

PANIMALAR ENGINEERING COLLEGE(A CHRISTIAN MINORITY INSTITUTION)
JAISAKTHI EDUCATIONAL TRUST

ACCREDITED BY NATIONAL BOARD OF ACCREDITATION

**TECH NEWS**

HALF YEARLY NEWSLETTER FROM COMPUTER SCIENCE AND ENGINEERING

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DEPARTMENT VISION

To provide an academically conducive environment for individuals to develop as technologically superior, socially conscious and nationally responsible citizens.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

To impart and disseminate sound knowledge to the students on the fundamentals of mathematics and advanced fields of computer science and inter related disciplines to solve simple and complex engineering problems and train them to achieve sustainable growth in their professional career.

To enhance the ability of students to evaluate the specific requirements of software industry and provide innovative engineering solutions and efficient product designs.

To facilitate the students to make use of their technical competency to identify and develop appropriate product design, development, testing, maintenance, analysis of problems and provide corrective measures.

To enable the students to develop strong leadership qualities with aggressive optimism, multidisciplinary skills, excellent communication skills and function as effective and reliable team members giving importance to professional and ethical principles.

To inculcate in the students to associate in social networking, pursue continued learning of the latest developments in computer science and involve in higher research and contribute to the development of software industry and related engineering fields.

PROGRAM SPECIFIC OBJECTIVES (PSOS)

PSO 1: To inculcate technical skills to analyze, design and implement software's related to algorithms, networking, web services, multimedia, big data analytics and recent topics of varying complexity.

PSO 2: To develop the capability to comprehend and solve the interdisciplinary problems through appropriate technology with the understanding of contemporary business environment.

PSO 3: To develop an ability to utilize the latest technology and platforms to become a triumphant professional, successful entrepreneur and an urge for pursuing higher studies.

DEPARTMENT MISSION

To develop our department as a center of excellence, imparting quality education, generating competent and skilled manpower. We prepare our students with high degree of credibility, integrity, ethical standards and social concern. We train our student to develop to devise and implement novel systems, based on Education and Research.

PROGRAM OUTCOMES(POS)

Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems

Problem analysis: Identify, formulate, research literature, and analyze complex engineering Problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations

Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the to provide valid conclusions.

Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the Professional engineering practice.

Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings

Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

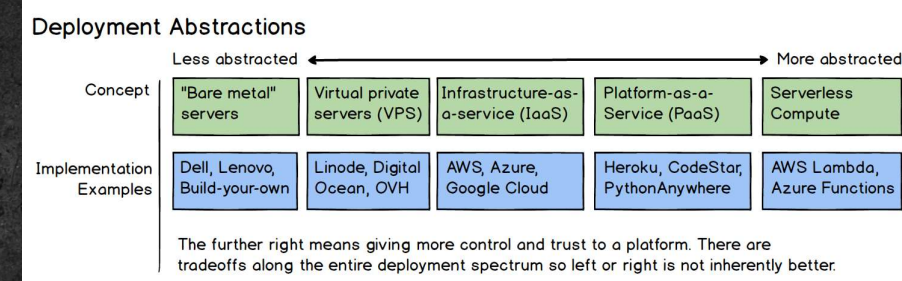
Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

SERVERLESS PYTHON APPLICATION - A SHORT INTRODUCTION**BY R.MOHAMMED RIYAZ, FINAL CSE**

Serverless is a deployment architecture where servers are not explicitly provisioned by the deployer. Code is instead executed based on developer-defined events that are triggered, for example when an HTTP POST request is sent to an API a new line written to a file.

Servers still exist to execute the code but they are abstracted away from the developer and handled by a compute platform such as Amazon Web Services Lambda or Google Cloud Functions.

Think about deploying code as a spectrum, where on one side you build your own server from components, hook it up to the internet with a static IP address, connect the IP address to DNS and start serving requests. The hardware, operating system, web server, WSGI server, etc are all completely controlled by you. On the opposite side of the spectrum are serverless compute platforms that take Python code and execute it without you ever touching hardware or even knowing what operating system it runs on.

