PC 641 – M. Sc. (IT) INTERNSHIP

INTERNSHIP PROJECT REPORT 2019

Internship Start Date: January 2, 2019 **Internship End Date:** May 31, 2019

Mentor:

Miss Vidhi Patel
System Engineer,
Tata Consultancy Services Limited, Pune.
vidhiben.patel@tcs.com

Company Details:

Sahyadri Park
Plot No. 2 & 3, Rajiv Gandhi Infotech Park
Hinjawadi-Maan, Phase 3
Pune, Maharashtra 411057

Company Website:

https://www.tcs.com/

Submitted To: Dr. Manish Khare **Submitted By:** Shashank Dhyani (201712010)

INTRODUCTION

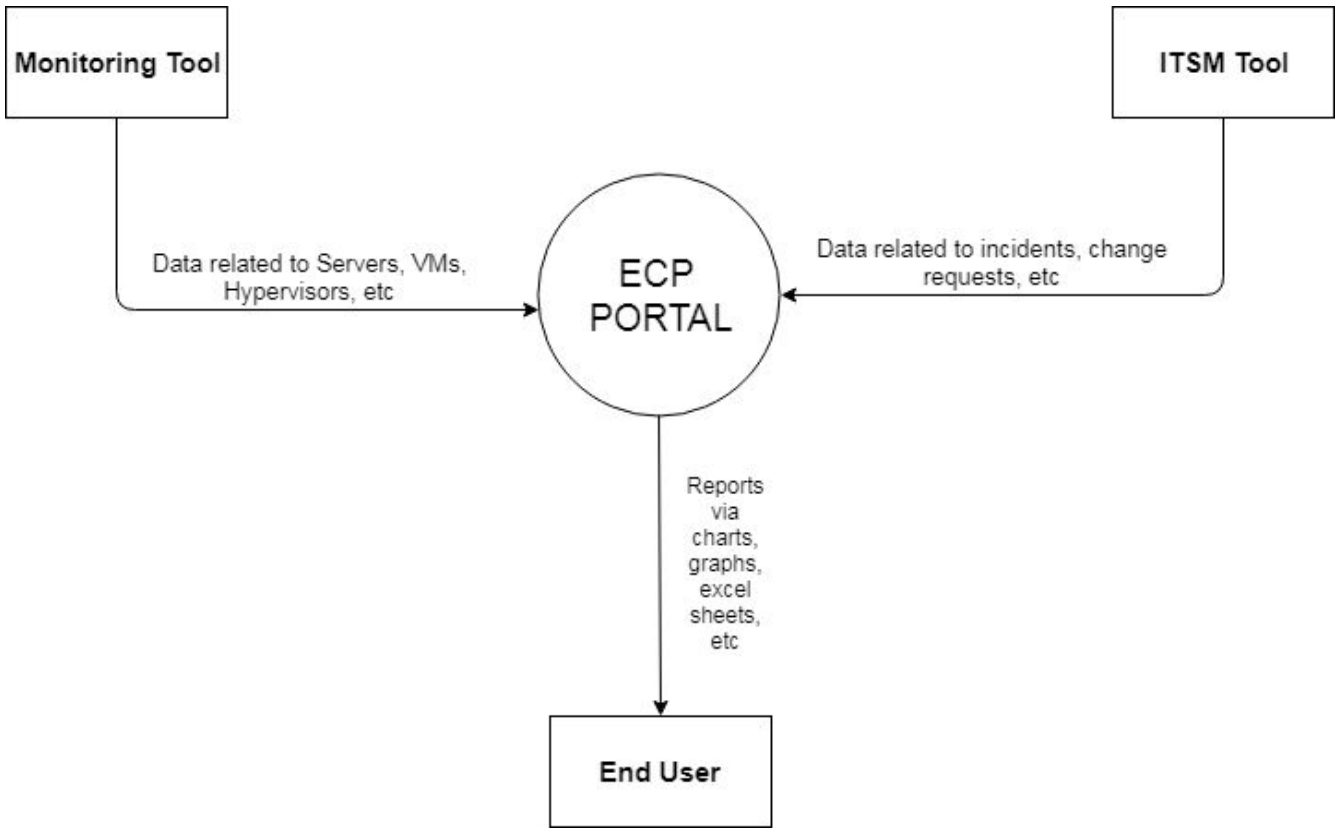
I am undertaking my internship in Tata Consultancy Services Limited for a time duration of January 2, 2019 to May 31, 2019. I have been assigned to a project under Cloud Infrastructure Unit (CIU) as a role of backend developer intern.

