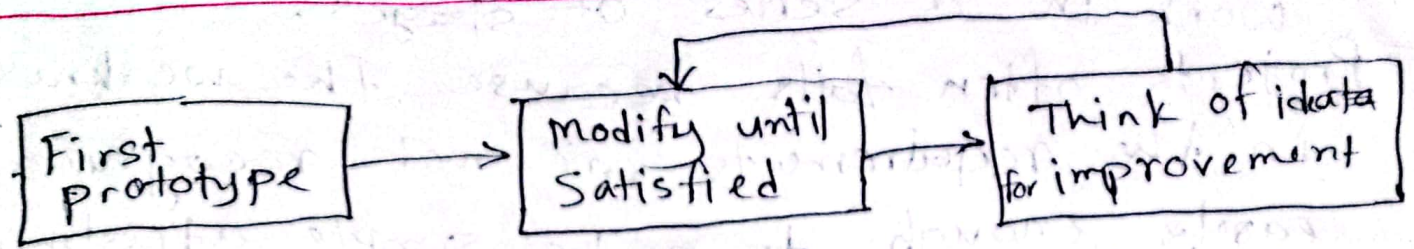


Waterfall Model

Project Management: Systematic organization and coordination of resources to achieve project objectives.

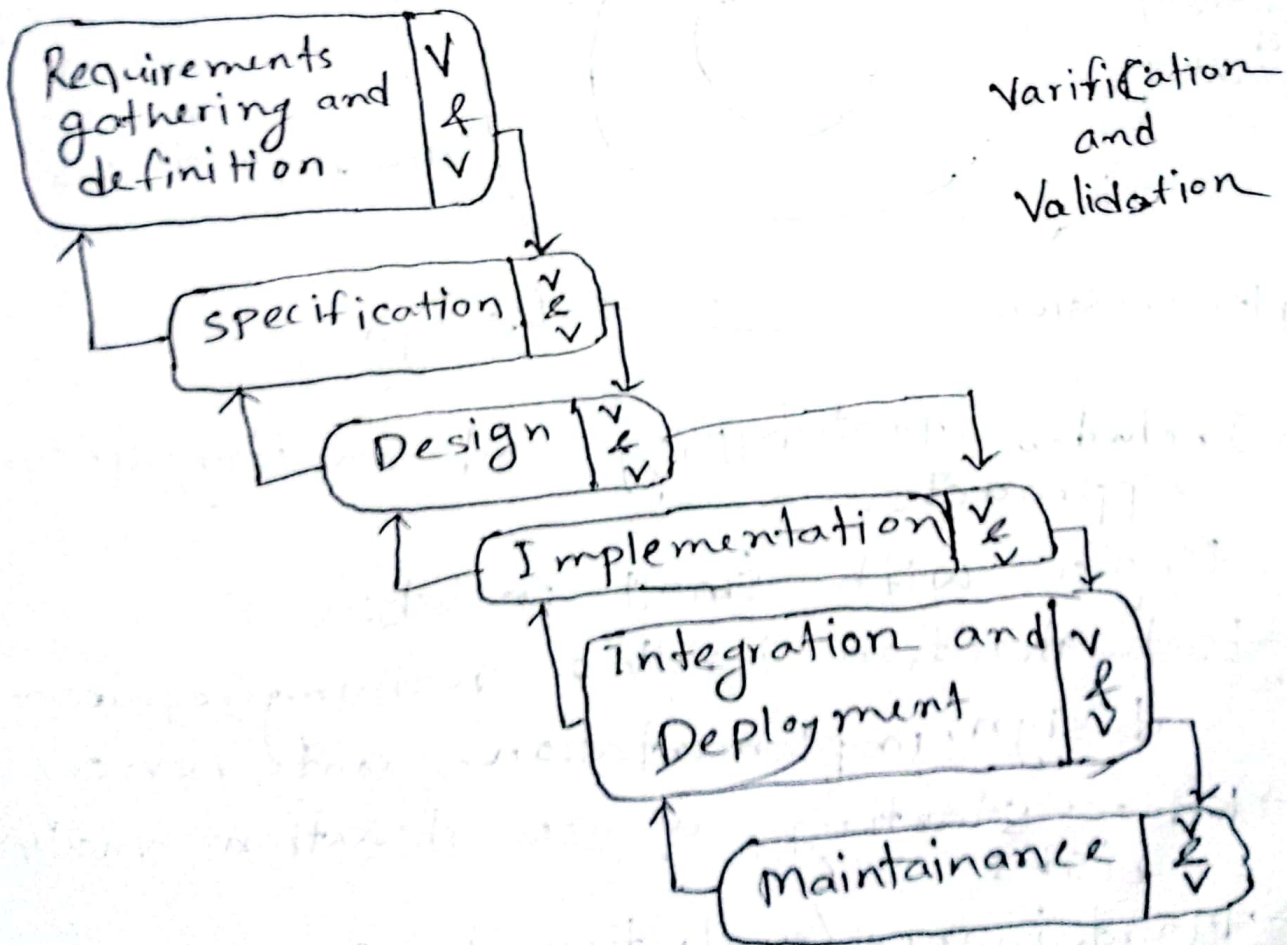
- Deciding what needs to be done.
- Estimating costs.
- Ensuring there are suitable people to undertake the project.
- Defining cost responsibilities
- Scheduling
- Making arrangements for the work.
- Directing
- Being a technical leader
- Reviewing and approving decisions ^{made} by others.
- Monitoring and controlling
- Co-ordinating the work with managers of other projects
- Reporting to clients and higher-level managers
- Continually striving to improve the process

