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PROJECT TITLE: Dental Appointment System

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

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1. Introduction

Nepal is a developing country where technological evolution is also emerging day by day. In Nepal, several new innovations have been introduced and implemented. But there is not much technological advancement in Nepal with regards to the dental appointment sector. People still wait in long lines just to get their teeth checked. It is necessary to get a dental check-up once every 6 months. So, it is necessary to have an appointment for various dental check-up and facilities in order to avoid such crowds and lines. Many people do not have time to wait in such lines. In order to save such time, I decided to create a Dental Appointment System that would help many people in Nepal.

1.1 Problem Scenario

People who have a tight schedule don't have enough time to wait in long line for their dental check-up. Sometimes there is no guarantee if their turn will come or not. It is very hectic for people to wait in long lines for a few minutes of consultation as well. Especially now, in times of covid, it is very risky to stay in crowds as well. Here, the clinics still use old paper style report so there is very high chance that the report will get lost or misplaced. So, if in case, the patient goes to a new dentist, there is a chance that he/she might have to check their whole teeth again to see what had happened.

1.2 Project as a Solution

This Dental Appointment System is important for the country as technology grows fast in the world. The goal of developing this project is to provide better solutions to the problems faced by patients. This website will allow customers to schedule an appointment for their dental check-up from home or from the office. In the present situation, there is no such appointment system available in Nepal. Patients find it difficult to book an appointment for their dental check-up. Either they must wait a very long line in crowd or must call some known doctors to schedule an appointment. Patients can also view their reports in

their profile, so they will never lose their dental record and it will be much easier to access it in future if the patients face any problems.

At the end of this project, a prototype will be created that will provide a solution to the problem found. This system would be a web-based system where an overall online registration process and appointments will be carried out. Finally, the proposed system would save time for the patients.

2. Aims and Objectives

The primary aim of this project is to create a user-friendly web application that allows users to schedule a dental check-up appointment and save time rather than going to the clinic and waiting in line.

The following objectives are pursued in order to achieve this aim:

- To learn about the Python and its Django Framework along with it features.
- To use a relational database to comprehend and implement a database management system in the real world.
- To create a web application that allows to people book an appointment for their dental check-up.
- To work on the project using incremental methodology.
- Make the UI as user-friendly and interactive as possible.

3. Expected Outcomes and Deliverables

After this project is completed, the expected outcome is that the user will be able to book an appointment for their dental check-up instead of going to the clinic and waiting in a long line. The application will be only for one clinic i.e. Super Dental Clinic. The following are the project's deliverables and features:

- Creating user accounts and allowing them to log in.
- User Profile.
- To schedule a dental appointment for the user.
- Cancel or update appointment.
- Allowing the user to choose the type of check-up they desire.
- To look at the doctor's ratings.
- To choose the doctor of their choice.
- To get a look at their reports.
- To give feedback.
- To rate the doctors.

4. Project Risks, Threats and Contingency Plans

SN	Risks	Probability	Impact	Contingency Plans
1	Difficulty in in implementing all the features.	Medium	High	Proper research should be done.
2	System crash/theft	Low	High	Back up data in Cloud.
3	Data loss and theft	Medium	High	Proper encryption and data backup should be done.
4	Slow internet speed	Low	Medium	Proper and reliable internet should be used.
5	The application might not be completed in specified time	Low	High	Proper time management should be done.
6	Difficulties in debugging	Medium	Medium	Proper research and seek help.
7	Insufficient information and resources	Low	Medium	Asking help with the supervisors.
8	Unsatisfactory user experience.	Medium	High	Beta test to take user's feedback and fix it properly for user satisfaction.

Table 1: Project Risks, Threats and Contingency Plans

5. Methodology

5.1 Considered Methodology

5.1.1 RUP Methodology

The Rational Unified Process (RUP) is an approach for developing agile software. The project life cycle is divided into four phases by RUP. All six main development disciplines are practiced at each phase: business modelling, requirements, analysis and design, implementation, testing, and deployment. RUP provides a systematic way to build this type of system, focusing on the production of an executable architecture in the early stages of the project, that is, before committing resources on a large scale. (TestBytes, 2019)

