CORE DUMP

The Magazine of The Coder

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CREATED BY PARTH
SHIRALKAR

COMMITTEE:

PARTH SHIRALKAR (CHIEF

EDITOR) PRATIK

WAGHELA

FACULTY CO-ORDINATOR:

PROF. SONALI LUNAWAT

LOGO DESIGN BY:

SIDDHARTHBHANDARKAR

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The Magazine Of The Coder

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MORE ABOUT US

Our Vision

To serve the society, industry & all the stake holders through value added Quality Education.

Our Mission

To serve the needs of society at large by establishing state-of –the-art Engineering, Management & Research Institute & impart attitude, knowledge & skills through Quality Education to develop individual & teams with ability to think & analyze right values &self-reliance.

Our Objective

To create aesthetically sensitive, socially committed & technologically competent Engineering & Management Professionals.

Quality Policy

We at PCCOER are committed to impart Value Added Quality Education to satisfy the needs and expectations of the Students and other Stakeholders. We shall achieve this by establishing and strengthening State-of-the-art Engineering and Management Institute through continual improvement in effective implementation of Quality Management System.

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MESSAGE FROM THE HEAD OF DEPARTMENT, TE COMP

Mrs. Bhavini Shah

The Department of Computer Engineering is one of the four pillars of strength of the Pimpri Chinchwad College Of Engineering and Research.

Our Goal is the overall growth and development of the student as a professional as well as a good human being, to motivate the students and for this purpose, the department organizes regular workshops.

We believe in the notion of prioritizing tasks, and give utmost importance to academics, our students are highly skilled, and are wonderfully receptive. We find teaching such students enjoyable.

The department provides a platform for the students to achieve their career goals.
Our students attend camps and seminars in various colleges, and proudly bring back awards.

Not only this, but the Department of Computer Engineering has formed a team of like-minded students, also known as C-Cube (Computer Cosmos Consortium).

As reflected by our academic programmes, student and faculty activities, our department has made a strong and continuing commitment to engage with our students, our colleagues in other academic disciplines, and the expanding circles of our local, regional and international communities.

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SOME OF THE EVENTS CARRIED OUT BY THE DEPARTMENT OF COMPUTER ENGINEERING:

1.**Computer Literacy Program**: Students gave Computer Training to students of Zilla Parishad School (Babanrao Bhondave) on 11th July 2015.

2. C- Cube Inauguration: Established Computer Student association named as "Computer Cosmos Consortium on 25th July 2015. Under this chapter various body members of association were announced and inauguration was done by Mr. Deepak Dalai and Principal Sir.

3. Robotics Seminar By Deepak Dalai on 25th July 2015. He motivated the students to take a step forward in the field of robotics and also explained to the students about the process of designing a robot.

4. Hands-on OSA was held on 8th July 2015.

5. Seminar on " Generating Functions & Recurrence Relations " by **Prof.Dhara Trivedi Kurian, Assistant Professor, RMD's Sinhgad College of Engineering, Warje, Pune**

6. Seminar on "Importance of foreign language" was carried out to make the students aware of the significance of learning foreign languages in the placement process.

8. Seminar on "Advance Data Structures" by Prof. S. P. Bholane, Assistant Professor,   SCOE, Vadgaon on 13/09/2015 for SE Computer Engineering Students. The outcomes of the session were: made the students aware about advance Data Structures concepts, understood concept of Linked List, Mathematical Model.

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ENTRANCE EXAMS

Professor Bhavini Shah (The Head of Department)

Among all the students admitted in engineering, quite a few of you might have decided to take up a job .But some of you might have decided to study further. But for the rest who are not sure what you want to pursue besides taking up a job after four years, we have got you covered! Following are the list of exams that are essential for a post graduate degree admissions. This will help you expand your scope and get a better perspective on all the fields in which you can build a career.

1. GATE : Graduate Aptitude Test in Engineering

GATE is an all India examination that tests the comprehensive understanding of various undergraduate subjects in Engineering and Technology. The GATE score of a candidate reflects a relative performance of a candidate. GATE is administered and conducted jointly by the Indian Institute of Science and seven Indian Institutes of Technology. It will help you pursue your M.E. and M. Tech. (IIT Specific Master's Courses). Apart from that, a good GATE score will be instrumental in procuring Government jobs.

Eligibility: B.E/B.Tech/Masters in Science, Arts, Computer Application or equivalent/ Integrated ME/M.tech/ Professional Society examinations equivalent to BE / B Tech/B Arch(e.g. AMIE/AMICE).

