IT2211 Requirement Engineering

Department of Information Technology

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Requirement Engineering

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Submitted to

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INTRODUCTION

We have been assigned to analyze the requirement of system or the application so our group has decided to study our existing system that be the music store application called Lyre about the requirement and how the requirement helps the Lyre application to be successful.

The name of application was inspired by a stringed musical instrument of the ancient Greeks.

Our music store application was created to fulfil those who love to listen to the music. Our application is easy to user for every generation.

We provide a lot of interesting stuff such as user can adjust their own playlist, see the date and name of upcoming album.

Moreover, user can preview for their interesting song before they make a decision.

Also, our application will provide so many payment choices. For example, user can use their credit card in order to purchase songs or user can use online internet banking system.

Requirement Engineering Process

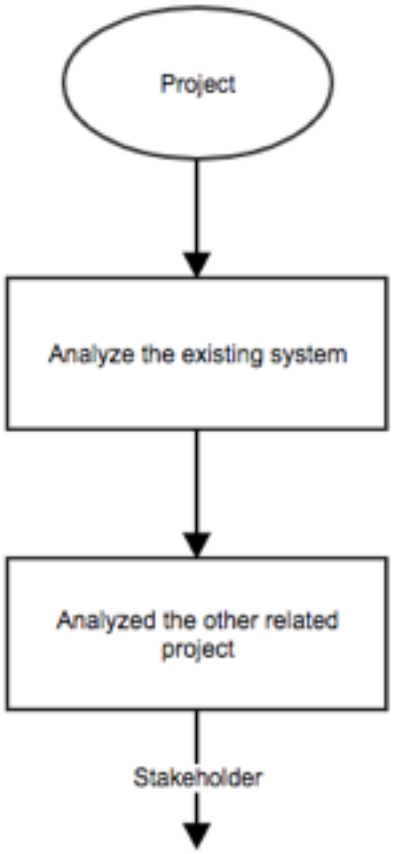
1. Inception

For this process:

1. The input of this process is the the project or the new system
2. Then the project flow in to the process called analyzed the old project , this process need to analyzed and observed the old project what is the failure and success point including the entities
3. Then it is need to analyzed the others related project and repeat the same task as well as old project.

Output:

1. We can get many stakeholders and all observations of all others and related projects



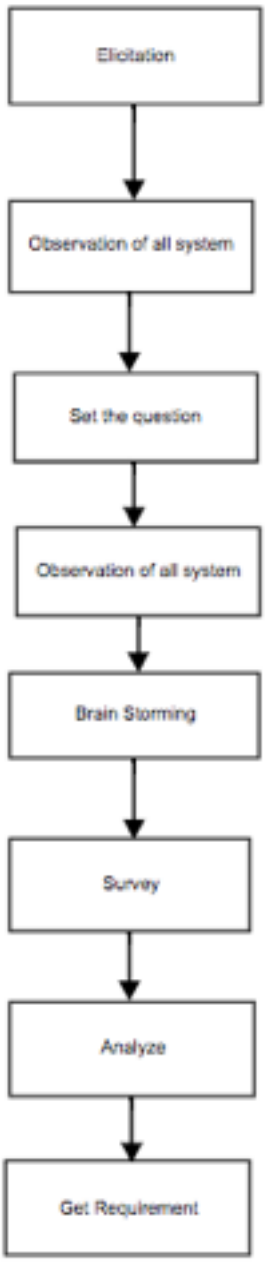
2 Elicitation

For this process:

1. We will use many tools for gathering the requirement such as follow:
2. We will use the observation technique for gathering the requirement because observation can let us know the good and bad point of the old system
3. Then the out put of the observation then t will go to questionnaire which are used and spread on the internet
4. The brainstorming process come to play play roll because its can helps us to think and be creative about the requirement
5. Then we will do the survey again to confirm our ideas that we generated on the brainstorming
6. Then task analysis and domain analysis come to play important roll for because of both tools can help us to confirm our requirements.

