BCA DEPARTMENT OVERVIEW

Bachelor of Computer Applications (BCA) is an undergraduate program that focuses on building software professionals with strong practical and theoretical knowledge in Computer Science. The curriculum provides options for students to choose multiple electives depending on their interest of study. Interdisciplinary Courses on Mathematics, Statistics and Financial management enhance the breadth of domain knowledge. The program is backed by a well-motivated set of teachers and an upgraded lab facility. Students get opportunities to be part of in-house projects/research projects/consultancy projects. The sixth semester project would be a capstone project with deliverables in the form of a project/article/patent. Students with good academic records are encouraged to take up a FAST-TRACK so that they can go for a fulltime industry internship during the sixth semester. Ample opportunities with credit transfers
are available for students who would like to go on a student exchange to foreign universities for a short semester. The BCA degree opens doors to a multitude of career opportunities in the IT industry. Graduates can pursue roles as software engineers, designing, developing, and testing software applications. Their proficiency in programming languages makes them well-suited for web development, where they can create and maintain websites. Database management systems, the backbone of data storage and retrieval, offer career paths in database administration. Networking, the foundation of communication between computers, provides opportunities as network administrators, responsible for designing, installing, and managing computer networks. Security analysts, tasked with safeguarding systems from cyber threats, are in high demand due to the increasing reliance on technology.

Why choose this course?

- High Earning Potential and Diverse Career Opportunities
- Remote Work Opportunities.
- Strong Foundation in Computer Science and Technology
- Strong Communication and Collaboration Skills
- Entrepreneurship and Startup Opportunities
- Personal Growth and Satisfaction

What will you learn?

- Problem-solving skills
- Wesite development
- Application development
- Softskills
- Continuous learning and research
- Data Analysis

Modules:

1st year - Data structures, Programming languages

2nd year - Algorithms, Computer Architecture

3rd Year - Software engineering, Operating system

4th Year - Web development, Artificial Intelligence

Career Prospects:

- Software Developer
- Database Administrator
- Network Administrator
- Data Scientist
- IT Consultant
- Software Tester
- Education
- Government Sector

More details Department of computer science and BCA program:

CHRIST (Deemed to be University), Bangalore. Karnataka, India www.christuniversity.in

Department Overview

Department of Computer Science of CHRIST (Deemed to be University) strives to shape outstanding computer professionals with ethical and human values to reshape nation's destiny. The training imparted aims to prepare young minds for the challenging opportunities in the IT industry with a global awareness rooted in the Indian soil, nourished and supported by experts in the field.

Vision

The Department of Computer Science endeavors to imbibe the vision of the University " **Excellence and Service"** . The department is committed to this philosophy which pervades every aspect and functioning of the department.

Mission

"To develop IT professionals with ethical and human values". To accomplish our mission, the department encourages students to apply their acquired knowledge and skills towards professional achievements in their career. The department also moulds the students to be socially responsible and ethically sound.

Introduction to the Programme

Bachelor of Computer Applications (BCA) is an undergraduate program that focuses on building software professionals with strong practical and theoretical knowledge in Computer Science. The curriculum provides options for students to choose multiple electives depending on their interest of study. Interdisciplinary Courses on Mathematics, Statistics and Financial management enhance the breadth of domain knowledge.

The program is backed by a well-motivated set of teachers and an upgraded lab facility. Students get opportunities to be part of in-house projects/research projects/consultancy projects. The sixth semester project would be a capstone project with deliverables in the form of a project/article/patent.

Students with good academic records are encouraged to take up a fast track so that they can go for a fulltime industry internship during the sixth semester. Ample opportunities with credit transfers are available for students who would like to go on a student exchange to foreign universities for a short semester.

The exit options after the first year with a certificate on "Basic Programming Skills" and the second year with a diploma in "Computer Applications" and a BCA degree after the third year, the program offers a fourth year with a BCA Honours degree with Research as on option is designed for better employment as either as an application developer or developer with research capabilities.

Programme Objectives

This programme is conceptualised and designed based on the strong commitment of the department to provide better quality education to the students. The principal objectives of this course are to:

· Provide strong foundations in fundamentals of computer science and applications for employability and/or further graduation.
· Empower students with competencies in creative thinking and problem solving, interpersonal communication and managerial skills.
· Facilitate overall understanding of the technological development with legal and ethical issues.
· Equip the students in providing professional solutions to real-time problems.

