SOFTWARE ENGINEERING

ASSIGNMENT # 1

NAME: Rania Ghazanfar

SECTION: 6H

ROLL NO: 22K4159

INSTRUCTOR: Sir Zulfiqar Ali

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Software Engineering Process Models in Real-World Software Houses: JobDiva Case Study Report

In this report, an investigation was done by interviewing a company representative named JobDiva, a software house specializing in staffing solutions. This representative is named Hasan Burney who has worked in JobDiva for 2.5 years as a software Developer.

JobDiva is a software house specializing in staffing solutions, catering to a diverse range of clients from mid-market to enterprise-level across industries such as healthcare, IT, finance, and more. The company develops comprehensive "all-in-one" staffing solutions designed to streamline recruitment and workforce management processes. These solutions include an Applicant Tracking System (ATS) for managing candidate information and resumes, a Customer Relationship Management (CRM) system for managing client relationships, a Vendor Management System (VMS) synchronization tool for seamless interaction with clients' VMS platforms, onboarding tools to automate and streamline the hiring process, financial management tools for billing and payroll, reporting and analytics for data-driven decision-making, and mobile apps for recruiters and talent. These software components are tailored to meet the needs of staffing agencies, ensuring efficiency and scalability in their operations.

JobDiva follows an agile approach, having multiple daily stand-up meetings with the development team and also bi-weekly meetings with the senior project managers. Hence they apply scrum meetings to do their work. This ensures continuous improvements and an iterative software development process. They use an iterative modeling method for software development. Since JobDiva has its own products that require continuous changes over time, they use an iterative Model to develop and maintain their products. Their products are required for constant enhancements and updates, and also focusing on regular user feedback implementation.

Since JobDiva utilizes an iterative model for existing projects for changes and development, but for project that requires a very specific feature for a client, they use Rapid Development Method(RAD). This approach involves providing basic prototype to the client and quickly iterating based on client feedback, providing quick delivery and client satisfaction. This approach focuses on changes in short and focused cycles. JobDiva combines process models only when the enhancements are too complex or there is a risk of disrupting existing functionality. This allows the team to reduce the possibilities of risks and maintain the efficiency of the development process.

There are some challenges faced by software developers in the company when implementing their process models. Firstly, some features sometimes turn out to be unnecessary. Secondly, completing development on changes that are later cancelled due to shifting priorities, resulting in unreleased work. Thirdly, there are problems in coordination between ongoing development and changing client requirements during the process. JobDiva's challenges are addressed in a way that the project managers are extremely cooperative and always urge the developers to maintain their pace when handling their work changes. Resources are also allocated to prevent team members from becoming overburdened. In case of budget, JobDiva aims for the most optimal solution, even if they are expensive, ensuring that the quality of their products is ensured.

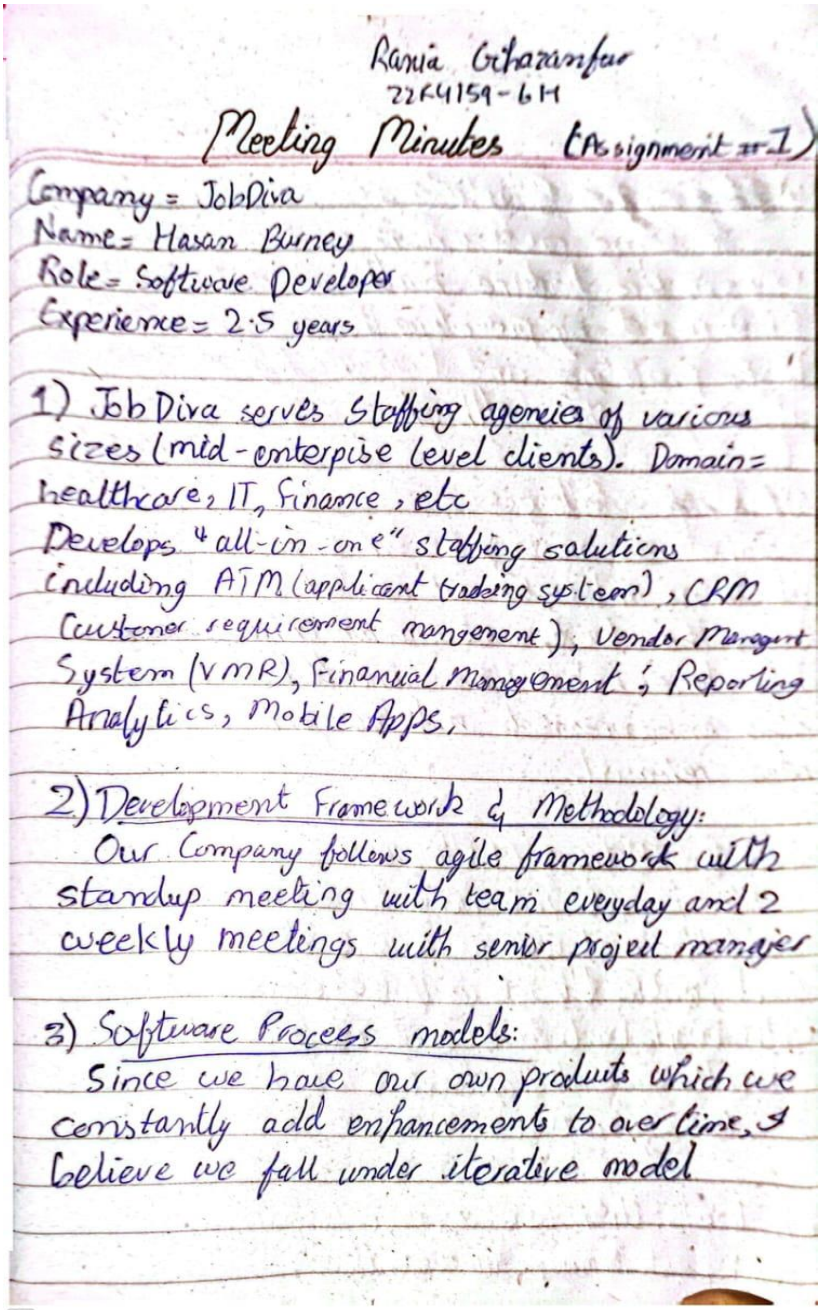
Additional information found on JobDiva is that they utilize "Asana" for task Management, progress tracking, and communication among team members. Furthermore, the clients do not work in the offices, instead they use email to communicate with the company. The clients also have weekly meetings with project managers and senior developers to ensure alignment and progress. Additionally, pair programming is common practice at JobDiva, even though it is not enforced, but developers work in teams of two by themselves, as the developers believe that two minds are better than one. Both programmers work on the code and face difficulties together to ensure creativity and correctness of the code while also recognizing on the fact that the code can be changed further in the long run so they make sure the code is tolerant enough to be changed. They also make sure that no features are dependent on each other as it would be difficult to enhance or change the code after adding new additional features or changing any additional features.