Outputs:

1. We get roughly requirements with out ant clustering



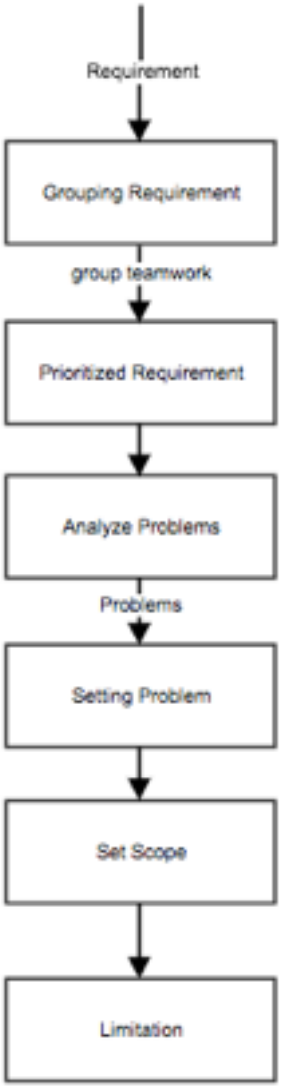
3. Elaboration

For this process

1. All the requirements must be analyzed by grouping them based on its details and also prioritized them in order to know which requirements are the most important.
2. After analysis, we can know the problem, for example problems from the old system, problem with the needs of customers, and problems with the technology.
3. Then we can set scope and know the limitation for our system or application.

Output:

1. We can group the requirement , regarding our project the requirement can be roughly grouped by user , functional , non-functional and system requirement.
2. We can specify the scope
3. Problem and limitation can be mentioned during this processes.



Example of Requirements:

Customers' story	Epic
As a customer, I want see obvious clear icon for create an account. The icon must not too big and not too small.	• Create an account
As a customer, I want to sign in with a few information in order.	• Sign in with credential
As a customer, I want to see the product that was alphabetically categorized in genre, artist, released date and Album.	• View products
As a customer, I want to hear some scope of a song so that I can make the decision.	• Trial products
As a customer, I want to make a playlist like a cart that allow me to add the songs and have a special price depended on number of the song.	• Create cart playlists
As a customer, I want to see the best song and album so that I can decide which one I want to buy it. Moreover, the new products also included.	• View the top songs, top albums and new one
As a customer, I want to mark some songs or albums that I want to buy it later or there is some promotion about that marked products.	• Favorite songs and albums
As a customer, I want to know the schedule of the song and album so that I can plan in advance.	• Released schedule
As a customer, I want to search for the music that I want by using keyword of Song name, artist and album.	• Search filters
As a customer, I want to see the others' users review and rating of the song in store.	• Read product review from other customers
As a customer, I want to write a comment and give rating for the song in store.	• Write product review
As a customer, I want to buy only one song or the entire album.	• Purchase products
As a customer, after I purchased, I want to check my order review via my e-mail or in my account.	• Review order
As a customer, I want to use a coupon from an event to this application.	• Redeem coupon
As a customer, I want to purchase as a gift and send it to my friend.	• Send gift

As a customer, I want to make an online-transaction by using Paypal, debit /credit card.	• Make online payment
As a customer, I want to see all orders that I have purchased before with arranged by date.	• View order history
As a customer, I want to know which song and album will be released in the application. Moreover, the promotions also be pop-up.	• Receive some notifications