Ethics and Human Values

1. Only proprietary or open source software would be used for academic teaching and learning purposes.
2. Copying of programs from internet, friends or from other sources is strictly discouraged since it impairs development of programming skills.
3. Unique Practical (Domain based) exercises ensures that the students don't involve in code plagiarism.
4. Projects undertaken by students during the course are done in teams to improve collaborative work and synergy between team members.
5. Projects involve modularization which initiates students to take individual responsibility for common goals.
6. Passion for excellence is promoted among the students, be it in software development or project documentation.
7. Giving due credit to sources during the seminar and research assignment is promoted among the students

8. The course and its design enforce the practice of good referencing technique to improve the sense of integrity.
9. Courses involving group discussions and debates on ethical practices and human values are designed to sensitize the students in dealing with customers and members within the organization.

Programme Outcomes:

PO1: Acquire and Apply Knowledge: Ability to understand and apply the fundamental principles, concepts and methods in key areas of Computer Applications and multidisciplinary fields.
PO2: Problem Analysis: Ability to analyze real-time problems using various tools and techniques.
PO3: Design and Development: Ability to design and develop solutions to meet the desired needs.
PO4: State-of-art Technologies: Ability to adapt and apply emerging tools and technologies.
PO5: Entrepreneurship and Innovation: Ability to provide sustainable and innovative solutions for real-time problems.
PO6: Lifelong Learning: Ability to engage in continuous reflective learning in the context of technological advancement.
PO7: Communication and Team Building: Ability to demonstrate effective communication and interpersonal skills.
PO8: Ethics and Social Responsibility: Ability to integrate ethical and human values to become a socially responsible citizen.

Programme Eligibility

- Basic eligibility for the programme is a pass at the +2 level (Karnataka PUC / ISC / CBSE / NIOS / State Boards) from any recognised Board in India.
- Candidates writing the +2 examinations in March-May 2023 may apply with their class X and XI marks.
- Students pursuing International curriculum must note that eligibility is according to AIU stipulations:
- Applicants pursuing IB curriculum must have 3 HL and 3 SL with 24 credits.
- Applicants pursuing GCE / Edexcel must have a minimum of 3 A levels with a grade not less than C.

Programme Structure

Course code	Title of the Course	Type	No of Hrs	Credits
SEMESTER – I				
BCA101-1	FOUNDATIONAL MATHEMATICS	Major Core	3	3
BCA102-1	OBJECT ORIENTED PROGRAMMING USING C++ (CIA Only)	Major Core	6	4

BCA203-1	PRINCIPLES OF SOFTWARE DEVELOPMENT – 1	Major Core	6	5
	OPEN ELECTIVE	MDC	3	3
BCA181-1	ACADEMIC WRITING (CIA Only)	AEC	2	2
BCA261-1	INTRODUCTION TO WEB TECHNOLOGY (CIA Only)	SEC	4	3
	HOLISTIC EDUCATION – I	VAC	1	1
	ENVIRONMENTAL SCIENCE	VAC	1	1
	Total		**26**	**22**
SEMESTER – II				
BCA104-2	DISCRETE MATHEMATICS	Major Core	3	3
BCA105-2	DATA STRUCTURES USING C++ (CIA Only)	Major Core	6	4
BCA106-2	JAVA PROGRAMMING (CIA Only)	Major Core	6	5
	OPEN ELECTIVE	MDC	3	3
BCA182-2	PROFESSIONAL ENGLISH	AEC	2	2
BCA262-2	FULL STACK DEVELOPMENT (CIA Only)	SEC	5	3
	HOLISTIC EDUCATION – II	VAC	1	1
	UNDERSTANDING INDIA	VAC	1	1
	Total		**27**	**22**
Summer Internship of 4 credits in case of Exit				
SEMESTER – III				
BCA107-3	COMPUTER NETWORKS	Major Core	4	4
BCA108-3	OPERATING SYSTEM	Major Core	3	3
BCA109-3	FINANCIAL ACCOUNTING	Major Core	3	3