**Serverless implementations**

Each major cloud vendor has a serverless compute implementation. These implementations are under significant active development and not all of them have Python support.

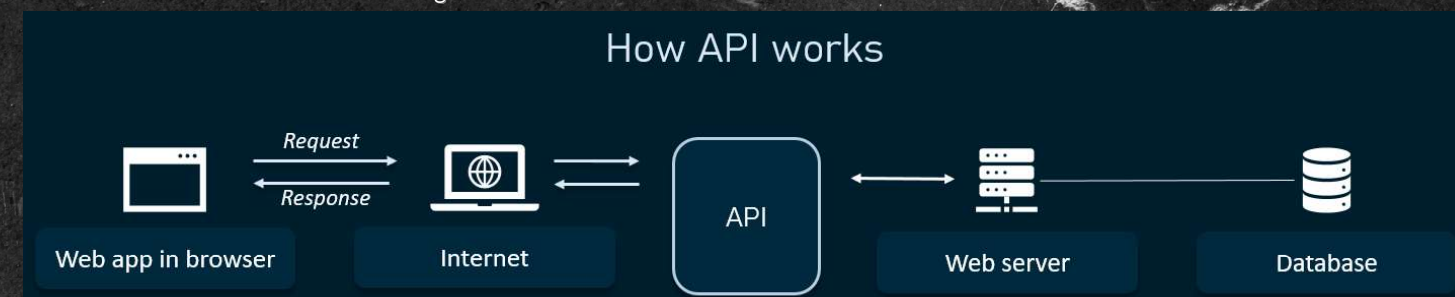
- AWS Lambda is the current leader among serverless compute implementations. It has support for Python 3.x.
- Azure Functions has second-class citizen support for Python. It's supposed to be possible but kind of hacky at the moment. Polyglot support should be quickly coming to Azure to better compete with AWS Lambda.
- IBM Bluemix OpenWhisk is based on the Apache OpenWhisk open source project.
- Google Cloud Functions has native Python 3.x runtimes.
- Webtask.io started as a JavaScript service but now also has a Python runtime as well.

Frameworks for building Python-based applications on serverless services include:

- Serverless (source code), which is a useful but generically-named library that focuses on deployment and operations for serverless applications.
- Zappa provides code and tools to make it much easier to build on AWS Lambda and AWS API Gateway than rolling your own on the bare services.
- Chalice (source code) is built by the AWS team specifically for Python applications.

APPLICATION PROGRAM INTERFACE**BY J.PRINCY, THIRD CSE**

An API is a set of programming code that enables data transmission between one software product and another. It also contains the terms of this data exchange. And the interface by which these two applications communicate is what the API specifies.



Application programming interfaces consist of two components:

- Technical specification describing the data exchange options between solutions with the specification done in the form of a request for processing and data delivery protocols
- Software interface written to the specification that represents it

The software that needs to access information (i.e., X hotel room rates for certain dates) or functionality (i.e., a route from point A to point B on a map based on a user's location) from another software, calls its API while specifying the requirements of how data/functionality must be provided. The other software returns data/functionality requested by the former application.

APIs are sometimes considered contracts, where documentation is an agreement between the parties: "If party first sends a remote request structured a particular way, this is how the second party's software will respond."

Each API contains and is implemented by function calls – language statements that request software to perform particular actions and services. Function calls are phrases composed of verbs and nouns, for example:

- Start or finish a session
- Get amenities for a single room type
- Restore or retrieve objects from a server.