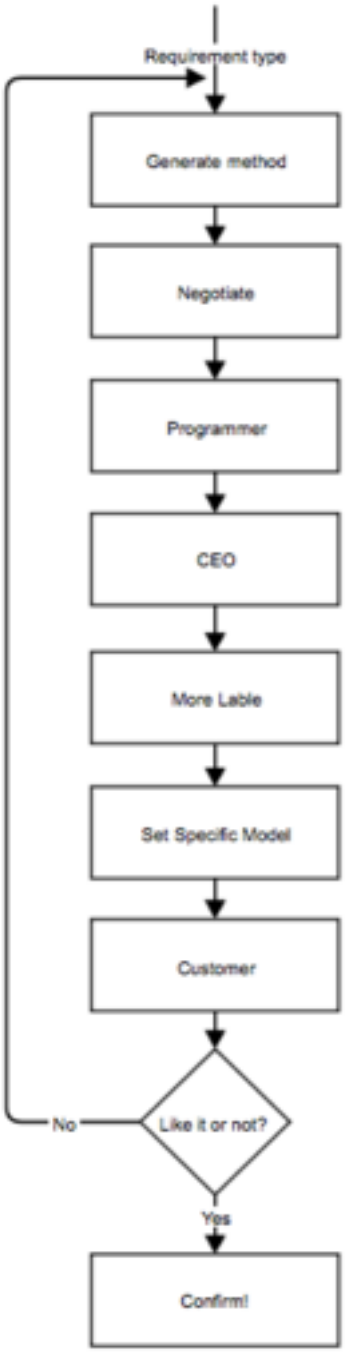
Customers' story	Acceptance Criteria
As a customer, I want see obvious clear icon for create an account. The icon must not too big and not too small.	• Create an account • Create through Facebook and Google+
As a customer, I want to sign in with a few information in order.	• Sign in with credential • Sign in with Facebook and Google+ • Forgot password
As a customer, I want to see the list of the product that was alphabetically categorized in genre, artist, released date and album.	• View products • Arranged by genre, artist, released date and album name
As a customer, I want to hear some scope of a song so that I can make the decision.	• Select a song and play
As a customer, I want to make a playlist like a cart that allow me to add the songs and have a special price depended on number of the song.	• Create/remove playlist • Add/remove song in playlist • Make payment
As a customer, I want to see the best song and album so that I can decide which one I want to buy it. Moreover, the new products also included.	• Select the best songs and albums • Mark as favorite or buy later
As a customer, I want to mark some songs or albums that I want to buy it later or there is some promotion about that marked products.	• Mark/unmark the songs or albums
As a customer, I want to know the schedule of the song and album so that I can plan in advance.	• Select the released schedule • Mark/unmark a favorite day • See detail of each day
As a customer, I want to search for the music that I want by using keyword of Song name, artist and album.	• Type the name, artist, and album
As a customer, I want to see the others' users review and rating of the song in store.	• Select the product's review • See the reviews • Link/unlike the reviews
As a customer, I want to write a comment and give rating for the song in store.	• Write/delete my own review • Rate the products

As a customer, I want to buy only one song or the entire album.	• Buy the product • Confirm buying • Show regulation
As a customer, after I purchased, I want to check my order review via my e-mail or in my account.	• Select order • See order list • Send order to shop owner • Mark the order
As a customer, I want to use a coupon from an event to this application.	• Type the code
As a customer, I want to purchase as a gift and send it to my friend.	• Send gift • Select friend
As a customer, I want to make an online-payment by using debit /credit card.	• Enter number card • Cancel payment • Accept/decline Payment agreement

Shop owner's story	Epic
As a shop owner, I want to create my account in the application so that can see my products and orders.	• Sign in with credential
As a shop owner, I want to see order from the customers so that I know which songs or album that customers but it.	• View purchase order
As a shop owner, I want customers to write how good about the products so I can improve it better.	• View product review
As a shop owner, I want to know how well my product be and how customers think about my shop and products briefly in each month.	• View summary report
As a shop owner, I want to know the best products that customers often buy it so I can manage a promotion or sale price.	• View best-selling product
As a shop owner, I want to know how many customers see in each product and the most one.	• View number and top click product
As a shop owner, I want to see all of promotions that I managed so I can know what promotions should be improve or cancel it.	• View promotions
As a shop owner, I want to see how many coupons are used and which accounts are use.	• View used coupon
As a shop owner, I want to see the messages from the customers.	• View customers' messages