BCA310-3	MOBILE APPLICATIONS	Major Core	5	4
	OPEN ELECTIVE	MDC	3	3
BCA183A-3	FRENCH	AEC	2	2
BCA183B-3	GERMAN	AEC		
BCA263	INTRODUCTION TO PYTHON	SEC	4	3
	HOLISTIC EDUCATION – III	VAC	1	1
BCA484-3	SUMMER INTERNSHIP	Project		3
SEMESTER – IV				
BCA211-4	GRAPH THEORY	Major Core	4	4
BCA212-4	DOT NET	Major Core	5	4
BCA213-4	PRINCIPLES OF SOFTWARE DEVELOPMENT – 2	Major Core	6	5
BCA314-4	INTERNET OF THINGS	Major Core	5	4
BCA215-4	DATA PROCESSING WITH SPREADSHEET	Major Core	4	2

BCA184A-4	FRENCH	AEC	2	2
BCA184B-4	GERMAN	AEC		
	HOLISTIC EDUCATION – III	VAC	1	1
	Total		**27**	**22**
Summer Internship of 4 credits in case of Exit				
SEMESTER – V				
BCA316-5	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING	Major Core	6	4
BCA317-5	CLOUD COMPUTING	Major Core	6	4
BCA318-5	ADVANCED PYTHON	Major Core	6	4
BCA319E-5	SPECIALIZATION ELECTIVE – 1	Major Core	6	4

BCA485-5	MINI PROJECT		4	4
	Total		**28**	**20**
SEMESTER – VI				
BCA320-6	ADVANCED JAVA	Major Core	6	4
BCA221-6	PRINCIPLES OF DATA SCIENCE	Major Core	4	4
BCA222-6	DESIGN AND ANALYSIS OF ALGORITHM	Major Core	6	4
BCA323-6	CYBER SECURITY	Major Core	6	4
BCA486-6	MAJOR PROJECT		8	4
	Total		**30**	**20**
SEMESTER – VII				
BCA324-7	RESEARCH METHODOLOGY	Major Core	4	4
BCA325-7	DATA ANALYTICS	Major Core	4	4
BCA326-7	DIGITAL IMAGE PROCESSING	Major Core	4	4
BCA487-7	CAPSTONE PROJECT – 1	Major Core	8	4
BCA488-7	RESEARCH PROJECT AND PUBLICATION		12	6
	Total		**32**	**22**
SEMESTER – VIII				
BCA327-8	NEURAL NETWORK & DEEP LEARNING	Major Core	4	4
BCA328-8	BLOCK CHAIN TECHNOLOGY	Major Core	4	4
BCA329E-8	ELECTIVE	Major Core	4	4
BCA489-8	CAPSTONE PROJECT - 2	Major Core	8	4
BCA490-8	RESEARCH PROJECT AND PUBLICATION		12	6
	Total		**32**	**22**
TOTAL CREDITS				

BCA Honors with Research

SEMESTER – VII				
BCA324-7	RESEARCH METHODOLOGY	Major Core	4	4
BCA325-7	DATA ANALYTICS	Major Core	4	4
BCA326-7	DIGITAL IMAGE PROCESSING	Major Core	4	4
BCA491-7	RESEARCH-1 (PROBLEM IDENTIFICATION, DATA COLLECTION AND MODELLING-1	Major Core	8	4
BCA488-7	RESEARCH PROJECT AND PUBLICATION		12	6
	Total		**32**	**22**
SEMESTER – VIII				
BCA327-8	NEURAL NETWORK & DEEP LEARNING	Major Core	4	4
BCA328-8	BLOCK CHAIN TECHNOLOGY	Major Core	4	4
BCA329E-8	HONORS ELECTIVE	Major Core	4	4
BCA492-8	RESEARCH-2 (IMPLEMENTATION AND PUBLICATION)	Major Core	8	4
BCA490-8	RESEARCH PROJECT AND PUBLICATION		12	6
	Total		**32**	**22**

Summary of the programme structure

Category of Course as per UGC	Minimum Credit requirement	
	3 Year UG	4 Year UG
Major (Core)	89	121
Minor	-	-
Multidisciplinary	9	9
Ability Enhancement Course (AEC)	8	8
Skill Enhancement Courses (SEC)	9	9
Value Added Courses common for all UG	6	6
Summer Internship	3	3
Research Project / Dissertation/ Project	8	20
Total	132	176

