed and exhibited on film. Today most animations are made with computer-generated imagery (CGI). Computer animation can be very detailed 3D animation, while 2D computer animation can be used for stylistic reasons, low bandwidth or faster real-time renderings. Other common animation methods apply a stop motion technique to two and three-dimensional objects like paper cutouts, puppets or clay figures. The stop motion technique where live actors are used as a frame-by-frame subject is known as pixilation.

Commonly the effect of animation is achieved by a rapid succession of sequential images that minimally differ from each other. The illusion—as in motion pictures in general—is thought to rely on the phi phenomenon and beta movement, but the exact causes are still uncertain. Analog mechanical animation media that rely on the rapid display of sequential images include the phénakistiscope, zoetrope, flip book, praxinoscope and film. Television and video are popular electronic animation media that originally were analog and now operate digitally. For display on the computer, techniques like animated GIF and Flash animation were developed.

2.2 History Of Animation

The history of animation started long before the development of cinematography. Humans have probably attempted to depict motion as far back as the paleolithic period. Shadow play and the magic lantern offered popular shows with moving images as the result of manipulation by hand and/or some minor mechanics. In 1833 the

phenakistiscope introduced the stroboscopic principle of modern animation, which would also provide the basis for the zoetrope (1866), the flip book (1868), the praxinoscope (1877) and cinematography.

Charles-Émile Reynaud further developed his projection praxinoscope into the Théâtre Optique with transparent hand-painted colorful pictures in a long perforated strip wound between two spools, patented in December 1888. From 28 October 1892 to March 1900 Reynaud gave over 12,800 shows to a total of over 500.000 visitors at the Musée Grévin in Paris. His Pantomimes Lumineuses series of animated films each contained 300 to 700 frames that were manipulated back and forth to last 10 to 15 minutes per film. Piano music, song and some dialogue were performed live, while some sound effects were synchronized with an electromagnet.

2.3 Animator

An animator is an artist who creates a visual sequence (or audio-visual if added sound) of multiple sequential images that generate the illusion of movement, that is, an animation. Animations are currently in many areas of technology and video, such as cinema, television, video games or the internet. Generally, these works require the collaboration of several animators. The methods to create these images depend on the animator and style that one wants to achieve (with images generated by computer, manually ...).

Animators can be divided into animators of characters (artists who are specialized in the movements, dialogue and acting of the characters) and animators of special effects (for example vehicles, machinery or natural phenomena such as water, snow, rain).

2.4 Animation and Human Rights

Currently, animation is used as a method of entertainment, and employed to criticize or defend certain aspects of society. Most of these projects have been nominated for the Oscars or have gone viral on the Internet. For example, *In a Heartbeat*, directed by the American Esteban Bravo and Beth David, is one of the candidates to take the Best Animated Short Film award at the Oscars 2018.

”*In a Heartbeat*” is about a love story between two teenage boys, as the directors wanted to break the prejudices towards the LGBT community. It’s a short animation without dialogue where the heart of one of the boys escapes to pursue the other young person. The short film already has more than 32 million views on YouTube, and despite its success, it has created some controversy.

2.5 How Does Computer Animation Work?

The animator uses a computer to generate a sequence of still images, that give the illusion of motion through three dimensional space when you play them. You require a 3D animation software, such as 3DMax or Maya, and a good computer.

Instead of drawing every detail in the frame by hand, you draw every frame using a computer! The animator gives the software a set of parameters that describes how the elements should look and move, something along the lines of:

”At frame 1 (a point in time) place the ball at coordinates X1,Y1,Z1 (a point in space).”

”At frame 25 (1 second later) place the ball at coordinates X2,Y2,Z2 (a second point in space).”

