**Objective**

In Today’s world almost, every server is operated from Cloud. Over the last few years, it has witnessed a drastically increase in Usage. As the usage of this service is increasing, the security risk is also increasing with it. This project aims to explore different aspects of Cloud Security. We emphasis on the risk, threat and Vulnerabilities of cloud computing that could possibly be the obstacle for the increasing adoption of cloud computing.

Section I, we focus on the very basics of cloud computing, how they work, the evolution of cloud computing in the tech industry and why the tech industry moving towards cloud computing. Section II, we explore and gain knowledge on security protocols and mechanisms of the cloud computing. In Section III, we start analyzing the threats and vulnerabilities of the cloud computing.

**Section: I**

What is Cloud computing and what are the types of Cloud Computing?

In past most the servers were deployed in a physical datacenter and configured as per requirements. But now those scenarios are changed, because of the cloud computing. Cloud computing refers to the resources that are available to the user from anywhere, flexible, and scalable, secure, and cost efficient.

**NIST definition of cloud computing** Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.[3] There are so many other meanings or definition’s available for cloud computing. As per IT user that delivery of computing, storage, and applications over the Internet from centralized data centres. For application developers, it’s an Internet-scale software development platform and runtime environment. For infrastructure providers and administrators, it’s the massive, distributed data canter infrastructure connected by IP networks.[2]

There are 3 types of cloud that are mostly use:

1. Public cloud
2. Private cloud
3. Hybrid cloud

There are 3 types of services that are available in cloud:

1. Infrastructure as a Service (IaaS)
2. Platform as a Service (PaaS)
3. Software as Service (SaaS)

Cloud will be driven self-service, simplification, standardization, economies of scale, and technology advancement [1].

Are those resources coming from the Sky?(Functioning of cloud computing)

**Reference:**

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2. Geng Lin, David Fu, Jinzy Zhu, and Glenn Dasmalchi, "Cloud Computing: IT as a Service," \*IT Pro\*, vol. 11, no. 2, Mar./Apr. 2009.
3. Zhang, Q., Cheng, L., & Boutaba, R. (2010). Cloud computing: state-of-the-art and research challenges. J Internet Serv Appl, 1, 7–18. DOI: 10.1007/s13174-010-0007-6.