CODE QUIZ

BY S TASNEEM SULTANA, FINAL CSE

1. What is the output of following program?
using namespace std;
int x = 5;
int &f() {
 return x;
}
main() {
 f() = 10;
 cout<<x;
}
2. In the following program test() is overloaded..
void test(int x) {
}
void test(signed x) {
}
main() {
}
3. What is the size of the following union definition?
union abc {
 char a, b, c, d, e, f, g, h;
 int i;
};
4. What is the output of the following program?
#include<iostream>
using namespace std;
main() {
 float t = 2;
 switch(t) {
 case 2:
 cout<<"Hi";
 default:
 cout<<"Hello";
 }
5. What is the output of the following program?
#include<iostream>
using namespace std;
main() {
 const int a = 5;
 a++;
 cout<<a;
}
6. What is the output of following program?
#include<iostream>
using namespace std;
main() {
 char *s = "Fine";
 *s = 'N';
 cout<<s<<endl;
}

ANSWERS

1. 10 (A function can return reference, So it can appear on the left hand side of the assignment operator.
2. No, as both the functions signature is same. (int and signed int are same)
3. Memory Size 4 (union size is biggest element size of it. All the elements share common memory.)
4. Error, switch expression can't be float value
5. Compile error - constant variable cannot be modified.
6. Runtime Error - *s='N', trying to change the character at base address to 'N' of a constant string leads to runtime error.

AN INTRODUCTION TO NEO4J

BY JACULIN C, ASSISTANT PROFESSOR, CSE

Neo4j is one of the open source **Graph Databases** and Cypher Query Language (CQL). Neo4j. It is written in Java Language.

A **graph** is a pictorial representation of a set of objects where some pairs of objects are connected by links. It is composed of two elements - nodes (vertices) and relationships (edges).

Graph database is a database used to model the data in the form of graph. In here, the nodes of a graph depict the entities while the relationships depict the association of these nodes. Neo4j is a popular Graph Database. Other Graph Databases are Oracle NoSQL Database, OrientDB, HypherGraphDB, GraphBase, InfiniteGraph, and AllegroGraph.

Nowadays, most of the data exists in the form of the relationship between different objects and more often, the relationship between the data is more valuable than the data itself.

Relational databases store highly structured data which have several records storing the same type of data so they can be used to store structured data and, they do not store the relationships between the data. Unlike other databases, graph databases store relationships and connections as first-class entities.

The data model for graph database is simpler compared to other databases and, they can be used with OLTP systems. They provide features like transactional integrity and operational availability.

Advantages of Neo4j

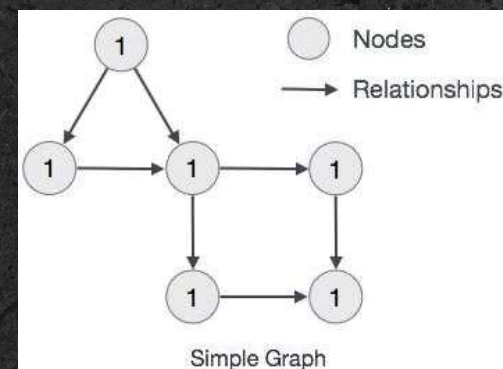
- **Flexible data model** – Neo4j provides a flexible simple and yet powerful data model, which can be easily changed according to the applications and industries.
- **Real-time insights** – Neo4j provides results based on real-time data.
- **High availability** – Neo4j is highly available for large enterprise real-time applications with transactional guarantees.
- **Connected and semi structured data** – Using Neo4j, you can easily represent connected and semi-structured data.
- **Easy retrieval** – Using Neo4j, you can not only represent but also easily retrieve (traverse/navigate) connected data faster when compared to other databases.
- **Cypher query language** – Neo4j provides a declarative query language to represent the graph visually, using an ascii-art syntax. The commands of this language are in human readable format and very easy to learn.
- **No joins** – Using Neo4j, it does NOT require complex joins to retrieve connected/related data as it is very easy to retrieve its adjacent node or relationship details without joins or indexes.

Neo4j uses Native GPE (Graph Processing Engine) to work with its Native graph storage format.

The main building blocks of Graph DB Data Model are –

- Nodes
- Relationships
- Properties

Following is a simple example of a Property Graph.