When: GATE is conducted in online as well as offline mode. Online exam is usually in the month of January and Offline in February.

Eligibility: Bachelor's degree in any discipline under the 10+2+4 (or more) system, from any university or institute recognized (by law) in India. Diploma in Design under the 10+2+4 system, from any university or institute recognized (by law) in India.

2. CAT Common Admission Test

It is conducted by IlMs for admissions to various programs in management in India. There are almost 3,335 seats in Ms in India. Eligibility: The candidate must hold a Bachelor's Degree, with at least 50% marks or equivalent CGPA. Candidates appearing for the final year of bachelor's degree/equivalent qualification examination and those who have completed degree requirements and are awaiting results can also apply.

When: The CAT 2016 Application Form will be available during the month of August 2016 through the online mode only on the official website of the CAT 2016. The official website is www.iimcat.ac.in on which the registration form will be announced. The registration will go on till the last week of September 2016. The admit card will be issued through the official site and candidates may get their admit card from mid of October 2016 to till the date of examination.

3. IELTS International English Language Testing System:

It is an international standardized test of English language proficiency for non-native English language speakers. No minimum score is required to pass the test. An IELTS result or Test Report Form is issued to all test takers with a score from "band 1" ("non-user") to "band 9" ("expert user") and each institution sets a different threshold. There is also a "band 0" score for those who did not attempt the test. IELTS Academic is intended for those who want to enroll in universities and other institutions of higher education and for professionals who want to study or practice in an English-speaking country.

Eligibility: Everyone is eligible for taking the IELTS test - there are no restrictions based on age or qualifications. The test scores are valid for two years, i.e., most universities accept scores up to two years old.

When: Computer based IELTS test is held all-round-the-year,

4. GRE :The Graduate Record Examination

It is a popular examination among Indian students aspiring to study in the US or Canada. It is a fairly standardized test that measures the verbal, mathematical and general analytical skills of the candidate. It is an admission requirement for many graduate courses, especially in engineering and the sciences, in the US. **Eligibility:** GRE does not set any age, qualification, timing related pre-requisites. However, there will be a range of eligibility criteria set by universities that accept GRE scores. For each of their programs, they may have minimum age, experience and qualification related filters.

When: there are no specific GRE Exam dates in India. You can take it any time of the year by taking an appointment with the closest GRE exam center. But with this flexibility, there's another issue. During the peak application season (generally around August to December), it may be difficult for you to get an appointment in

your preferred exam center. You'd be forced to book a day and time at another center that may not be close to where you live.

5. GMAT : Graduate Management Admission Test Management aspirants need to take this test, which is an admissions assessment for business colleges. Average GMAT scores are in the range of 570-580. However, for top school admissions a score of at least 700 is almost mandatory. New sections have been introduced recently, such as Integrated Reasoning, which have made the test more competitive than before. **Eligibility: There** are no specific eligibility criteria for GMAT. However, various universities / colleges which accept GMAT scores have their own criteria of admission.

When: GMAT can be taken once every 31 days. This includes test attempts in which the score was cancelled by the candidate.

6. Indian Civil Services

The Civil Services Examination (CSE) is a nationwide competitive examination in India conducted by the Union Public Service Commission for recruitment to various Civil Services of the Government of India, including Indian Administrative Service (IAS), Indian Foreign Service (IFS), Indian Police Service (IPS), Indian Revenue Service (IRS) among others. Indian Engineering Services abbreviated as IES are the civil services that meet the technical and managerial functions of the Government of India.

7. TOEFL

TOEFL is the most prominent test all over the world for the evaluation of skills in English Language. TOEFL or Test of English as a Foreign Language, examines the English language proficiency of English speakers whose native language is not English. The test is given by the students who aspire to study at universities in English-speaking countries. It assesses ability to apply and comprehend English at University level, appraising how well a person combines reading, listening, speaking and writing skills to perform academic tasks.

When :There is no such schedule for TOEFL exam as the exam is conducted all-round the year. Candidates, who want to appear for the exam, can contact the local regional office and schedule the date and time for test.**8. DAT : Design Aptitude Test**

It is an alternative to CEED and is conducted by National Institute of design. NID is one of the top 100 schools for design. Industrial Design, Animation and Motion Graphics, Transportation Design, Interaction Design are a few Master's courses that are offered at NID. NID has campuses In Ahmedabad, Gandhinagar and Bangalore.

When: DAT is held in the month of January, However the last date for enrolling for the exam is in the months of October — November of the previous year.