Minimum Credits to Graduate	
Levels	**Minimum Credits**
UG Certificate	44
UG Diploma	92
3-year UG Degree	132
4-year UG Degree (Honours)	176
4-year UG Degree (Honours with Research)	176

Details about Fees and other details:
1. Admission Registration fee of INR 8000/ (Non-Refundable)
2. Programme fee as per the below table

Year	# Karnataka	Other Indian States	NRI	SAARC / AFRICA / PIO / OCI / ASEAN	Other Foreign Nationals	Time of Payment
1	160,000 INR	180000 INR	270,000 INR	3,700 USD	4,300 USD	Within seven days of the declaration of the Selection Process Result
2	160,000 INR	180,000 INR	270,000 INR	3,700 USD	4,300 USD	On or before March 15, 2026
3	160,000 INR	180,000 INR	270,000 INR	3,700 USD	4,300 USD	On or before March 15, 2027
4	200,000 INR	230,000 INR	340,000 INR	5,000 USD	6,000 USD	On or before March 15, 2028

The fee for Karnataka domicile students, as indicated in the table, is the actual fee payable and excludes the scholarship amount.

It is to be noted that though the fee is fixed for four years, there may be a periodic nominal increase to meet the rise in costs.

1. NRI fee is applicable for the first year for candidates who have studied foreign syllabus (has to be approved by UGC / AIU) in the qualifying examination of study in India. In subsequent years Other Indian States fee will be applicable.
(The above condition is not applicable to NRI and candidates applied under NRI Category).

2. NRI fee is applicable for the full duration of the Programme for candidates who;

2.1. Have pursued and completed their last qualifying exam from outside India.
2.2. Are NRI and candidates who have applied under the NRI category.

3. To claim the Indian category fee, the candidates should have studied last 7 years in India. (Not applicable for OCI, PIO and Foreign Nationals).

4. Admission registration fee of INR 8000/- (US $100 for foreign nationals/PIO/OCI) is non-refundable in the event of cancellation of admission. This fee will be apart from cancellation charges if applicable.

5. All Candidates If "Selected" after appearing for the final selection process, the fee may be paid through the following option:

Payment can be made through Net banking / NEFT / RTGS
Payment / Transfer of fees does not guarantee admission.

For any queries at any given time during the application and admission process, you may contact us through the following Email ID's:

Bangalore Central Campus The Office of Admissions, CHRIST (Deemed to be University), Hosur Road, Bengaluru - 560 029, Karnataka, INDIA Ph. No: +91 92430 80800 Ph. No: +91 80 4012 9400 **Email IDs** Indian candidates: admissions@christuniversity.in NRI candidates: nri.admission@christuniversity.in International: isc.admission@christuniversity.in	**Bangalore Bannerghatta Road Campus** CHRIST (Deemed to be University) Hulimavu, Bannerghatta Road, Bengaluru - 560 076, Karnataka, INDIA Ph. No: 080 4655 1306 Email: admissions.bgr@christuniversity.in
Bangalore Kengeri Campus CHRIST (Deemed to be University) Kanmanike, Kumbalgodu, Mysore Road, Bengaluru - 560 074, Karnataka, INDIA Ph. No: +91 80 6268 9800, 9802, 9820 ,9828 Email: admissions.kengeri@christuniversity.in	**Bangalore Yeshwanthpur Campus** CHRIST (Deemed to be University) Nagasandra, Near Tumkur Road, Bengaluru 560 073, Karnataka, INDIA Ph. No: +91 80 6989 6666 / 6667 Email: admissions.yeshwanthpur@christuniversity.in

Delhi NCR Campus CHRIST (Deemed to be University), Mariam Nagar, Meerut Road, Delhi NCR Ghaziabad - 201003 Ph. No: 1800-123-3212 Email: admission.ncr@christuniversity.in	**Pune Lavasa Campus** CHRIST (Deemed to be University), Christ University Road, 30 Valor Court, PO Dasve Lavasa, Mulshi, Pune - 412112, Maharashtra Ph. No : 1800-123-2009, Email: admission.lavasa@christuniversity.in

Between: Monday to Friday: 09:00 AM to 04:00 PM, Saturday: 09:00 AM to 12:00 PM (Office remains closed on Sundays, Government Holidays and Any special events)

Eligibility criteria to join BCA Program

A pass at the +2 level (Karnataka PUC / ISC / CBSE / NIOS / State Boards) from any recognised Board in India.