JobDiva places a strong emphasis on ensuring the quality and reliability of its software through rigorous testing processes. The company employs manual testers who are responsible for creating and executing all possible scenarios for component testing. These testers meticulously design test cases that cover a wide range of use cases, edge cases, and potential failure points to ensure that each component of the software functions as intended. For example, if JobDiva is developing a new feature for its Applicant Tracking System (ATS), such as a resume parsing tool, the manual testers would create scenarios to test how the tool handles different resume formats, languages, and structures. They would also simulate edge cases, such as uploading corrupted files or resumes with missing information, to ensure the system responds gracefully and provides appropriate error messages. This thorough approach to testing helps identify and resolve bugs early in the development process, reducing the risk of issues arising in production. Additionally, manual testing allows the team to validate the user experience, ensuring that the software is intuitive and meets the needs of recruiters and staffing agencies. While JobDiva primarily relies on manual testing for component validation, this method is complemented by the developers' own testing efforts and the collaborative problem-solving approach of pair programming. Together, these practices ensure that the software is robust, reliable, and ready for

deployment, ultimately contributing to the high-quality solutions that JobDiva delivers to its clients

In conclusion, JobDiva demonstrates a flexible and adaptive approach to software development, leveraging Agile and Iterative models as primary frameworks. The company's ability to switch to the RAD model for specific client requests highlights its commitment to client satisfaction. Despite challenges such as shifting priorities and unnecessary implementations, JobDiva maintains a supportive work environment and prioritizes optimal solutions. Tools like Asana and practices like pair programming further enhance productivity and collaboration within the team. JobDiva's focus on continuous improvement, client collaboration, and effective project management ensures that it delivers high-quality software solutions tailored to the needs of its diverse client base. The company's rigorous testing processes, which include manual testers creating all possible scenarios for component testing, play a critical role in ensuring the reliability and functionality of its software. For instance, when developing a new feature like a resume parsing tool, testers simulate various scenarios, including edge cases like corrupted files or incomplete resumes, to ensure the system handles them gracefully. This meticulous approach to testing, combined with the developers' collaborative efforts and the use of pair programming, ensures that the software is robust, user-friendly, and free of critical bugs before deployment. The company's ability to adapt its processes to specific project requirements, address challenges effectively, and maintain a high standard of quality makes it a strong player in the staffing solutions industry.

MEETING MINUTES:



Rania Ghazanfar
22F-4159-BM

Meeting Minutes (Assignment #1)

Company = JobDiva
Name = Hasan Burney
Role = Software Developer
Experience = 2.5 years

1) JobDiva serves staffing agencies of various sizes (mid-enterpise level clients). Domain = healthcare, IT, finance, etc
Develops "all-in-one" staffing solutions including ATM (applicant tracking system), CRM (customer requirement mangement), Vendor Managent System (VMR), Financial Management & Reporting Analytics, Mobile Apps.

2) Development Framework & Methodology:
Our company follows agile framework with standup meeting with team everyday and 2 weekly meetings with senior project manager

3) Software Process models:
Since we have our own products which we constantly add enhancements to over time, I believe we fall under iterative model

8) Combining Process Models:
Only in cases when enhancement is too complex, or is threatening to disrupt an existing functionality.

9) Client collaboration:
Client dont work with us in office, but constantly communicate us via email, with weekly meetings with project managers and senior developers.

10) ~~11~~ Pair Programming AND Testing:
It's not enforced by them but we pair program on a daily basis. It's always better to tackle a complex issue with two minds rather than one. focuses on tolerant and independent features
~~They~~ We have manual testers. They don't create any automation scripts or anything they just manually check for all possible scenerios as a component. For edge cases, potential failures etc or do simulations according to specific products. use resume parsing tool, formats, language structure and see all results.

4) ~~Challenges~~ Adaptation:
In some cases when a client wants a very specific feature built, we opt for the RAD model by providing them with a very basic prototype and then quickly add onto it as per the feedback.

5) ~~Address~~ Challenges:
Sometimes we implement something and it turns out to be not needed, in other cases the development on an enhancement gets done, but is then cancelled to prioritise other enhancements and the prior ones are never released.

6) ~~Address~~ Address Challenges:
~~Pro~~ Project managers are extremely cooperative and urge us to work at our pace, and constantly ask us if we're over burned with workload. In case of budget, they usually go for the optimal solution, even if its expensive.

7) Tools: they use asana for project track, task manage, communication.