Opportunistic approach



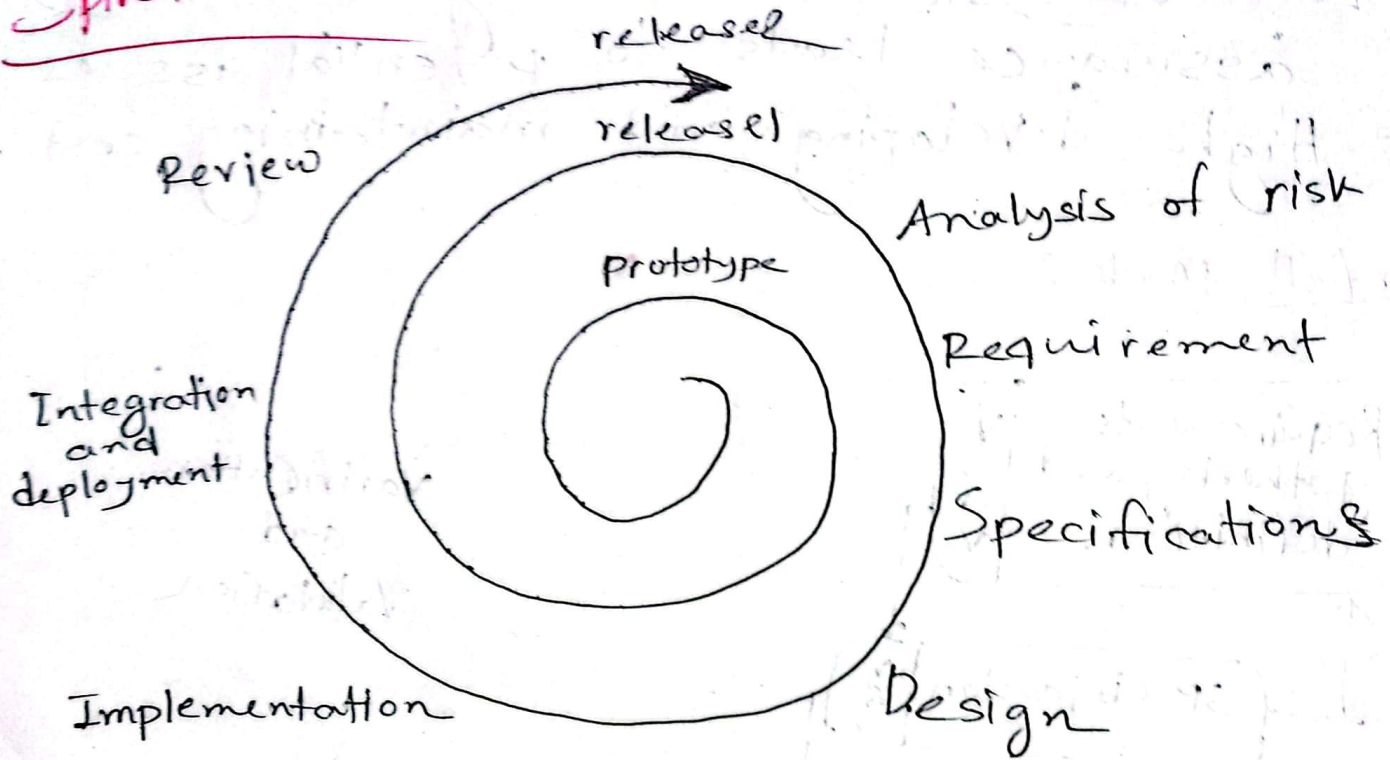
- No plans. so nothing to aim towards
- Lack of systematic testing and quality assurance leads to potential issues
- High developing and maintaining cost.