8. CEED : Common Entrance Test for Design

CEED is an all India examination conducted by the Indian Institute of Technology, Mumbai to assess the candidate's aptitude for design, involving visual perception ability, drawing skills, and logical reasoning, creativity, and communication skills. This examination is something all creative people must consider. It has a brilliant scope in fields like animation, Motion Graphics, Game development. Many Design institutes in India like Shriti (Bangaluru) consider CEED scores along with GRE scores for Master's.

Eligibility: Candidates must either have completed or be expecting to complete any of the following

 (i) Bachelor's degree in Engineering /Architecture/ Design/ Interior Design or equivalent (ii) Master's degree in Arts / Science / Computer Applications The candidate is responsible for showing eligibility while seeking admission to the specific program in which they are interested. Also they should get a minimum of 55% marks in the qualifying exam.

When: CEED is conducted every year in December

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MongoDB: An Introduction

Mahendra Balkrishna Salunke, Asst. Prof. Dept. of Comp. Engg.

MongoDB is an open-source NoSQL-Database developed by 10gen in C++. NoSQL is a new trend in database development and refers generally to databases without fixed schema. Such databases usually have a lower transaction safety but are faster in accessing data and scale better than relational databases. MongoDB is one of the newer NoSQL databases developed in 2009. The database belongs to the category of the document-based databases. The origin of the name "Mongo" is not very clear: Some people think it comes from the English word "hu*mongo*us" (gigantic), other assume its name is based on the character "Mongo" from the movie Blazzing Saddles.

1.1 What is MongoDB?

The MongoDB database consists of a set of databases in which each database contains multiple collections. Because MongoDB works with dynamic schemas, every collection can contain different types of objects. Every object – also called document – is represented as a JSON structure: a list of key-value pairs. The value can be of three types: a primitive value, an array of documents or again a list of key-value-pairs (document).
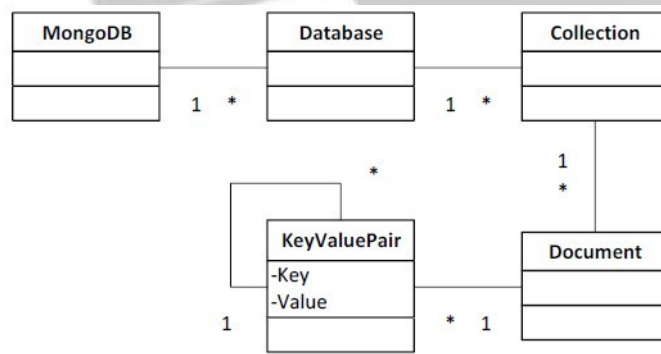

Figure 1: Model of the MongoDB system

To query these objects, the client can set filters on the collections expressed as a list of key- value pairs. It is even possible to query nested fields. The queries are also JSON structured; hence a complex query can take much more space than the same query for a relational database in SQL syntax. If the built-in queries are too limited, it is possible to send JavaScript logic to the server for much more complex queries. MongoDB requires using always the correct type: If you insert an integer value into a document, you have to query for it also with an integer value. Using its string representation does not yield the same result.

The database supports indexes: It is possible to create ascending, descending, unique and geospatial indexes. These indexes are implemented as B-Tree indexes. The "_id" column which can be found in every root document is always indexed.

1.2 Installation

MongoDB can be installed on nearly every operation system. This chapter shows the steps to install the database on Ubuntu and Windows. More information on the installation process can be found on the MongoDB website [14]. If you do not want to install MongoDB, you can use the online shell as well: Go to http://www.mongodb.org and click on "Try it out".

Ubuntu

First install MongoDB with apt:

sudo apt-get install mongodb

Create the default database storage directory:

sudomkdir -p /data/db/ sudochown `id -u` /data/db

After creating the directory, the MongoDB server can be started:

mongod

If the port is already in use, try starting MongoDB with another port using the --port option.
Use the "service" command to start the server as a service:

servicemongodb start

Windows

To install MongoDB on Microsoft Windows, simply install the MongoDB installer. Before starting the server, create the directories "C:/data/db" on your system hard drive. To start MongoDB, open a new command line shell, "cd" to the "bin" directory in the MongoDB directory and start the server with the "mongod" command. The server is now running as long as the command line is opened.

1.3 First steps

The server is now up and running and can be used by clients. There is a client shell which can be started with the "mongo" command. The following call will start the client using the database "benchmark":

mongo benchmark

To use the "mongo" command in Windows, start a new command line shell and browse to the "/bin" directory within your MongoDB installation.

