ASSIGNMENT 02 FRONT SHEET

Qualification	**BTEC Level 5 HND Diploma in Computing**		
Unit number and title	Unit 09: Software Development Life Cycle		
Issue date	**16 Feb 2022**	**Date Received 1st submission**	**5 Mar 2022**
Re-submission Date	**12 Mar 2022**	**Date Received 2nd submission**	
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Student declaration I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.			
		Student's signature	Duy

Grading grid

P5	P6	P7	M3	M4	M5	M6	D3	D4

❒ **Summative Feedback:** ❒ **Resubmission Feedback:**

Grade:	**Assessor Signature:**	**Date:**

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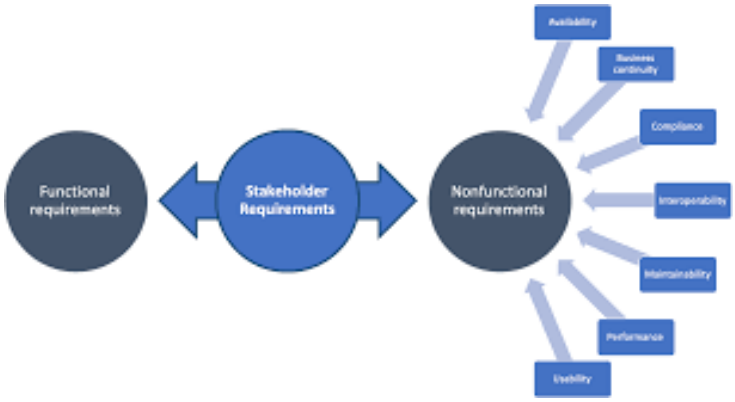
Task 1 – Analysis (1)

P5 Undertake a software investigation to meet a business need.

Identify the stakeholders, their roles and interests in the case study. (P5)



IMPORTANT STAKEHOLDERS

FOCUS ON APPLICATION (APPLY TO TUNE SOURCE PROJECT)

Any individual, group, or entity with an interest in a company and also the consequences of its activities is brought up as a stakeholder. Stakeholders include employees, customers, shareholders, suppliers, communities, and governments, to call some. Diverse stakeholders have varying interests, and businesses must constantly make trade-offs so as to please all of them.

Stakeholders are available in a spread of shapes and sizes:

Customer:

-Roles: Tune Source (Music Company) sponsored the project care on Quality and value of the product/service

-Mission: Tune Source (Music Company) sponsored the project. -

Many individuals feel that a company's sole purpose is to satisfy its customers. Customers are satisfied.

stakeholders within the sense that they're influenced by the standard and value of the services/products, Passengers who travel with an airline, for instance, are essentially putting their lives within the hands of the corporate.

Users/ Communities:

Those who [Tune Source's consumers, Tune Source's employees] seek, download, and pay. Theyexplore for, download, pay for, andhearmusic via the software platform.you ought toensurethat your platformis simpleto use (UX/UI).

'User Communities playa vitalinfluencewithin thesuccess of major companies thatopt toestablish there.a varietyof variables impact them, including job creation, economic development, health, and safety. Whena giantfirm relocates to or leavesatiny lowtown,it'san instantaneousand significant impact on local employment, income, and spending. Because they alter the environment, certain industries may have a detrimental impact on health.

Partners:

-You: Tune Source Project Manager

The List Could be my Company's partners

It's possible that they're going tobe my company's partners

- Microsoft Azure (Cloud platform)
- Amazon Web Services (AWS) (Design, Develop, Deploy in cloud)
- WordPress - Payment system froma 3rdparty (APIs, MasterCard, VISA, Net Banking)

Government:

-Mission: Taxes and Gross Domestic Product

You pay taxes (at least 20% of gross profit), and you follow government regulations when doing business or delivering IT projects.

Governments might also be considered major shareholders during abusiness since they collect taxes from the firm (corporate income taxes), all of the individuals who work for it (payroll taxes), and other coststhe corporateincurs (sales taxes). The contribution of companies tothe overall Gross Domestic Product (GDP) benefits governments.