Shop owner's story	Acceptance Criteria
As a shop owner, I want to access the application so that I can control and observe customers	• Sign in with credential
As a shop owner, I want to see order from the customers so that I know which songs or album that customers but it.	• Select the order history • See the order lists
As a shop owner, I want customers to write how good about the products so I can improve it better.	• Select the product • See the commend of the product
As a shop owner, I want to know about my shop and products briefly in each month.	• Select the summary report • See the report • Print the report • Mark the report
As a shop owner, I want to know the best products that customers often buy it so I can manage a promotion or sale price.	• Select the best product • See the lists of best product • Arrange by name, selling count and most view.
As a shop owner, I want to see all of promotions that I managed so I can know what promotions should be improve or cancel it.	• Select promotion lists • Modify promotion • Add/delete promotion
As a shop owner, I want to see how many coupons are used and which accounts are use.	• Select used coupon • The list of used coupon • Arrange by date and name account
As a shop owner, I want to see all premium accounts so that I can contact to those and offer the special promotion to them or about the premium information.	• Select premium account list • Send message to those
As a shop owner, I want to know how many customers refund our products so that I can know the problems and make it correctly.	• Select refund list • Arranged by name • See the reason or commendation
As a shop owner, I want to see the messages from the customers.	• Select message • See message • Reply message

4. Negotiation



For this process

1. From elaboration process, we can at least create simple model which can be in document form and will be used to show when we are communicating with stakeholders. As a result, everyone will gain the basic understanding of how the system will work and will be which can support their decisions.

2. In this process, first we have to present the model to CEO, Programmers, or stakeholder within the company for making any decisions, additions or developments.
   After that we will create another model that must be more specific in order to present to the customers but if the customers don't like it or it is not suitable with the budget then we must return to the basic stage and recreate again and find out what model that will be agreed for both stakeholders and customers.

3. If the completed model has been promoted then it will come to specification and validation process to check is it being built in the right way

Output:

1. We can get the confirmation about the the requirement from many stakeholders so the system can be implement correctly.

5. **Specification and validation process**

For this process

1. Prototyping is needed because we are creating music application so we must find if there are any bugs or errors and to find out what functions must be improved

2. After the prototype is created we must give it to end-users and let them try it out. Moreover, End-users can show us, if there are any conflictions or something that conflicts the customers when they are using the application or what should be improved.

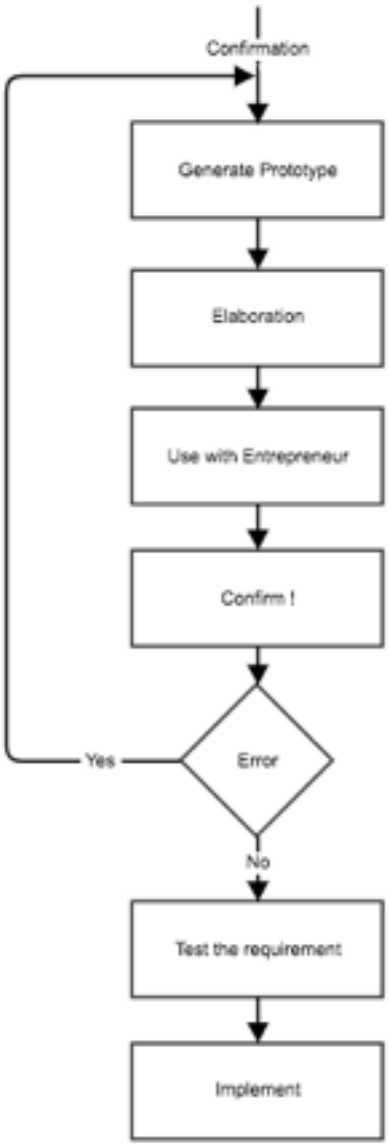
3. Use – case must be created to be used with the prototype in order to know the interaction of the users when they are using the application. So we can know it is hard to use or what should be added in the guideline to provide the users.