TCS have recently entered into the foray of hybrid cloud to make their customers harness greater agility and scalability as similar to a public cloud and improved visibility, control and enhanced security as similar to a private cloud. Thus it could help in leveraging a highly automated system that allows customers to efficiently manage pools across all stacks of used resources. So to streamline this entire vision, TCS introduced a platform named as Enterprise Cloud Platform (ECP). It is a ready-to-deploy solution for enterprises looking for hybrid cloud-based IT. Its open architecture and robust container services allow companies to implement their own applications on cloud, without incurring massive spends on home-grown platforms.

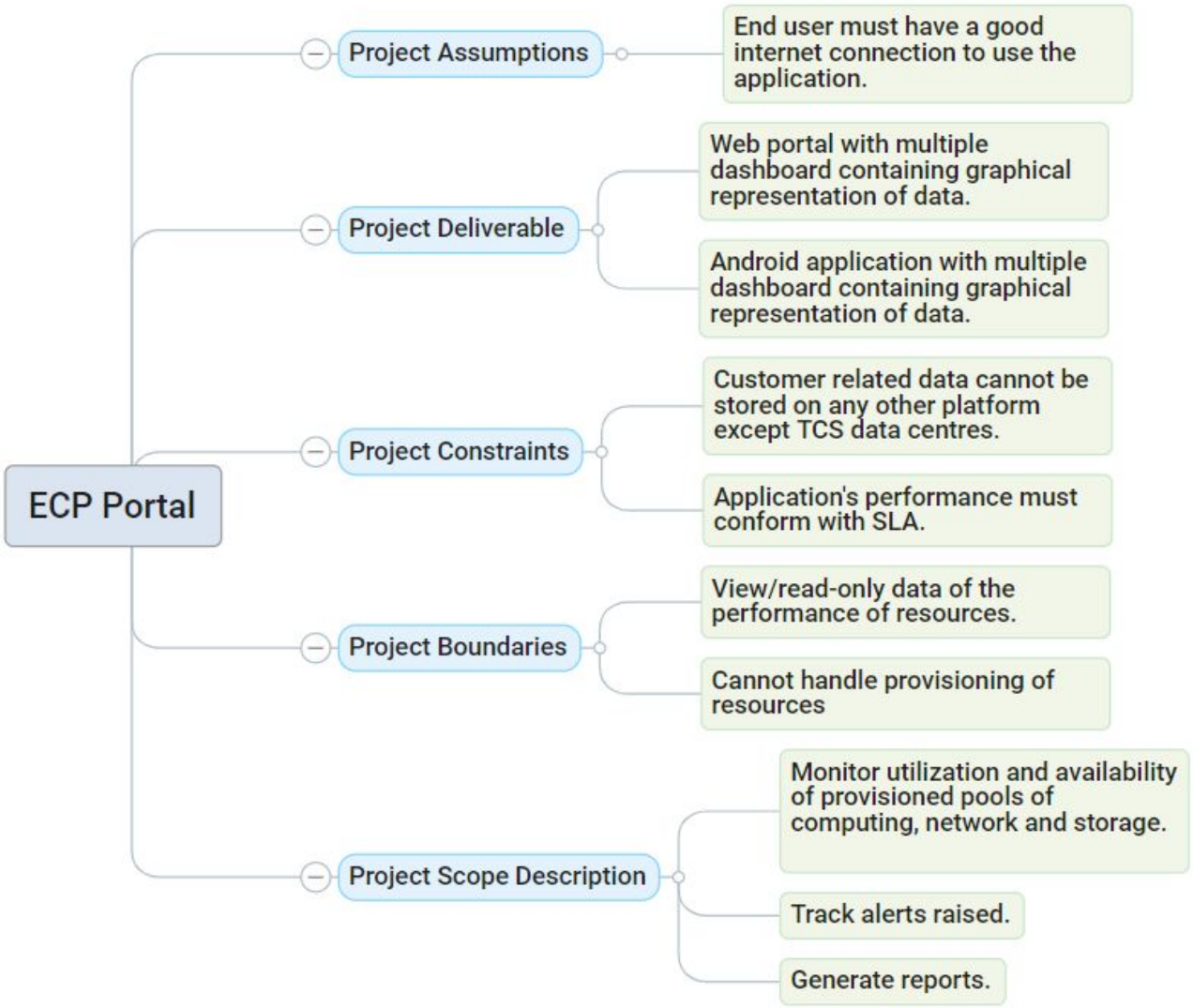
My work as a backend developer intern is to develop services as per requirements for the ECP Portal. ECP Portal is a platform to monitor provisioned pools of hardware resources and statistics related to alerts/incidents. It has several dashboards each giving an overview about different parameters such as availability and utilization for whole stack. The data is fed into these dashboards with the help of a monitoring tool to quickly detect, diagnose, and resolve performance issues. Data with respect to alerts/incidents raised and resolved is retrieved from a IT Service Management (ITSM) tool.

