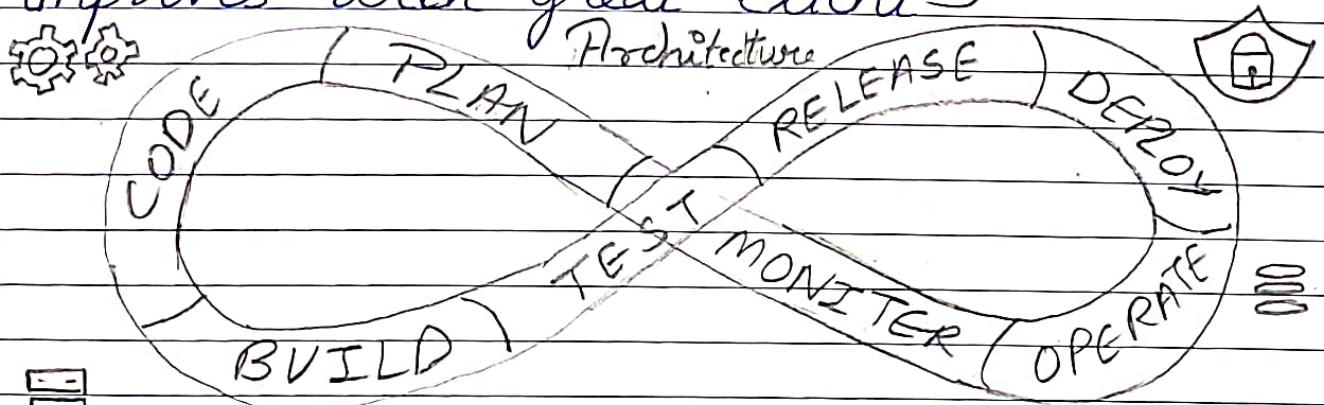# Experiment - 1

<u>Aim</u>: To understand DevOps, principles, practices & DevOps roles & responsibility

<u>Theory</u>:

a. DevOps is the combination of 2 words, one is Development & other operations. It is a culture to promote development & operations collectively.

b. DevOps helps increase organisation speed to deliver applications & services. It allows to serve customers better & compete more strongly

c. It can also be defined as a sequence of development & IT operations with better communication & collaboration.

d. It is one of the most valuable business disciples for enterprises or organisations with help of DevOps, quality & speed improves with great extent

Architecture

i. **Built**
Without DevOps, resource consumption is pre-defined with fixed software with DevOps, cloud usage & resource sharing optimize allocation based on needs

ii. **Code**
Version systems like Git help track changes revert to previous versions & organise code efficiently for reuse

iii. **Test**
Manual testing takes time, whereas automation speeds up the process reducing deployment time & eliminating manual errors

iv. **Plan**
Agile methodology aligns development and operations improving productivity & work organization

v. **Moniter**
Continous monitering detects failure tracks system health & uses tools like splunk for log analysis

vi. **Deploy**
Automated schedulers & cloud management platforms optimize deployment & provide insights via dashboards

vii. **Operate**
DevOps foster collaboration b/w development & operation teams throughout

viii. **Release**

Automation supports deployment but production releases often require manual intervention to minimize customer impact

e. Principles
   i. Collaboration
   ii. Data based decision making
   iii. Customer centric decision making
   iv. Constant improvement
   v. Responsibility throughout life cycle
   vi. Automation
   vii. Failure as learning opportunity

f. Advantages
   i. Faster development & deployment
   ii. Quick response to market changes
   iii. Reduced software delivery time & costs
   iv. Clearer product development & delivery
   v. Enhanced customer experience & satisfaction
   vi. Simplified Collaboration with cloud based tools
   vii. Encourages teamwork & improves productivity

g. Disadvantages
   i. Shortage of skilled DevOps professionals
   ii. High Development Costs
   iii. Difficult to integrate into industry
   iv. Lack of DevOps knowledge hinders automation project

Conclusion : Hence, we've known what DevOps is & its advantages & disadvantages