Waterfall Model:



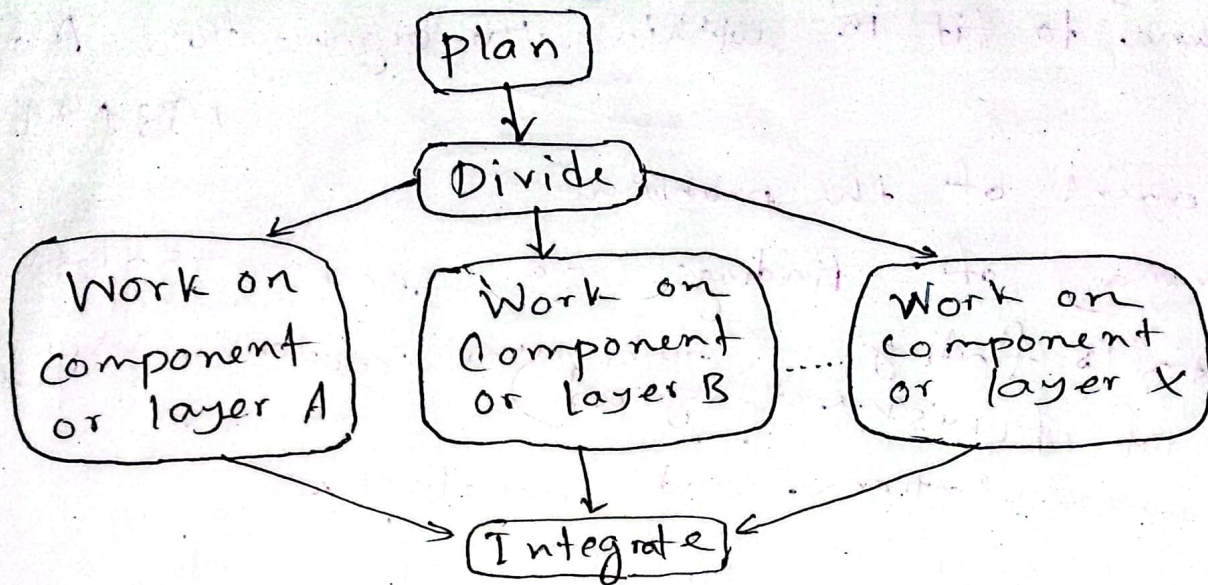
- Suggests that software engineers should work in a series of stages.
- Projects often fail because the weaknesses in the requirements are not recognized early enough to make simple adjustments.

Spiral Model



- Includes prototyping and an iterative approach.
- Begin with small prototype.
- Each iteration involves refining requirements, design, implementation and review.
- Before starting a new iteration, analyze risks.
- Maintenance/evolution is on-going iterations around the spiral.

Concurrent Engineering Model



Pert Chart

- (i) Optimistic time estimate (t_o or a)
- (ii) Most Likely time estimate (t_m or m)
- (iii) Pessimistic time estimate (t_p or b)

$$\text{Expected time, } t_e = \frac{t_o + 4t_m + t_p}{6}$$

$$\text{Variation variance, } \sigma^2 = \left(\frac{t_p - t_o}{6} \right)^2$$