To store the first MongoDB document, use this command:

db.foo.insert({"key" : "value"})

Now you can check if the document has been inserted:

db.foo.find()

The "find" command's output will be something similar to:

{ "_id" : ObjectId("4ebe79742033f11f07fe742e"), "key" : "value" }

1.4 Queries

Queries are built using JSON or in client libraries with a BSON data structure. The following samples show queries written in JavaScript which can be used in the "mongo" shell. On the MongoDB website there is a mapping chart which maps a lot of relational queries to its MongoDB equivalents [15].

Insert

Use the "insert" method to insert a new tuple in a database:

db.myCollection.insert({key1: "value1", key2: "value2"})

If the database "db" or the collection "myCollection" does not exist, it will automatically be created. For every new object an object ID will be generated and stored in the key "_id". Of course it is possible to insert more complex objects (e.g. nested data structures):

db.myCollection.insert({name: "Foo Bar", address: {Street: "Foo", City: "Bar"}})

Read

The stored objects can be read with the "find" method. The following commands return all objects saved in the "myCollection" collection.

db.myCollection.find()

To search for a specific object, limit the number of the result items and get only one column of each document, check out the query below.

db.myCollection.find({lastname: "Meier"}, {firstname: true}).limit(10).skip(20)

The SQL query for the above search looks like:

SELECT firstname FROM myTable WHERE lastname = 'Meier' LIMIT 20,10

MongoDB allows querying the documents with very simple queries. The following query searches in documents which contain an array of loved objects stored in the key "loves". The query returns all persons who love either apples or oranges or both.

db.persons.insert(firstname: "Meier", loves: ['apple', 'orange', 'tomato']) db.persons.find($or: [{loves: 'apple'}, {loves: 'orange'}])

It is very easy to query the data if they have the right structure. In MongoDB there are no joins. References to other documents or objects are usually dereferenced on the client side by lazily querying the referenced documents. There is also a way to do this transparently using DBRefs [16]. It is possible to add references using the ObjectId type:

db.person.insert({firstname: "Meier", mother: ObjectId("...")})

If you access the field "mother" the referenced document will be lazily loaded by the MongoDB driver. This functionality must be supported by the used driver (client library).

Update

The update command works like its relational equivalent: The first argument chooses the tuples to update and the second sets the new values.

db.myCollection.update({id: 123}, {$set : {a : 4}})

Delete

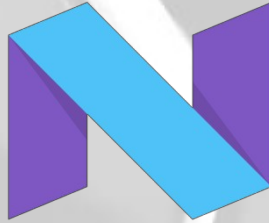To following command will remove all tuples whose first name is "Hans".

db.myCollection.remove({firstname: "Hans"});

Reference:*"MongoDB: An Introduction & Performance Analysis", By Rico Suter.*

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SO WHAT'S NEW?

ANDROID NOUGAT, THAT'S WHAT.

PUT TOGETHER BY PARTH SHIRALKAR, T.E.
COMP.

After much contemplation, the official Google Android 7.0 was named **Nougat**.

For those of you who might not know, Nougat is a family of confections made with sugar or honey and roasted nuts.

Meh. Now, more about the android version.

In every Android update, Google adds something to make your cell phones smoother and better.

One can expect no less from Nougat. Some of the features are highlighted below:

EMOJI
SUPPORT:

Google is giving Android fans 72 new emoji options with Nougat. Many of the new characters have a more human-like appearance, which is a welcome change from the blob-like shape of previous Android emoji.

Split   Screen
Apps:

This means you'll be able to run two apps in split screen mode, making it easier to do things like read an email and edit documents at the same time without having to switch between apps.

Easier App Switching:

You'll be able to jump between the two apps you've used most recently by double tapping the recent apps button. It's a shortcut that eliminates the need to navigate back to the home screen, making it easier to get stuff done.

Better Notifications:

The update gives them a cleaner, sleeker look that makes alerts easier to read at a glance. Plus, there are new ways to customize notifications directly from the lock screen.

More Efficient Battery:

With its last version of Android, called 6.0 Marshmallow, Google added a feature called Doze that kicks your phone into a sleep mode when it's lying still on your desk.

Faster Replies:

When you receive a notification, you'll be able to respond to it directly from the notification tray in Android 7.0 Nougat.

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A LOOK AT ANDROID NOUGAT'S HIGHLY EFFICIENT DOZE MODE

For more, visit: https://www.android.com/versions/nougat-7-0/