Candidates writing the +2 examinations in March-May 2025 may apply with their class X and XI marks.

Students pursuing International curriculum must note that eligibility is according to AIU stipulations:

Applicants pursuing IB curriculum must have 3 HL and 3 SL with 24 credits.

Applicants pursuing GCE / Edexcel must have a minimum of 3 A levels with a grade not less than C.

International Category

Candidates falling under any of the below mentioned categories must apply under the International Student Category:

1. Foreign citizens,
2. PIO card holders and
3. OCI (Dual Citizens)

International students coming from Non-English speaking countries should:

> produce evidence of passing the qualifying examination in English medium or have IELTS 6.0 with no sub-score below 5.5 or TOEFL (paper) 550, TOEFL (computer) of 213 or TOEFL (IBT) of 79 scores

Candidates without the above pre-qualifications will have to enroll either for

Intensive Certificate course in English Language (Full Time) conducted from March to May each year or
One Semester Certificate course in English Language (Part Time) conducted after regular class hours from June to December.

Note: The International Student category fee structure is binding for the full duration of the programme and cannot be transferred /changed in between.

Candidates from the above listed categories having pursued Indian Educational qualification and who may have applied under the Indian States Category will have to pay the International Student Category Fee. The decision of the Admission committee is final.

Candidates seeking admission through International Student category (Foreign Nationals/PIO/OCI) will have a separate application process, with the following options to apply for any programme at Christ University.

Online Application form

Email ID for any clarifications: isc.admission@christuniversity.in

NRI Category

Students are welcome to apply under the Non Resident Indian category for the programmes offered by the University. Application process is common for all category of applicants

Students who fall under any of the following classifications can apply under NRI Student category and be liable to pay the fees applicable to the category for the entire duration of the programme

1. NRI defined under the Indian Income Tax Law

2. Either of the parents is outside India (except Nepal) on Work Permit / Resident Permit.

3. Indian citizen financed by any Institution / agency outside India, even if parents are Residents of India.

4. Indian Citizen who has pursued studies for qualifying examination in any foreign / Indian syllabus outside India..

5. NRI fee is applicable for the full duration of the programme for candidates who;
   5.1. Have pursued and completed their last qualifying exam from outside India.
   5.2. Are NRI and candidates who have applied under NRI category

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Admission to all programmes is based on academic achievement and CHRIST (Deemed to be University) Selection Process. Candidates should submit the final results of class 12 on or before August 30th of the admission year.

Applicants must read through the Selection process, Fee Structure and other details under the preferred programme given on our website before proceeding with the application process.

NRI SELECTION PROCESS VENUE FOR 2025

Computer Science Department Overview

The Department of Computer Science of CHRIST (Deemed to be University) strives to shape outstanding computer professionals with ethical and human values to reshape the nation's destiny. The training imparted aims to prepare young minds for the challenging opportunities in the IT industry with a global awareness rooted in the Indian

Vision

The Department of Computer Science endeavors to imbibe the vision of the University “Excellence and Service”. The department is committed to this philosophy which pervades every aspect and functioning of the department.

Mission

“To develop IT professionals with ethical and human values”. To accomplish our mission, the department encourages students to apply their acquired knowledge and skills towards professional achievements in their careers. The department also molds the students to be socially responsible and ethically sound.

The department was established in the year 1990, with a curriculum in line with industry expectations and research. The department also provides opportunities to work on collaborative projects with industry and international universities, faculty expertise in recent technologies and Alumni support are some of the department highlights. The following programmes are offered by the department;
Undergraduate Programmes
BSc CM-Bachelor of Science (BSc) in Computer Sc, Mathematics / Honours / Honours with Research
BSc CS-Bachelor of Science (BSc) in Computer Sc, Statistics / Honours / Honours with Research
BCA-Bachelor of Computer Applications (BCA) / Honours / Honours with Research
BSc CME-Bachelor of Science (BSc) in Computer Sc, Maths, Electronics
BSc CMS-Bachelor of Science (BSc) in Computer Sc, Maths, Statistics
Postgraduate Programmes
Master of Science (Artificial Intelligence and Machine Learning)
Master of Computer Applications (MCA)
Master of Science (Computer Science and Applications)

