Software Architecture
MCA 531

1947235
(1)

~~(2) (6.)~~

(2) (a.) Architecture quality attributes :-

Scenario :-

A software is considered as a quality product if its architecture is designed efficiently and it's optimized properly. Software architecture is the first milestone in software development.

Software design architects needs to understand their design in terms of quality.

Achiving quality attributes must be considered throughout the design, implementation, and deployment.

different quality attributes are :-

(i) Performance
(ii) Reliability
(iii) security
(iv) Modifibility
(v) Reusability
(vi) Availability
(vii) Usability
(viii) Throughput
(ix) configurability

1947235 (2)

(i) Performance :- Performance of any software is the main quality indicator as end-user wants nothing but a software having good performance.

(ii) Reliability :- An architecture of any software must be reliable so that user and developer can be sure about it's security and performance.

(iii) Security :- Security is one of the main quality of any software. The more secure a software is, the more reliable it will be and the more user will be satisfied with the product.

(iv) Modifibility :- Modifibility determine the flexibility of any software design. An architecture must be modifiable as in real world scenario, the requirements are not fixed, they keep changing.

(v) Useability & Reusability :- Any part of software should be developed such as that part can be used and reused

later also.

1917235 (3)

* Throughput :- It decides how fast and efficient the software is.

* Configurability :- This quality decides how easy is the installment and config-uration of a software is.

So, A quality attributes are what make a system good with respect to a stack holder.

→ These quality attributes are most of the time are not written they are verbally said alongside functional requirement. Most of the time they are implicit in the functional requirements.

1972235
(4)

(1)(a) Activities involved in creating a software architecture:-

→ Software architecture plays a vital role in the software development. This is where software's main components are decided. The design and the development path are decided here which makes the development phase easy and error free.

There are so many activities are involved in creating a software architecture. They are following:-

(i) Creating the business case for the system
(ii) Understanding the requirements
(iii) selecting the architecture
(iv) Documenting and communicating the architecture.
(v) Analyzing & evaluating
(vi) Implementing the system
(vii) Ensuring that implementation confirms the architecture.

1997235 (5)

(i) Creating the business case for the system:-

→ Creating the business case is broader than simply ~~ass~~ accessing the market requirements. It is important step in creating & constraining any future requirements.

→ How much should the product cost?

→ What's market requirements?

→ Will it need interface with other system?

and soon are the questions which should be asked in this step.

(ii) ~~Under staind~~

Understanding the requirements:-

This plays a very important role in software development. this is where we understand what needs to be developed by acquiring the requirements from the user. we use object-oriented scenarios, or use case method to understand the user's requirement.

1947235
(6)

(iii) Creating or selecting the architecture:- After gathering the requirements from the user, next we have to decide & select the best fit software architecture model for the system.

(iv) Analyzing & Evaluating:- In design phase there will be multiple candidates' design considered. Some will be rejected immediately. Others will be counted for primacy. Choosing on from multiple design and analyzing them is very challanging task.
Evaluating the choosen architecture for the quality it supports with the requirements of the stackholders.

(v) Implementing based on the architecture here the actual implementation of the software takes place according to the selected architecture.

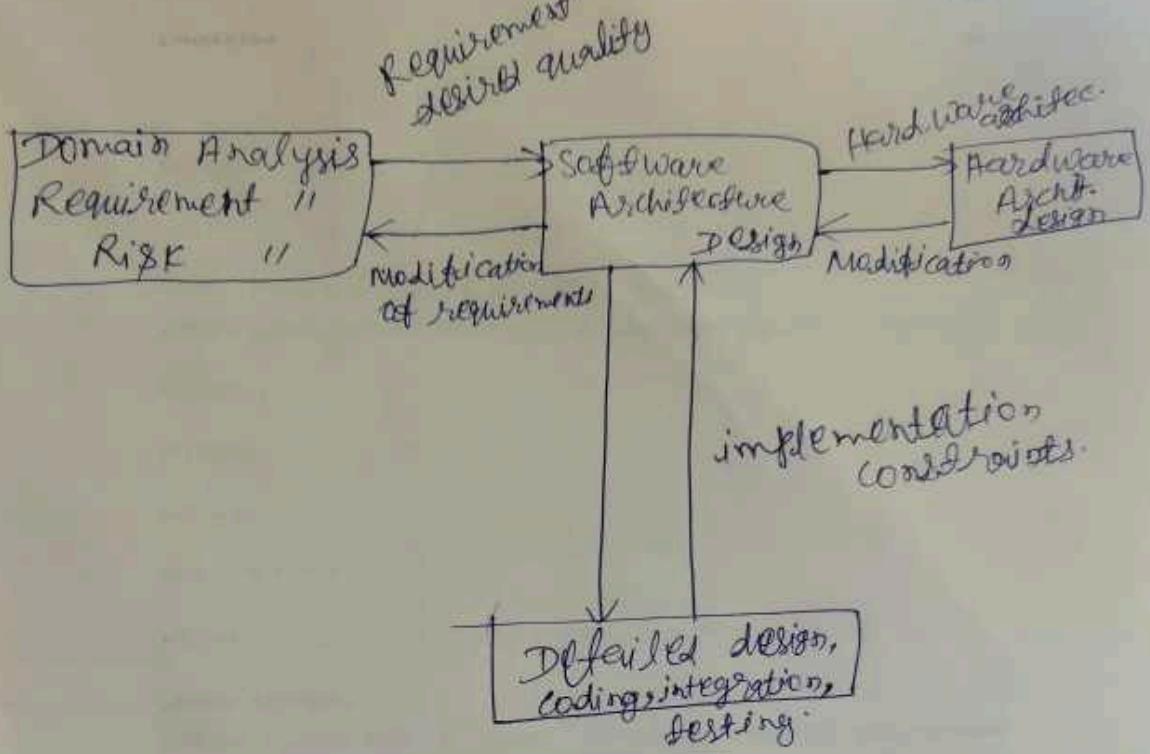
(vi) Ensuring Confirmation to an architecture:-