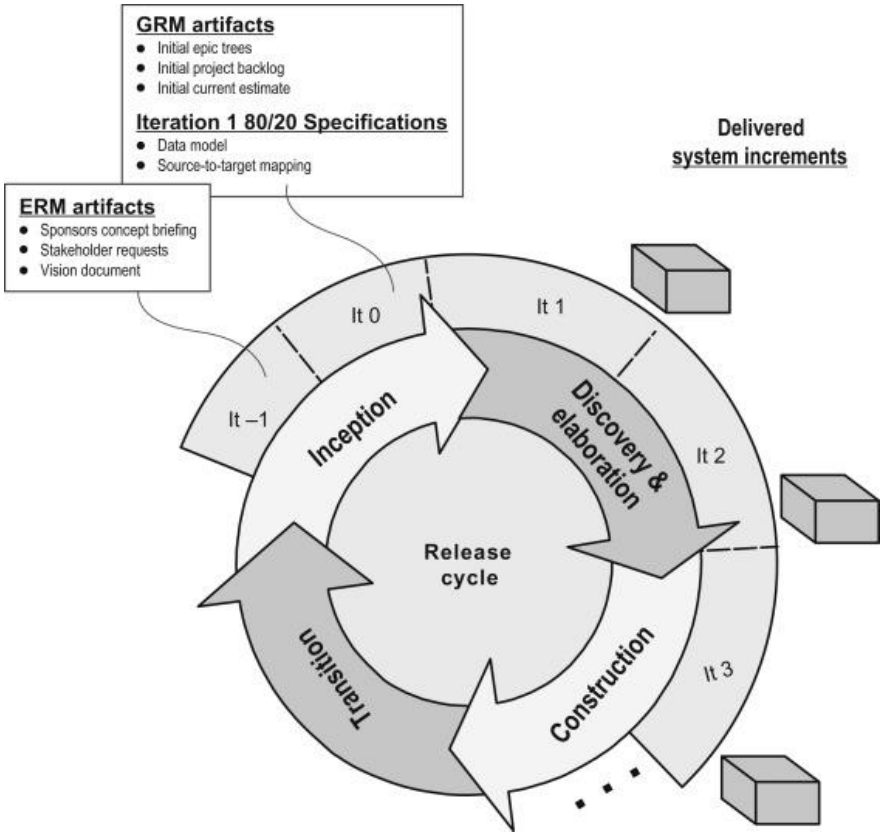

Figure 1: RUP Methodology (TestBytes, 2019)

5.1.2 Prototype Methodology

Prototype Model is a software development model in which prototype is built, tested, and reworked until an acceptable prototype is achieved. (Martin, 2021) It also serves as a foundation for the creation of the final system or software. It's best used in situations where the project's requirements aren't fully understood. It is an iterative, trial-and-error process that occurs between the developer and the client.

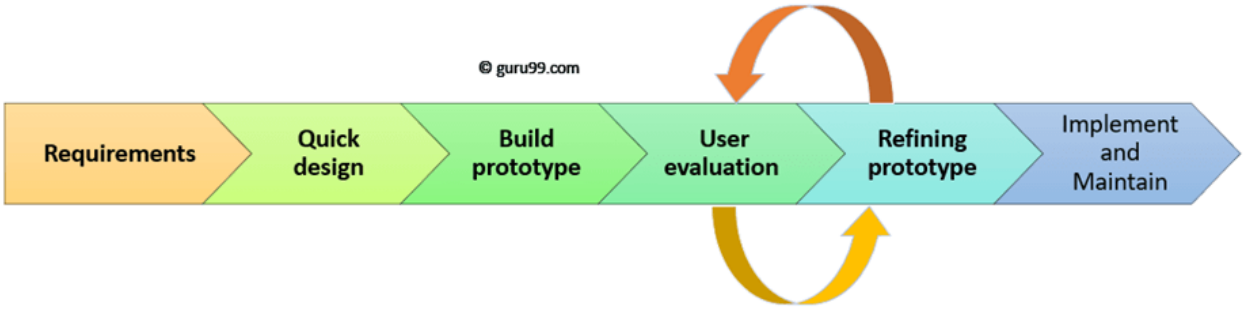

Figure 2: Prototype Methodology (Martin, 2021)

5.2 Selected Methodology

5.2.1 Incremental Methodology

In Incremental Methodology, first a simple working system is constructed and supplied to the customer, with only a few basic features. Over many successive iterations successive versions are implemented and delivered to the customer until the desired system is realised. (Mall, 2014) The following diagram shows the incremental development model:

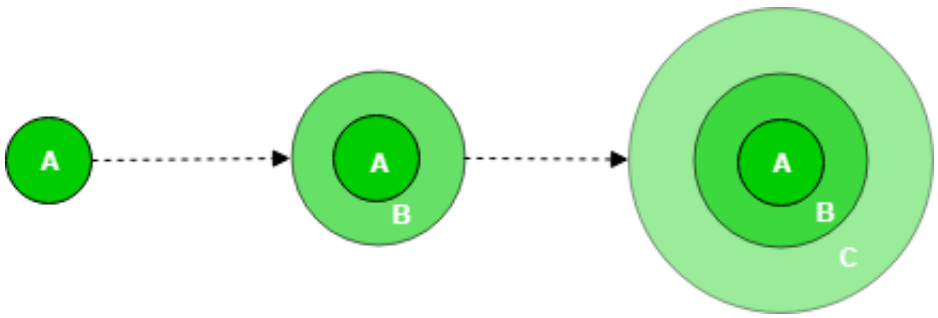

Figure 3: Incremental Methodology (GeeksForGeeks, 2019)