4. Prototype can show if there are any errors in the system to be fixed

5. After the prototyping process, we must test the system again to ensure that the system is being built in the right way. Then it will come to implementation.

Outputs:

1. We get the the confirmation for implementing the requirement management process
2. The use case is developed
3. Bug is fixed
4. The requirement has been tested

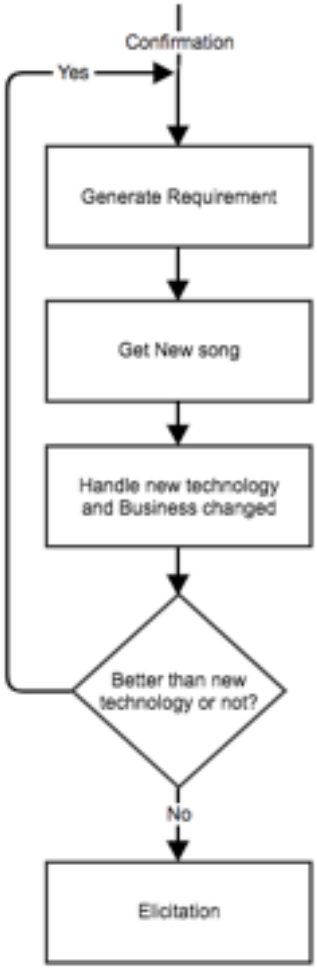


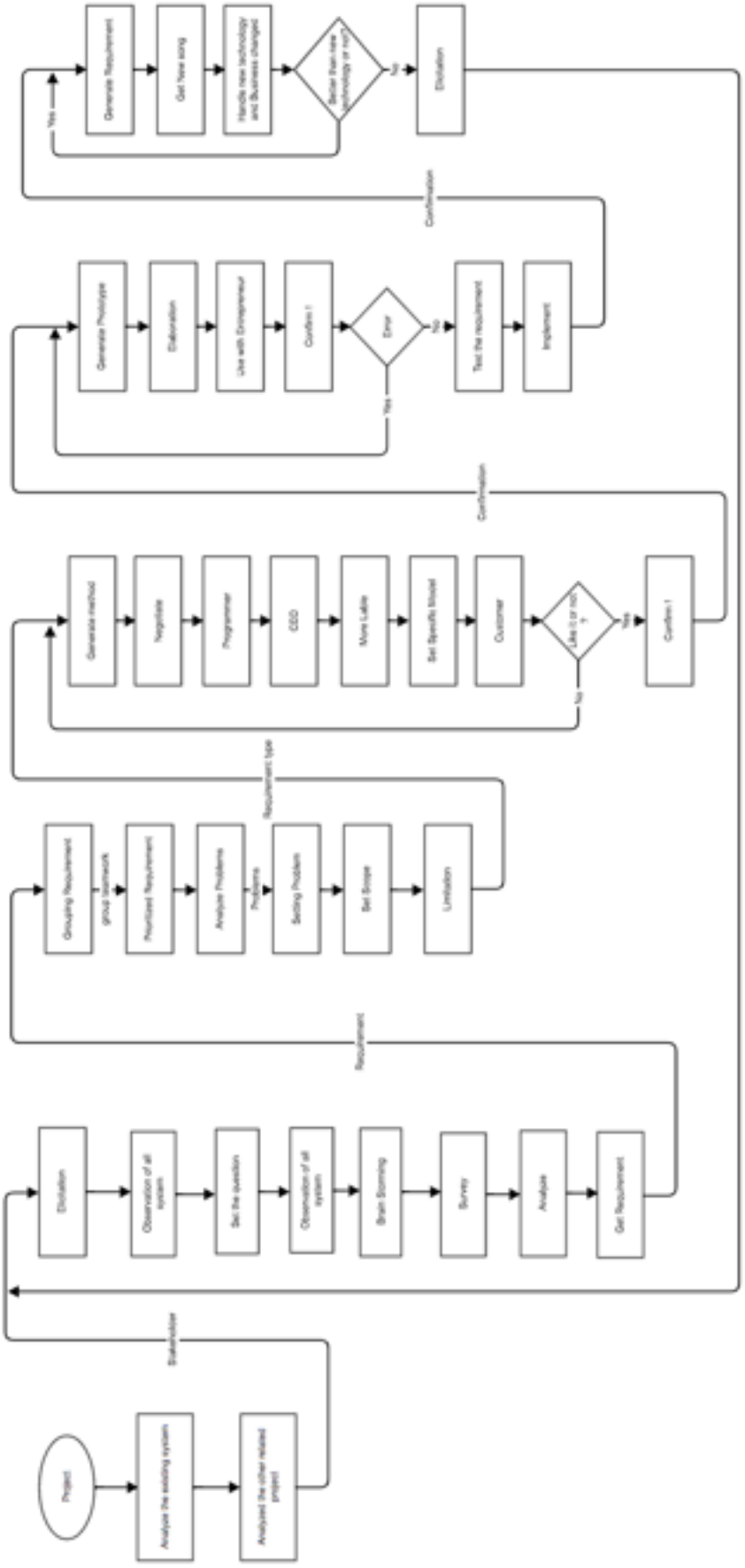
6. Requirement Management

For this process
1. All the details or information must be recorded into document form so everything will be back up.
2. As a music application we must be aware of the new songs and trend and must update the system to be related to the current situation.
3. We must be aware of any new technology and business changes as well. For example, if there is a new programming language that is better than the one that we are using so we have to study about that programming language and find out is it worth to change due to the benefit and the incoming problems
4. In business view , we must be aware if there is any new competitors.

Outputs:

1. We can gather the requirement including handling business changed and technology changed




Project
Analyse the existing system
Analysed the other related project
Stakeholder
Division
Observation of all system
Set the question
Observation of all system
Brain Storming
Survey
Analyse
Get Requirement
Requirement
Grouping Requirement
group Subtask
Prioritized Requirement
Analyse Problems
Problems
Setting Problem
Set Scope
Limitation
Requirement type
Generate method
Negotiate
Programmer
CEO
More Lable
Set Specific Model
Customer
Like it or not ?
Yes
No
Confirm I
Confirmation
Generate Prototype
Elaboration
Live with Entrepreneur
Confirm I
Error
No
Yes
Test the requirement
Implement
Confirmation
Generate Requirement
Get New sizing
Handle new technology and Business changed
Better than new technology or not?
No
