Assignment - 1

Ans 1. Three cause of software crisis :-
a) Scope creep
   Leads to delays, cost overruns, incomplete functionality.
b) Poor User Interface
   Lack of usability testing and user involvement
c) Integration Issue
   Existing databases and applications are incompatible

2. Waterfall model.	Spiral model.
· Linear & sequential	Iterative, risk driven
· Unsuitable for projects with evolving requirements & high integration needs.	Better suited for government projects due to its flexibility in risk handling risk & itegration challenges
· Rigid, hard to go back	Allows prototyping at every phase.

* Spiral model is more suitable as it address risks, integration, and evolving requirements.

3. Process Improvements.
· Use Agile principles for iterative delivery & continous feedback.
· ~~Adopt~~ ~~TSP~~ ~~PSP~~ ~~for~~
· Early stakeholder involvement to prevent requirement ~~of~~ ambiguity

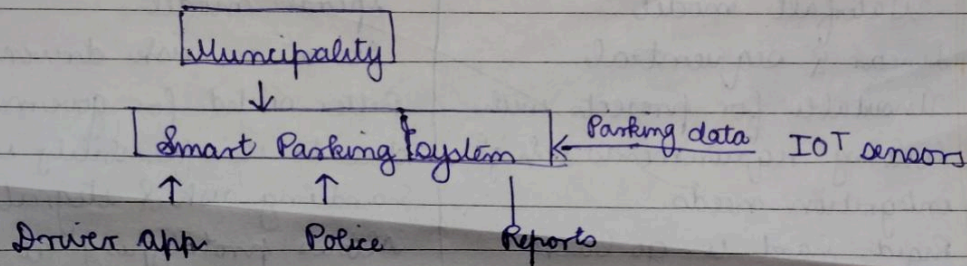| Ans2. Prototype model	Evolutionary model
· Quick prototype for user validation.	Incremental delivery of work module.
· Useful for UI heavy systems	More controlled than prototypes.

2 Evolutionary model is better because :-
i) Continuous user feedback.
ii) Compliance with healthcare regulations.
iii) Modular Integration (billing, pharmacy, records) is phased

3. Requirement Elicitation & Risk handling
· Requirement elicitation :- Early stakeholder workshops, interviews with doctors. Regulatory document analysis.
· Risk handling - Identify compliance risks early, Test data privacy & security, run pilot deployment for each module.

Ans 3.2

```
            ┌─────────────┐
            │ Municipality │
            └─────────────┘
                  ↓
┌──────────────────────────┐ ← Parking data   IOT sensors
│ Smart Parking System     │
└──────────────────────────┘
     ↑           ↑         │
  Driver app   Police    Reports
```

1. Elicitation Techniques :-
· Municipalities : Workshops/ Interviews, document analysis
· Drivers : Surveys & questionnaires, mobile app prototype
· Traffic police : Focus groups, Interviews, Observations.

3. Functional Requirements :-
i) Display of Real time parking availability
ii) Allowing driver to search nearest parking spot.
iii) Providing navigation to selected parking
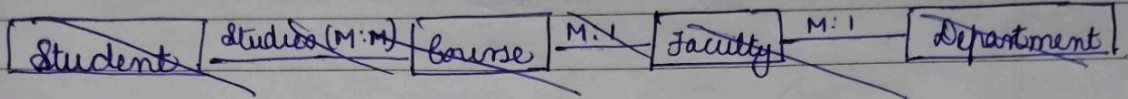iv) Updating parking status upon entry or exit
v) Generating parking reports

Non Functional Requirements :-
i) The app shall be available 24/7
ii) Ensuring secure data communication.

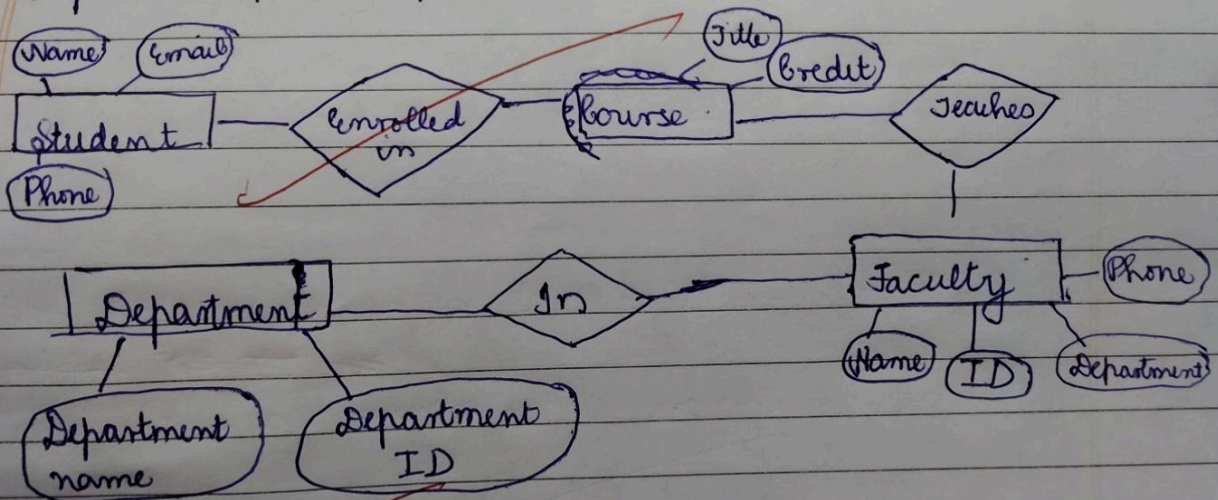iii) Response time for availability query within quick time.

Ans4.(E-R ~~Dig~~ Diagram
entity - Student, course, faculty, department

| Student | Studies (M:M) | Course | M:N | Faculty | M:1 | Department |

2. Data Dictionary

Entity	Attributes	Primary key	Foreign key	Data Type
Student &	S_Id, Name, email Dept Id	S_Id	Dept Id	Int, Varchar
Course	C_Id, Title, credits	C_Id	F_Id	Int, Varchar
Faculty	F_Id, Name, email	F_Id	Dept Id	Int, Varchar
Department	Dept_Id, Dept_Name	Dept Id	—	Int, Varchar