I chose the Incremental Model methodology for my project. The incremental model is a software development technique in which the model is defined, implemented, and tested one step at a time until the product is complete. It consists of both development and maintenance. When a product meets all of its specifications, it is said to be done. This model combines the elements of the waterfall model with the iterative philosophy of prototyping. (Ghahrai, 2016) I picked this methodology over the iterative model because the iterative model requires us to receive input from the project manager after each feature. Furthermore, the incremental model differs from the iterative model in that the iterative model involves the addition of new features, whereas the incremental model involves the refinement of existing features. This approach is commonly utilized in the development of online applications. Also, I utilized incremental since the requirements and features are extremely clear and can be implemented and delivered in each phase.

The product is broken down into multiple parts, each of which is designed and constructed independently (termed as builds). When all of the components have been completed, they are delivered to the client. This allows for partial product usage while avoiding a lengthy development process. It also necessitates a significant upfront financial investment, with the long wait time eliminated. This model of development also helps ease the traumatic effect of introducing completely new system all at once. (Ghahrai, 2016)

6. Resource Requirements

The resource requirements for the project are:

Hardware Requirement	Any standard device with an internet connection will be enough.
IDEs	Visual Studio Code, Sublime Text 3
Framework	Python Django Framework
Database	SQLite
Programming Language	Python, HTML, CSS, JavaScript and Bootstrap