Yes
Division

Requirement Engineering Tools

1.Questionnaires

Consist of open and closed questions which must be clear, defined and related with the domain of the system to be developed. Questions must focus on the problem and avoid redundant questions

Advantages :

- Can collect data from multiple stakeholders quickly. Data from questionnaires is considered as the most useful thing for establish fundamental elements for the system

Disadvantages :

- Can't expand on new ideas. It could be misunderstanding

Lyre use this tools because they have to deal with large amount of users so they have to use structured questions so it will be easy for both Lyre and the users

2.Requirement Workshop

It is the collection of the different type of meeting conducted for elicitation the requirement by the stake holder

Advantages:

- Complete set of requirement is provided
- Requirement is mostly unchanged

Disadvantage:

- It is very expensive to implement this technique
- Slow requirement elicitation

Gathering requirements is very important for Lyre because different people have different preferences in music so they have to gather the requirements carefully in order to satisfy the users and one of the most important requirements is that Lyre set themselves as a music store application so we have to provide how our application better than the other to the users in an appropriate way.

3.Prototyping

It is the mission of the product lunched in to the market to provide the service for the costumer. It's the sample of the product

Advantage:

- Provide the detail of the information
- Provided the conjunction of others technique such as the elicitation also

Disadvantage :

- Sometime it is very expensive
- User resist making change

For prototyping, Lyre must create prototype version in order to find out the interaction of the users when they are using the application so they can know which function is conflict of the users or which function must be improved.