# **Chapter -2 Analysis**

# **2.1**

The breaking of the subsequent elements into simple one is known as analysis. We need to perform analysis to confirm the necessities can be included in the software without any problem.

Requirement, Natural language analysis (NLA), Use Case, class diagam and activity diagram are included in this part. The explanation of those analysis are as follows:

**Requirement:** it is the process of gathering all the information of client expectation before developing the system. This is the starting and most important and this features called requirement should be quantifiable, relevant, and then should be in detailed.

**NLA:** Natural language analysis is done after the requirement. This is done by separating the noun, verbs and objectives to made class diagrams and to made classes and objects.

**Use Case diagram:** Use case diagram define the essentials of actors and their collaborations with the system. It is used to increase extra imaginative textual use case.

**Class diagram:** It is the structured diagram that defines the system’s classes, attributes, operations and the relationship of the objects which is used for data modeling.

**Activity diagram**: It is the process of the system which is used to describe the flow of note from one activity to another.

Here in my project I am applying the SWOT analysis because it determine which features are essential to the website’s accomplishment and what can harm my website and also it focus on both internal and external factors. By performing this analysis I as well as other choice makers can understand my website’s weakness, strength, opportunity and threats that can affect my organization.



Fig 1: Picture of SWOT analysis.

The strengths and weakness focus on **internal issues**, while opportunities and threat focus on **external issues**. Likewise, PEST analysis only focus on the external factors whereas CATWOE only provides means to decide the issue of different view. So, I have decided to implement SWOT analysis.

The factors of my project that comes under SWOT analysis are as follows:

**Strength:** Responsive design with full mobile support, operative call to action, suitable and important contents, quick and easy checkout process, and banking details other extra details for donation and direct donation through website and also through e-sewa. .

**Weakness:** language translator.

**Opportunity:**  including features like language translator.

**Threats:** Deceitful activity, browser could upgrade.

# **Feasibility Study.**

Feasibility study is the early design period of any project, which brings together the elements of knowledge that specify if a project is possible or not. They are used underneath many conditions like whether the company has enough money and human resources for a project? To find out will the created product will be sell or not and so on.

The types of feasibility study are as follows.

1. **Economic feasibility:** it is used to identify the financial resources of the company and it is also the cost benefit analysis because it derived the total budget for development of a new system and benefits derived from the system. my project comes under the budget and there won’t be any economic problem while developing this system. Without any doubt it is possible to develop the system.
2. **Technical feasibility:** it is used to identify that is technical resources are available or not to create a project. And also measure will the hardware and software of the current system support the proposed project. Yes the current hardware and software will support this system and also all technical resources are available so, there is no problem in this feasibility.
3. **Schedule feasibility:** it is used to identify that does the company have enough time to start the project or can the project will be completed at the time? I have already maintained the time schedule and they are accurate that defines the project can be completed in time.
4. **Operational feasibility:** this will measure how well your company can identify and solve the problem and also measure the solution of the problems. As I have implemented SWOT analysis for this system and this can identify all the internal and external problems which I can solve it easily quickly.
5. **Legal feasibility:** this will identify that does the company met all the permitted and ethical requirement? The system that I have planned to develop this is legal and under the laws of my country and in feature my project won’t create problem which is legally possible to develop this system.

# **Requirement Analysis.**

Requirement analysis is the process of identifying the client’s expectation for a new or modified product.

The type of requirement analysis are with it explanation are as follows:

* + 1. **Functional requirements**:

It specifies that what system should do for example in my system the functional requirements are:

* Interface requirements.
* Blogs
* Gallery
* Authentication
* Sending feedback by user.
* Admin panel.
* Donator’s details.
* Causes.
* Contact information including google map
* Pop up information.
* Donation form
* Call to action button

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| F.ID | Function | Data | Rational | Dependency | Remarks |
| F01 | Login | Admin’s username and password | Security | F01 | Login for accessing admin panel |
| F02 | Admin Panel | No data needed | Posting activities | F01 | Posting images, blogs, donator’s details. |
| F03 | Blogs | No data needed | Visiting page | F02 | General user visiting page. |
| F04 | Gallery | No data needed | Visiting page | F02 | General user visiting page. |
| F05 | Donators details | No data needed | Visiting page | F02 | General visiting page. |
| F06 | Feedbacks | No data needed | Sending feedbacks page | N/A | Simple feedback sending page. |

## **Non-functional requirements**

It is used to derive that how the system works or behave. For example: scalability, performance, availability, security, maintainability and so on.