CONTEXT DIAGRAM

Following is the context diagram depicting the high-level process of ECP Portal system.



SCOPE STATEMENT



TATA CONSULTANCY SERVICES

USE CASES

- There are three different types of end-users for this system.

    1. Customer
    2. Service Delivery Manager
        - Based on particular data centre.
        - Based on particular customer.
        - Based on particular region.
    3. Admin/Higher Management

1) End-user will monitor every resource usage as per viewing rights

- Will view storage resources availability and can generate report.
  - Daily
  - Weekly
  - Monthly
  - Annually

- Will view memory resources utilization and can generate report.
  - Daily
  - Weekly
  - Monthly
  - Annually

- Will view network resources utilization and availability and can generate report.
  - Daily
  - Weekly
  - Monthly
  - Annually

- Will view computing resources utilization and availability and can generate report.
  - Daily
  - Weekly
  - Monthly
  - Annually

2) End-user will track incidents.

- Can view statistics related to incidents.
  - Number of incidents raised and resolved.
    - Daily
    - Weekly
    - Monthly
    - Annually
  - Can view incident details.

- Can view statistics related to change requests.
  - Number of change request raised and resolved.
    - Daily
    - Weekly
    - Monthly
    - Annually
  - Can view change request details.

- Can view statistics related to service requests.
  - Number of service request raised and resolved.
    - Daily
    - Weekly
    - Monthly
    - Annually
  - Can view service request details.

PROGRAMMING CONTRIBUTION

- I worked as a backend developer in this project. Backend in this project is developed using Spring Boot and Hibernate. As I did not have prior experience with these frameworks, I learned about it and developed some small dummy projects to understand internal working.

- As and when I felt confident about my learning, I started to develop web services as per requirements in this project.

- These web services mainly fetches data from SQL database hosted on different environment. These databases contain project-relevant fields which are migrated from monitoring tool database using SQL Server Integration Services (SSIS) in an interval of half an hour regularly. Hence, the data processed by these services are then passed to get rendered on UI.

- Data related to incidents/alerts are fetched from APIs provided by ITSM tool.

- Implemented caching mechanism.

- Created queries to fetch data from the database of monitoring tool.

TOOLS, TECHNOLOGIES, APIs AND LIBRARIES USED

- Spring Boot
- Hibernate
- Spring Tool Suite (Eclipse plugin)
- Postman
- APIs provided by ITSM tool
- JDK
- SQL Server Management Studio
- IBM Lotus Sametime

TESTING STRATEGIES

- The testing strategy that I undertook was unit testing. It was done with the help of a tool called Postman.
- As soon as I develop a web service, the HTTP request was simulated in the environment of Postman and the correctness of response was measured based on the desired output.

LESSON LEARNT

- Learnt to work by using Spring framework.
- To work in a professional manner.
- To be able to work in a team.
- Learnt how to understand, debug and work on the existing code which consists of various integrated technologies and libraries.