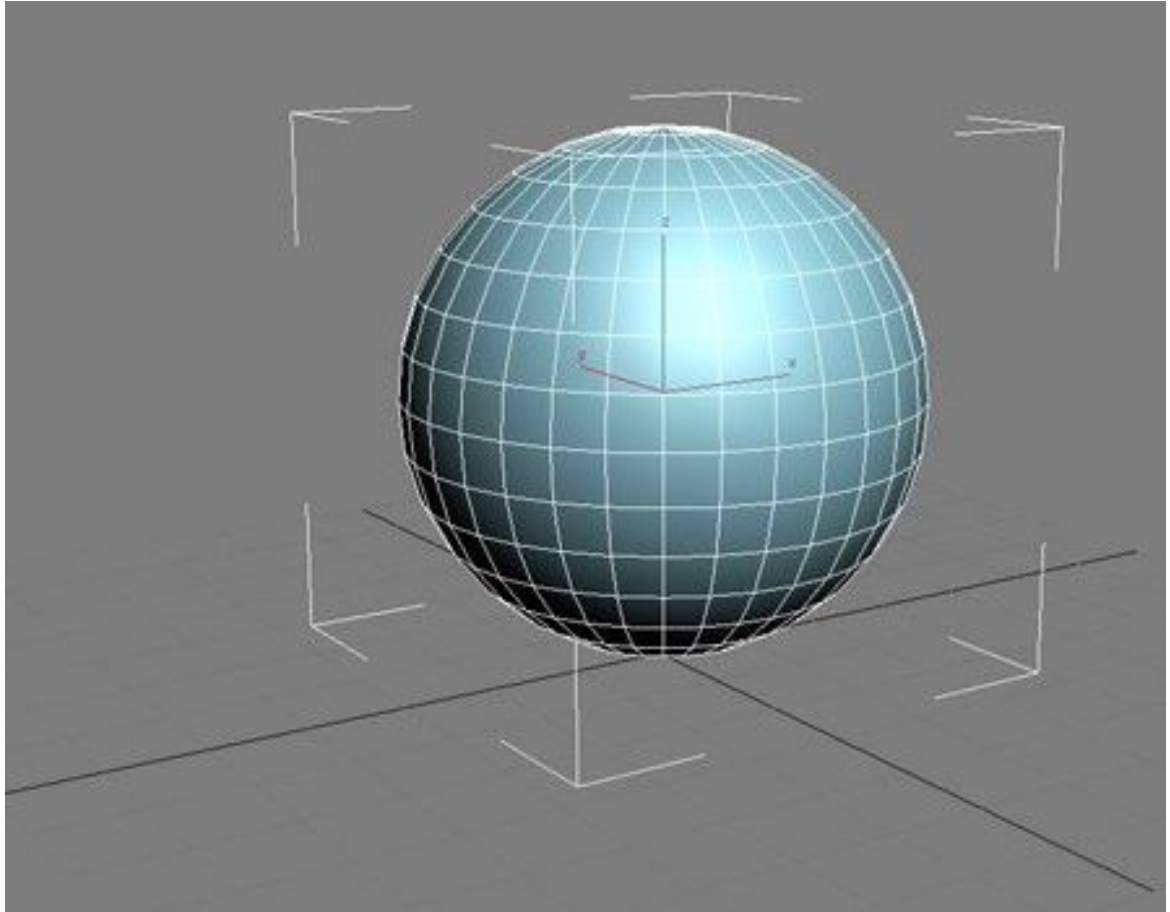


FIGURE 2.2: Screen-shot from 3DMax: Wire Frame For a Sphere in a Three dimensional simulation

The animator also places a camera at coordinates X_3, Y_3, Z_3 telling the software where to look at the scene FROM.

We also want a source of light to illuminate the scene:

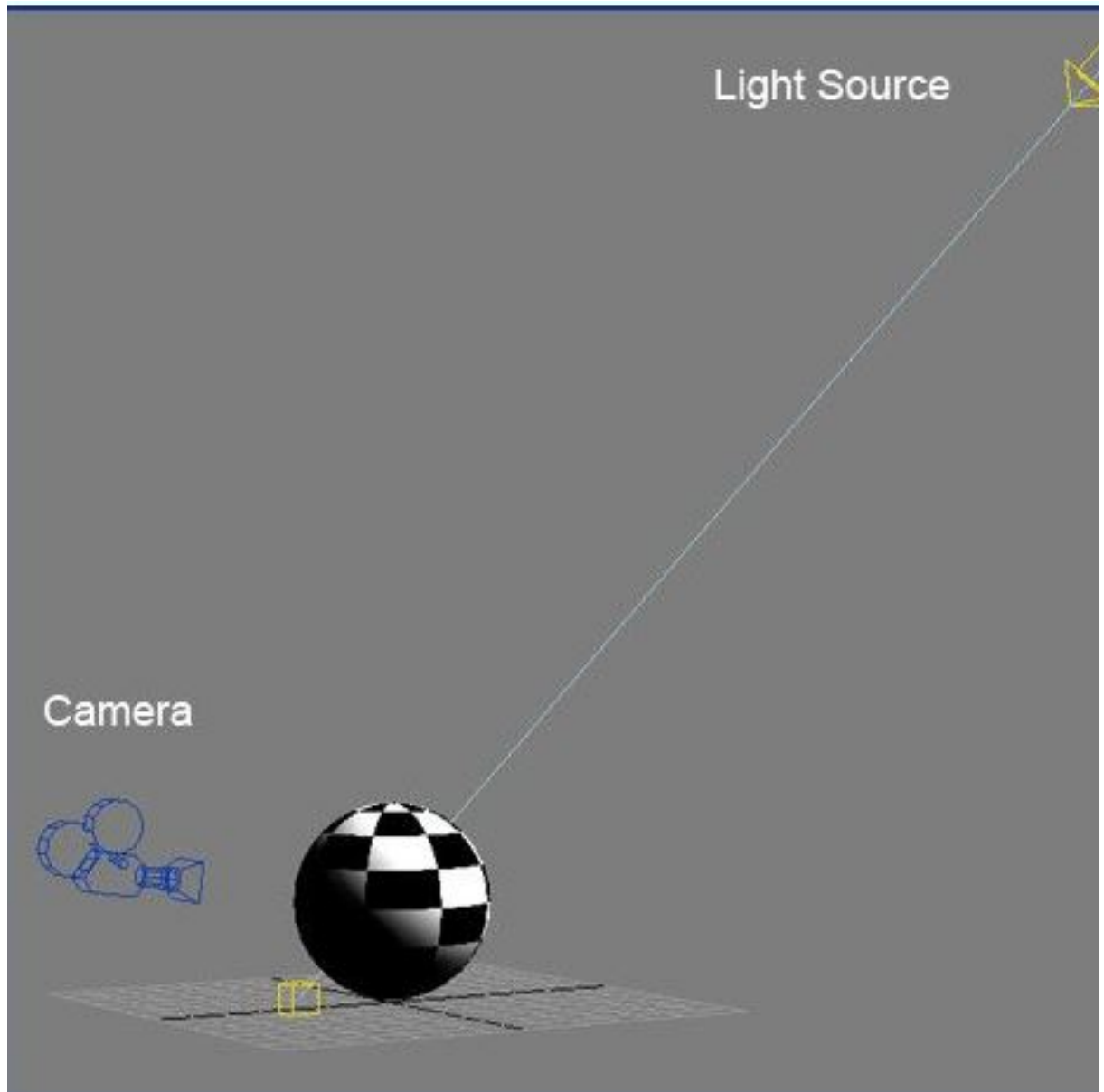


FIGURE 2.3: Screen-shot from 3DMax work panel: A Ball in 3D space, A Camera and A Light Source

When all the parameters are set, the computer then calculates two things (this calculation is called "Rendering"):

- The journey the ball makes from point 1 to point 2: Where exactly should the ball be at each of the 25 frames?
- How each frame looks from the point of view of the camera?