|  |  |  |  |
| --- | --- | --- | --- |
| N.ID | Function | Rational | Remarks |
| N01 | Responsive | Support different resolution | Fits in different sizes of devices and also support in every browser. |
| N02 | Reusability | Easy to use. | The system code can be reused or can be taken for references. |
| N03 | Scalability | To be able to handle overflow of workloads | The system can handle the flow of incoming data. |
| N04 | Security | To protect the system form being hacked and cracked. | Security precautions shall be taken. |
| N05 | Performance | To maintain system’s productivity | Good design and regular tests to be focused |
| N06 | Usability | Easy learning and user friendly. | Codes are simple and interface are user friendly. |
| N07 | Maintainability | Easy to change. | Easy maintenance and optimization. |
| N08 | Reliability | Exact output | Gives accurate output as per input given. |

## **Moscow prioritization**

It is the most widespread procedure for handling requirements and normally used to help basic stakeholders recognize the meaning of advantages in a particular statement. It has three types which are explained below in detail:

|  |  |  |  |
| --- | --- | --- | --- |
| **Must have** | **Should have** | **Could have** | **Won’t have** |
| Bank details for donation,  Post blog,  Donator’s details. | login,  Call to action,  Feedback,  Contact. | Gallery,  Videos. | Direct donation through website. |

Fig: Moscow Table of functional requirements.

The Moscow prioritization of non-functional requirements are listed below:

**Must have:** Responsive, Reusability, Scalability, Security, Performance, Usability, Maintainability and Reliability.

## **Software Requirement specification**

**Software requirements**

* Window vista, 8.1, 7, 10 or Linux.
* Any browser such as: Firefox, internet explorer, chrome and so on.

**Hardware requirements.**

* Processor: i3, i5, i7.
* Memory: minimum 4 GB RAM.
* Video card: Intel HD 5500.

# **Use Case Diagram**

Use case diagam is pictorial representation of user’s interaction with the system that express the relationship between the operators and different use cases in which the operators is involved. Here in this diagram I have defined two actors as admin and user where admin can perform CRUD operation and login whereas user can send feedback and then view all the things that admin has posted in the website.

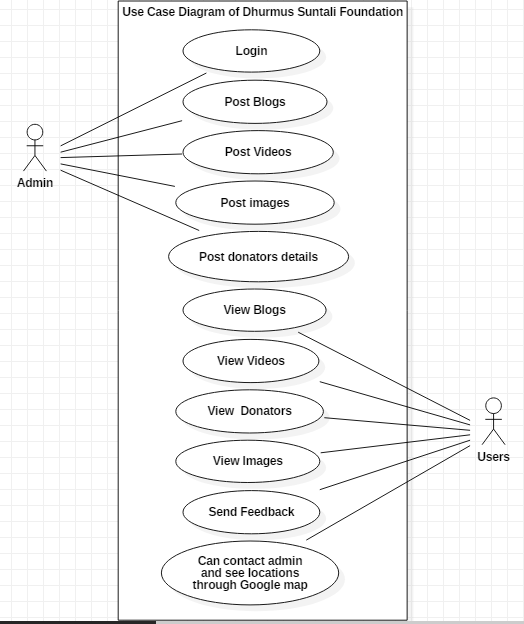


Fig: Use case diagram of Dhurmus Suntali foundation.

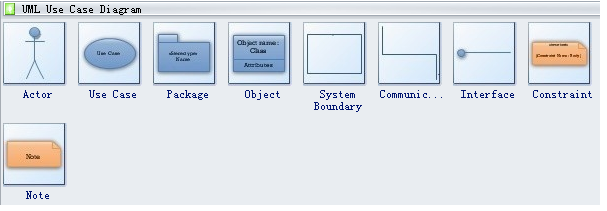


Fig: notation used in use case diagram.

|  |  |  |
| --- | --- | --- |
| ID | Title | Describe |
| 1 | Login | Authentication |
| 2 | Post blog | Displaying information |
| 3 | Post videos | Display videos |
| 4 | Post image | Display image |
| 5 | Post donators details | Display all the details of donators |
| 6 | View blog | User can see all the information posted by admin. |
| 7 | View videos | User can watch the videos posted by the admin |
| 8 | View donators details | User can see their as well as others donation details. |
| 9 | Can contact admin and view the location through the google map. | User directly can contact to admin through email or phone number or can track the location through google map. |

Fig: Table of explanation of the cases.

# **NLA (Natural language Analysis).**

Dhurmus Suntali charity Foundation website show different problems, blogs which are now happening in Nepal with details and as well as it provide the details of the donators who donate in need, also display the information about the different projects which divided into different parts as completed, ongoing and future projects where user can see all of these. User can see pictures from the gallery pages and can send their reviews. Except this all admin can post blogs, videos, images, donator’s details and so on.