Table 2: Resource Requirements

7. Work Breakdown Structure

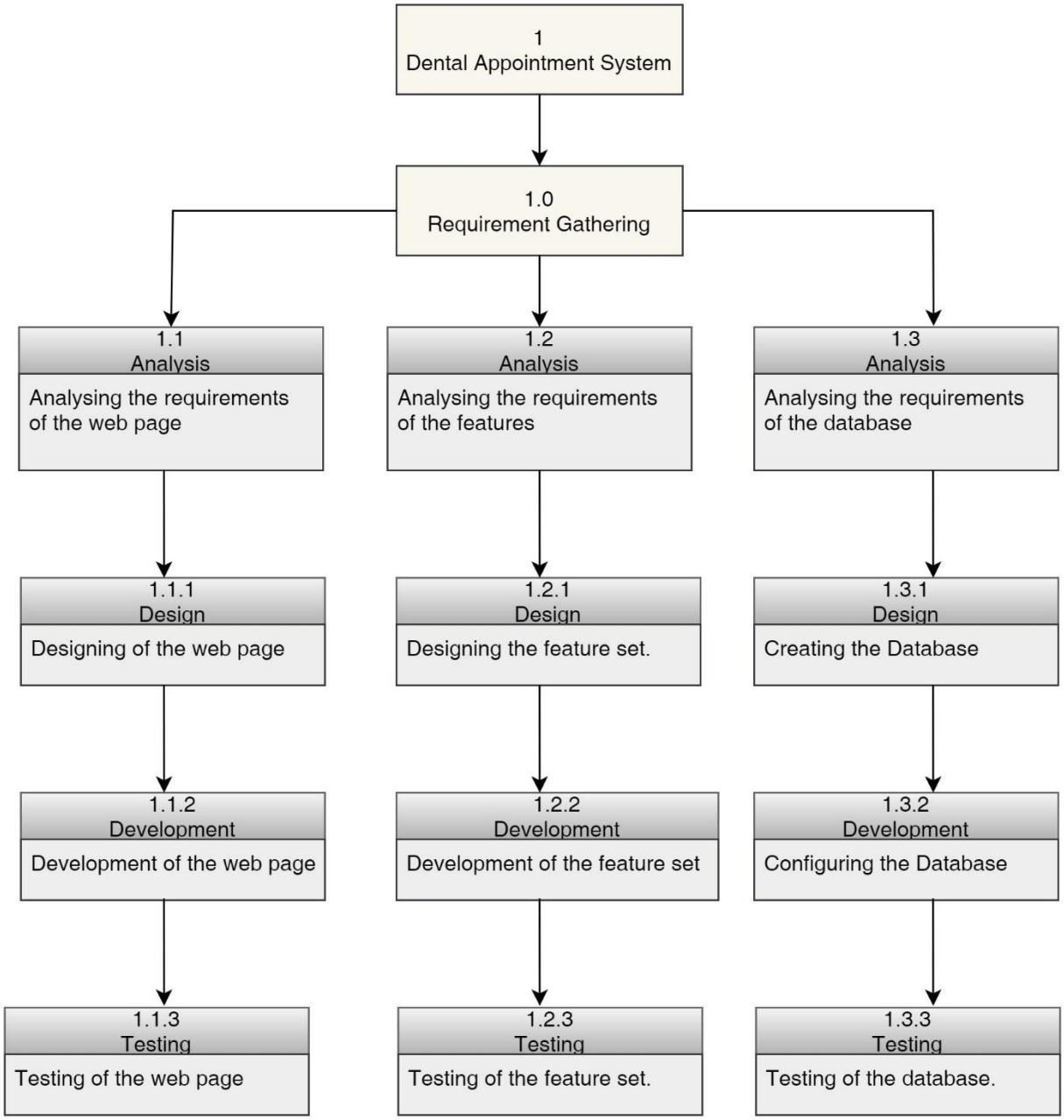

Figure 4: Work Breakdown Structure

8. Milestones

The milestones of the project are:

Phase	Start Date
Analysing the Requirement of the WebPage	1st Nov. 2021
Designing the WebPage	12th Nov. 2021
Coding the WebPage	1st Dec. 2021
Testing	21st Dec. 2021
Analysing the Requirement of the Database	3rd Jan. 2022
Creating the Database	7th Jan. 2022
Configuring the Database	16th Jan. 2022
Testing	26th Jan. 2022
Analysing the Requirement of the Features	2nd Feb. 2022
Designing the Features	11th Feb. 2022
Coding the Features	3rd Mar. 2022
Testing	25th Mar. 2022

Table 3: Milestones

9. Gantt Chart

The Gantt Chart for the project is shown below:

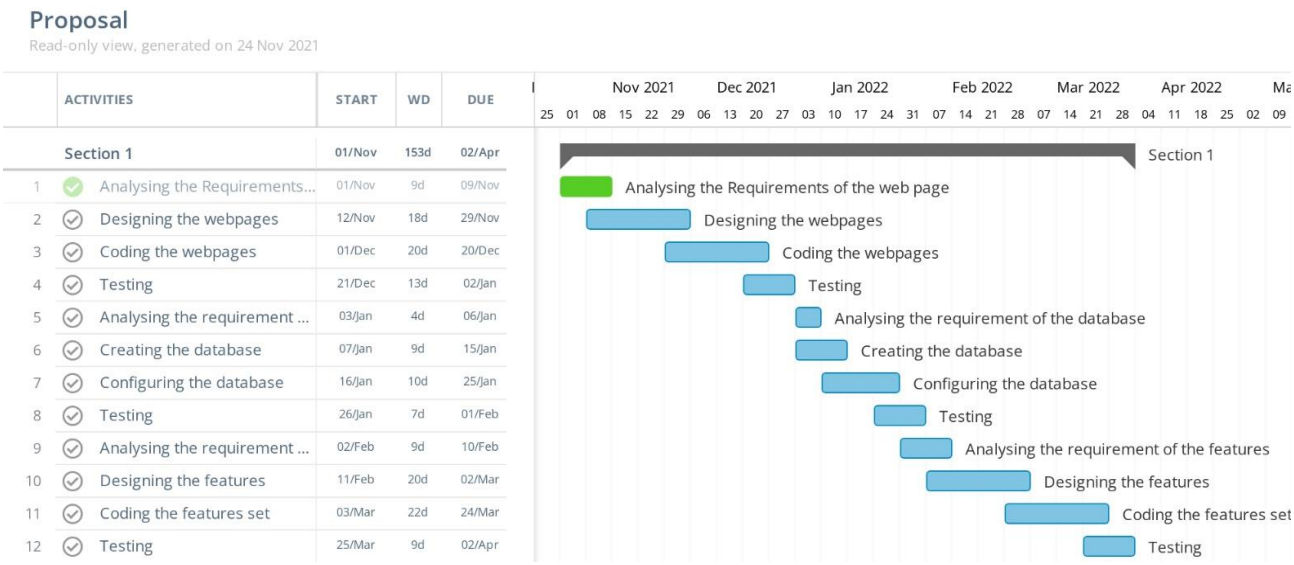

Figure 5: Gantt Chart

10. Conclusion

In a nutshell, this web application is primarily aimed at consumers who want to save time by conveniently scheduling an appointment for a dental check-up. They won't have to go to the clinic and stand in a huge queue for their turn. They can easily get their teeth checked at the time of scheduling. The project's development is meant to be completed within the time frame specified while meeting the requirements. Because it is done using the incremental model, further functions will be introduced. The project hopes to keep the user lists up to date and to offer them with a pleasant working environment. Finally, the project's progress should be communicated to the supervisor on a regular basis in order to improve the project's quality.

11. Bibliography

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