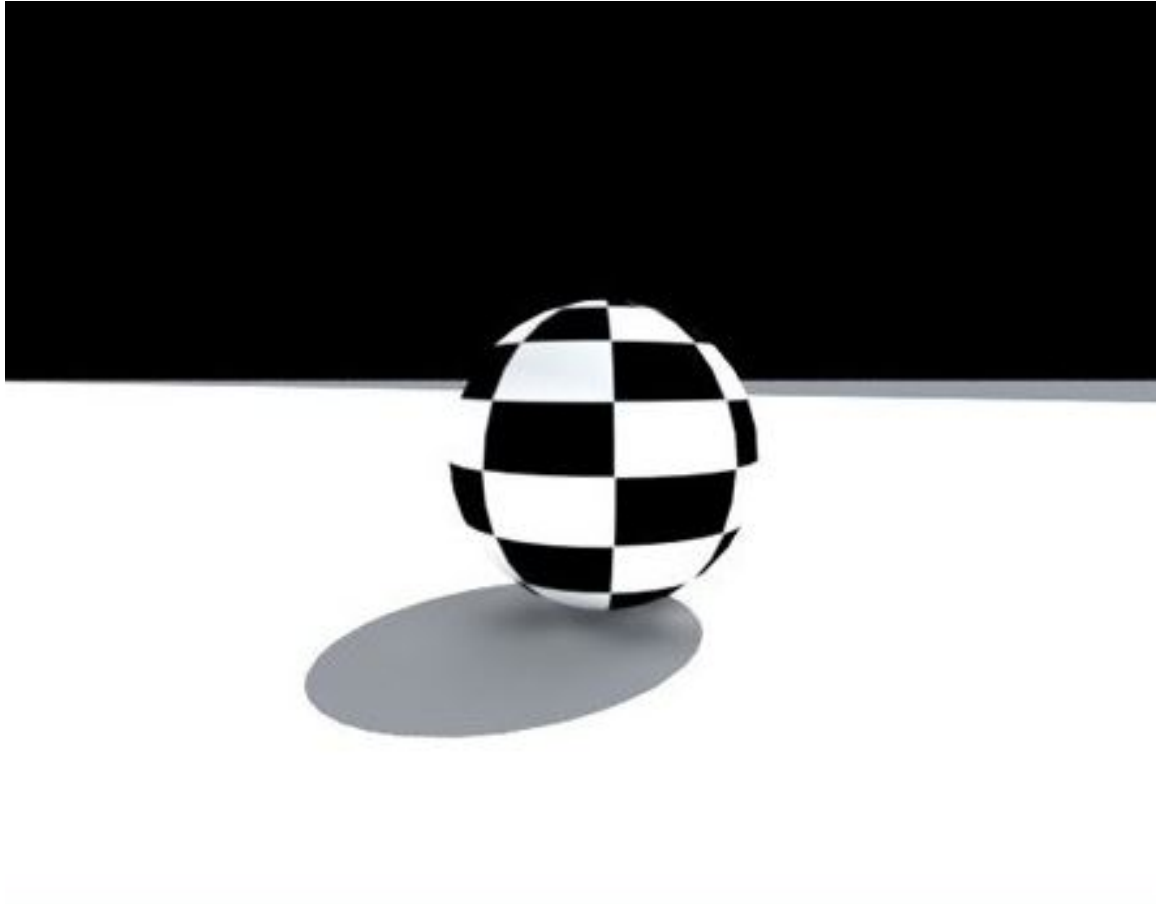


FIGURE 2.4: The Rendered Image

The end result is a sequence of 25 still images of a ball, moving incrementally across the screen. You play them on your DVD at the rate of 25 frames per second, and that, in a nut shell, is how computer animation works.

CHAPTER 3

Ostrich Mobility Instruments Pvt.Ltd.

Date Of Visit: 28/09/16

Venue: Ostrich Mobility Instruments Pvt.Ltd. Bangalore.



FIGURE 3.1: Session about Electronic Wheelchair

OSTRICH MOBILITY was born in 2007 out of their passion for innovations in mechanized mobility. Today, OSTRICH is known for its innovative Mobility Solutions in India and abroad. Infact, so obsessed and stringent they are about true innovation that, out of every ten ideas that emerge in their research labs, on an average only one makes it. Over the years, OSTRICH has redefined the concept of mobility, customization, safety and independence to a whole new level. The market leader in India in powered/electric wheel chairs, OSTRICH is perhaps the only company in the country, which indigenously develops wheelchairs/Mobility scooters specially suited for Indian road conditions.