But there is a small problem regarding with this website that is, in the current situation direct donation facility through this website is not available which means founders has not done agreement with those who provide online transaction services like eSewa, PayPal etc. but in this case they have to transfer money through the bank to the foundation bank details which is also provided in the home page of the website.

Nouns: Nepal, blogs, donators, donate, information, gallery, admin, images, donation, eSewa, PayPal, money, bank, transaction, home, website.

Possible class: blog, gallery, Login, videos, feedbacks, users.

From the above scenario we can classify the potential classes and methods as:

|  |  |
| --- | --- |
| **Potential classes** | **Potential methods.** |
| Users | View donators details |
| Admin | Edit or update donor details. |
| Feedback | Delete donor details. |
| Gallery | Post Blogs. |
| Videos | Add Images to the gallery |
| Blog | Add videos. |
| Admin login | Give feedbacks or send messages. |

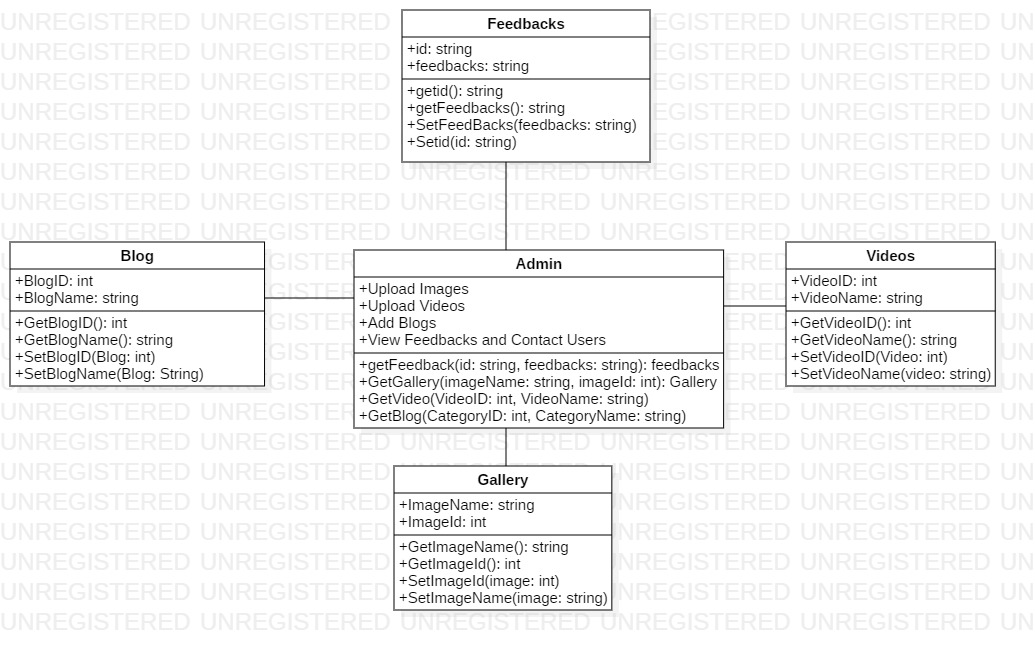


Fig: Class Diagram.

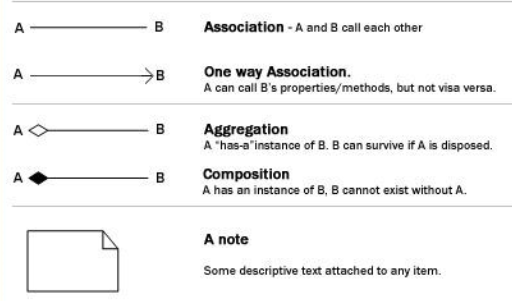
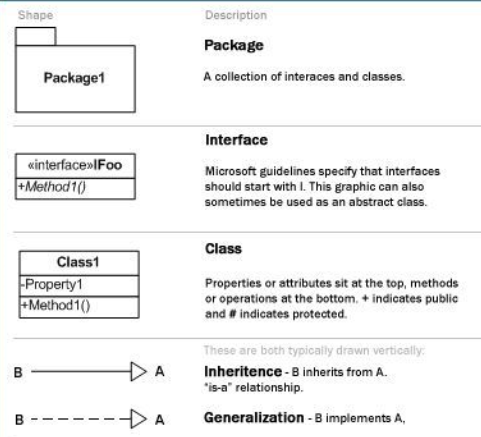


Fig: Notation of class diagram.