Finally, when an architecture is created & used, it goes into maintanance phase. Constant vigilance is required to ensure that the actual architecture and its representaion remain faithful to eachother during development of software.

(3.) The project we previously worked on is "online job portal". It is a website which connects job seekers and job providers. Job-providers will be posting jobs and details. Job seekers, goes through the posted jobs and apply for jobs o matching with his/her skillsets. There is so many filters there. to filter out jobs based on time, skills, department and so on.

We followed the generic software

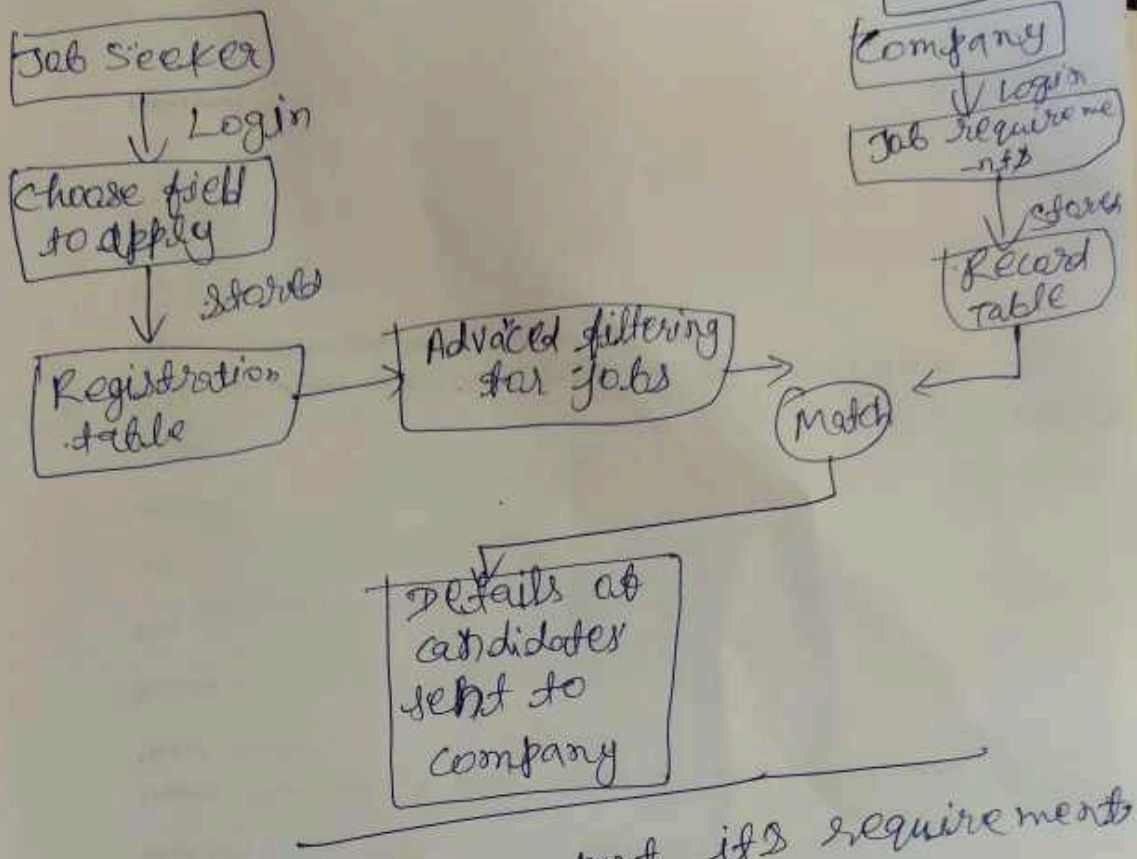
1947235



architecture for software devevelopment.

→ we gathered the requirements,
→ we did domain analysis, ~~and did~~
→ we did check about hardware require-ments.
→ once finalized, we start the design, development of product.
→ we did coding, integration and some testing.

Our software architecture was some what :-



→ So, once company post its requirements that is stored in database, The job seeker locates the jobs using advanced filtering. If the requirements of jobseekers are matched with company's requirement, he/she applies for the job. and then the full details of candidate is sent to company.

1947235 - 10

Quality attributes in our projects

(i) Modifibility :- Our project was flexible, if the requirement is changed, the website can be changed accordingly with very little effort.

(ii) Performance :- The overall performance was analyzed. We tried posting jobs, searching, filtering and applying for jobs. All features were working perfectly.

(iii) Security :- We provided login features to each companies and candidates. To use the website, the user must login.

(iv) Configuribility :- The website is easy to use. If just require url of website and thats all.