In this Nodes represented using Circles. Relationships are represented using Arrows. Relationships are directional. We can represent Node's data in terms of Properties (key-value pairs). In this example, we have represented each Node's Id property within the Node's Circle.

TOP CLOUD PROVIDERS

BY ELAMATHY S, SECOND CSE

Earlier the data was stored in hard drives which were not reliable and secure as the drive can access by anyone.

Today the cloud computing services have replaced search hard drive technology and came with a new concept called cloud technology in which the data store in the cloud.

Services Provided by Cloud Providers

1. Software as a Service (SaaS)

Software as a service, a cloud service provided by the cloud company. In SaaS, a customer provides software which can be either for a particular amount of time or for the lifetime. SaaS utilizes the internet and delivers the application to the customer.

2. Platform as a Service (PaaS)

Platform as a service is a framework for the developer where they can create an application for customizing the previously built application. This service also provided through the means of internet and here all the management is done by the enterprise or any third party provider.

3. Infrastructure as a Service (IaaS)

Infrastructure as a service, help the customer to access and monitor things like computer, networking, and other services. In IaaS, the customer can purchase resources on demand rather than buying hardware which is costly and hard to maintain.

Leading cloud providers

Amazon Web Services (AWS): AWS provides services such as compute power, database storage, content delivery and many other functions which help to integrate a business. AWS services are flexible, scalable, and reliable. There is no upfront cost and the customer has to pay only for what they have used.

ServerSpace Cloud Servers: These are Cloud Servers with Windows & Linux OS. At ServerSpace Cloud Servers, user can choose their own custom configurations, spin up their VM in 40 sec, change the configuration at any time and pay as you go. Unlimited traffic, High-end performance and 24/7/365 human tech support.

Microsoft Azure: Microsoft Azure is a cloud computing service which is used for building testing deploying and managing the application. This process is done in a global network of the Microsoft-managed data centre. It is private as well as a public cloud platform. With the help of Azure, it is easy for developers and IT professionals to manage and deploy their applications and services.

Google Cloud Platform: Google cloud platform is offered by Google and it runs on the same infrastructure that Google uses for its end-user products. The Google cloud platform is basically used for Google search and YouTube. There are various services offered by Google Cloud such as data analysis, machine learning, and data storage.

IBM Cloud Services: IBM cloud eliminates the complex problem and the problems which face by large companies. IBM Cloud computing services are also helping home appliance manufacturer, retailer, and medical supply businesses. It uses in because it offers the best services with the price as low as possible.

Adobe Creative Cloud: Adobe creative cloud provides the best experience of apps services design photography and web. It consists of many applications and services that provide access to a collection of software which uses for video editing, web development, photography, and graphic designs.

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Ms.S.Sushma won **Second Prize** in National Level- Paper Presentattion conducted by **Sri Sai Ram Institute Of Technology.**

Ms. N.R.Manasa won **Second Prize** in National Level- Paper Presentattion conducted by **Sri Sai Ram Institute Of Technology.**

Ms. Sharon A Ratna a won **Second Prize** in National Level- Paper Presentattion conducted by **Sri Sai Ram Institute Of Technology.**

Ms. N.R.Manasa won **Third Prize** in National Level- Paper Presentattion conducted by **Meenakshi Sundararajan Engineering College.**

Ms. Sharon A Ratna won **Third Prize** in National Level- Paper Presentattion conducted by **Meenakshi Sundararajan Engineering College.**

Ms.K. Yuvarani won **Second Prize** in National Level- Paper Presentattion conducted by **Dr.M.G.R Educational And Research Institute.**

Ms. S.Trisha Kanna won **Second Prize** in National Level- Paper Presentattion conducted by **Dr.M.G.R Educational And Research Institute.**

Ms. S.Kalaiselvi won **Third Prize** in National Level- Paper Presentattion conducted by **Sri Muthukumaran Institute Of Technology.**