OSTRICH's relentless focus on bringing innovations to the healthcare segment, resulted in bringing a new product line under the brand of Ostrich Intimate series, dedicatedly for high quality electric beds for home and hospitals. Using their own unique and patented technologies, they have created feature-rich products in every category, which customers have come to rely on and accept as an integral part of their lives. The most innovative and revolutionary suspension technology named "SPLIT Frame Technology", provides comfort and safety in all types of road conditions. Automatic Wheelbase Adjuster is another innovation that helps the user to change the wheelbase based on the surface area and conditions, so that the maneuverability can be enhanced.

OSTRICH understands that every individual is different in their physical conditions and the likings. Perhaps OSTRICH is the only company in the country provides the customization, based on the customer needs, at most cost effective. OSTRICH also provides Onsite Service for customers much to their delight.

3.1 Electrically Powered Wheelchair

Electrically Powered wheelchair (EPW) is a wheelchair that is propelled by means of an electric motor rather than manual power. Motorized wheelchairs are useful for those unable to propel a manual wheelchair or who may need to use a wheelchair for distances or over terrain which would be fatiguing in a manual wheelchair. They may also be used not just by people with 'traditional' mobility impairments, but also by people with cardiovascular and fatigue-based conditions.



FIGURE 3.2: Electrically Powered wheelchair

3.1.1 Controller

Controllers are most commonly an arm-rest mounted joystick which may have additional controls to allow the user to tailor sensitivity or access multiple control modes. The controller may be swing-away to aid in side-transfers. For users who are unable to use a hand controller various alternatives are available such as sip-and-puff controllers, worked by blowing into a sensor. In some cases the controller may be mounted for use by an aide walking behind the chair rather than by the user. Capabilities include turning one drivewheel forward while the other goes backward, thus turning the wheelchair within its own length.

'Thought-control' of powerchairs, actually working by the detection of brain-waves or nerve signals via sensors on the scalp or elsewhere, has been demonstrated in the laboratory environment.



FIGURE 3.3: Typical Joystick Controller

3.1.2 Use

Powerchairs are generally prescribed for use by users who are unable to use a manual wheelchair. However, in both the US (Medicare and some private insurers) and the UK (National Health Service) powerchairs are generally not prescribed to users who have any ability to walk within the home, even if that ability is so functionally constrained as to be practically useless and where the user is unable to use a manual wheelchair independently. Disability rights activists are campaigning for prescription procedures to focus on an individual needs based assessment rather than on inflexible application of prescription rules. The restricted prescribing leads to many users being forced to procure a solution privately, in some cases settling for a powerchair or a mobility scooter that is less than ideal to their needs but which falls within their budget.

The use of powerchairs is not restricted solely to users unable to use manual chairs. Any disabled person with a mobility, fatigue or pain-based impairment or cardiovascular issues may find a powerchair advantageous in some circumstances; however, existing prescription practices generally mean that powerchairs for such use must be privately procured or hired for the occasion.

3.2 Hospital Beds

These beds has a multi-hinged lying surface which can be profiled to a number of different positions. Common adjustments include inclining the upper body and raising the lower body independently of each other. Other common features include height adjustment and tilting the bed to raise the upper body or the lower body into the Trendelenburg or reverse Trendelenburg positions.

The market for motorized adjustable bed bases is expanding, as the mattress industry has begun to heavily promote them to consumers as a comfort and lifestyle choice. Adjustable beds have been used in hospitals for a long time, but have become more commonly used in homecare over the past three decades, as they have been found to provide relief from various conditions. They can help provide a more comfortable sleep for those recovering from surgery, aiding circulation, breathing and swelling. Adjustable beds used in hospitals and homecare are similar in basic functionality



FIGURE 3.4: Ostrich Hospital Bed

CHAPTER 4

CONCLUSION

The various processes through which the products come through before being released into the market were thoroughly explained during the visits. I was able to witness the various processes behind the manufacturing of electronic bed, wheelchair etc, also different test undergone before the manufacturing of animated movies. I visited different laboratories of Ostrich mobility instruments. The visit to ANiFRAMES was a better experience for me, which made me to understand operations in an IT industry. The interactive session with ANiFRAMES employees cleared various doubts regarding the working methodologies of a project in IT sector.