Research Programmes
Doctor of Philosophy (PhD) in Computer Science

Message from the HoD

Welcome to the Department of Computer Science at CHRIST (Deemed to be University), Bangalore. We started our journey in the year of 1990. Over the last two decades, focussing on our mission to develop IT professionals with ethical and human values; we have grownup our expertise and competence in the core Computer Science curriculum and research.
We offer undergraduate programmes, postgraduate programmes and the PhD degree in Computer Science. The Department has always endeavoured towards attuning students with the required technical and soft skills, to adapt to the rapid development in the field of IT and research. The primary focus of our curriculum is to impart technical know-how to students, promote problem-solving skills, ignite their research aptitude and trigger the interest in innovation of new technologies. The course contents are periodically updated for introducing new scientific and technological developments. We proffer a good number of certificate courses and training programmes periodically for providing a wide spectrum of options to the students to pursue their interest. Students are encouraged to undertake various research projects, internships, fests and competitions.
Our department maintains active research clusters for carrying out collaborative and interdisciplinary research. Several faculty members serve on the editorial boards and act as reviewers of national and international journals. We regularly organize national and international symposia and conferences. The PhD scholars of the department often conduct webinars and technical talks under the umbrella of the ACM student chapter to be at par with the latest research updates.
Thank you for visiting us.

Dr Ashok Immanuel V (head of computer science department)
hod.computerscience@christuniversity.in

Festivals and Conferences organized by Department of Computer Science:

1. Xebit (Project Exhibition)
2. SoftEx (Softex is a national level project exhibition for young minds to showcase their innovative ideas in different dimensions in the field of computer science. It provides a platform to share knowledge in the emerging technologies.)
3. Techleons (Techleons is an intra-departmental tech fest, put together by the undergraduate students of the Department of Computer Science.)
4. Interface (Extension and outreach program for UnderGraduate students)
5. Gateways (Extension and outreach program for Postgraduate students)

Associations and clubs in the university

1. ACM Student Chapter (Club)
2. Labyrinth (Club)
3. International Students club
4. CS Alumni Chapter

5. WRIT (Women in Research and Information Technology)

Research

The Department of Computer Science is committed to applied, descriptive, experimental and exploratory research. Both Undergraduate and Postgraduate students are involved in identifying and solving significant real-world problems in society through research. The research-inclusive curriculum lays the foundation to gain knowledge to develop intelligent software tools. Faculty and Research Scholars work on various domains such as Networking, IoT, Cloud, AR/VR, Artificial Intelligence/Machine Learning, Cloud computing, Computer vision, Software Engineering, ICT, NLP, Data Science, and Cyber Security with application areas in Healthcare, Business Intelligence, Education, Biomedical, Data Science and Cognitive Sciences.

The department is pioneering in integrating and collaborating knowledge, methods and perceptive from different disciplines to encourage researchers to think beyond the boundaries of their fields. Research activities are also being funded by various government and non-government agencies for societal benefits aligned with SDG goals. The PhD program aims to develop a dynamic researcher which enables them to adapt according to the ever-changing needs in the field of computer science in the years to come.

Placements:

Campus recruitment has been a regular annual activity of the PG department. As a result of the exceptional contribution of CHRIST (Deemed to be University) alumni in various acclaimed companies, the HR personnel of these establishments recruit our students for projects and jobs. These selections are done on the basis of performance in aptitude tests, various HR rounds, interviews and academic performance. Over the years the list of companies that have come to the campus to recruit freshers has grown.

Industry Quotes

1. The HR people say that MCA students of CHRIST (Deemed to be University) are “Regular, competent and helpful” - MPhasis
2. “Matured, responsible, technically competent and well informed. Our experience with them has been very satisfying. They are self motivated and they readily take initiative. They voluntarily take part in organizing various activities in the company. In a short span of time, they have contributed significantly to the projects.” - Merindus Consulting Ltd.
3. “Well prepared and are able to take on and perform quite well the tasks assigned to them. In many cases they have drawn praise from our clients abroad for their excellent work and commitment. They are, today, integrated well into the company and culture and we see them pursuing a career with us.” - Robert Bosch

4. "Very impressive overall performance. Their grounding in the basics is very good. They have shown a very positive attitude. They are also mature, hardworking and an asset to the Company." Think3 Designs India Pvt. Ltd.