Employees:

-Who is it: Microsoft Azure Team (Microsoft Azure company and a few members from customer side)

-Mission: Employment income and safety within the workplace

Business Analyst, Software Developer, IT Manager, Top Management who supports the projectthat'sto be produced

Employees havean on the spotstakewithin thecompany since they work there for a livelihood and receive additional benefits (both monetary and non-monetary).looking onthe characterofthe corporate(for example,within thetransportation, mining, oil and gas, and construction industries), employees may have a health and safety interest.

Investors:

-Who: Any big boss

-Mission:

to getfinancial returns

Investors will be divided into two categories: stockholders and debtholders. Shareholders invest funds within the company with the intention of receivinga particularrate of return.

Many investor shave an interest within the concept of shareholder value. This group includes all extra capital providers,likelenders and potential acquirers.

Not all stakeholders are shareholders, but all shareholders are stakeholders.

.Roles of STAKEHOLDERS

-Bring us money as a consequence

-For management

-Assistance in making decisions'

-Corporate Social Responsibility

A System Requirements Specification (SRS)

is a crucial document or set of papers that describes the features and behavior of a system or software program.it'smadeofvarietyof characteristics (explained below) that aim to define the client's desired functionalityso asto satisfy its varied consumers.

Review the requirement definition of the project. Clearly indicate which stakeholder(s)provide what requirements. (P5)

Write the requirements here: What is SRS? (3-5 lines System Requirement Specification)Identify the requirements for the project?

Sl.	Requirements	Responsible Stakeholder
1	Search for songs	Tune Source and users
2	Add more new songs or albums	Tune Source and Artist
3	Download songs and pay online	Users, 3rd party paymentsystem
4	Purchased a new song or albums	Users, 3rd party paymentsystem
5	Gift a new song or albums with online pay	Users, 3rd party paymentsystem

Business Need ***(P5)***

Identify FRs and NFRs of Tune Source Project

Functional Requirements: (FRs)

(technical specifications supplied by the customer/users)

These are the features that the tip user encompasses astrong desire for the system to deliver. Allof those characteristics must be incorporated within the system asa part of the contract.

These are represented or articulated within the variety of system input, operation execution, and desired consequence.they're essentially the user's specs, which are visible within the final product straight away.

- The music playback system could include some additional adjustments supported the user's demands,like playback speed, music off timer, etc. - The search system should allow users to locate the songs, albums, or artists they desire.

-the acquisition system must support third-party applications that assist users in making online payments.

A Non-Functional Requirements (NFRs) (Basically, related to quality): EXPECTED

These are the project-specific quality requirements that the system must fulfill.

Contract betting on things, the importance or extent to which these elements are included changes.

the undertaking

- - Optimize the applying to decrease latency when attempting to find music, downloading songs, and paying for songs online,likespeed of search and download (faster, indexing)

- Boost payment security (encrypted payment service) for online payment methodsliketaking note ofmusic online (samples),and buying gift cards.

- platform user-friendly (UX/UI) (APP/Web): Enhance system interfaceto enhanceuser experience and reach more new clients,like subscription and payment online

- Enhance Scalability (Can Tune Source expands its platform in future).

- Convenience (Go offline)

- Secure

Business Function

Business Need (Tune Source Requirement)	**Functional**
-Selling digital (By Website, though Kiosk)	-Download in Website Tune Source (Download by 1 click, verify as VIP member or Guest), or buy though in kiosk such as Music Disc)
- Search for music in our digital music archive	-Search functional (Search by click, search for information about the thing customer looking for)
-Listen to music samples	-Sample music functional (Listen by 1 click, may be limit speed downloaded)
-Purchase individual downloads at a fixed fee per download	-Purchase button with a fixed free (Verify as VIP membet or Guest. If VIP member, download with maximum speed downloaded)
-Purchase music download gift cards	-Give information to customers, Gift card sales address in their country
-Website features	-Dynamic Website, need update for changes everyday (Dynamic website to attact more customers, and make customers buy more easily)

Discuss the relationship between the FRs and NFRs (P5)

They basically deal with these common issues like:

-Portability

-Security

- Maintainability

- Reliability

- Scalability

- Performance

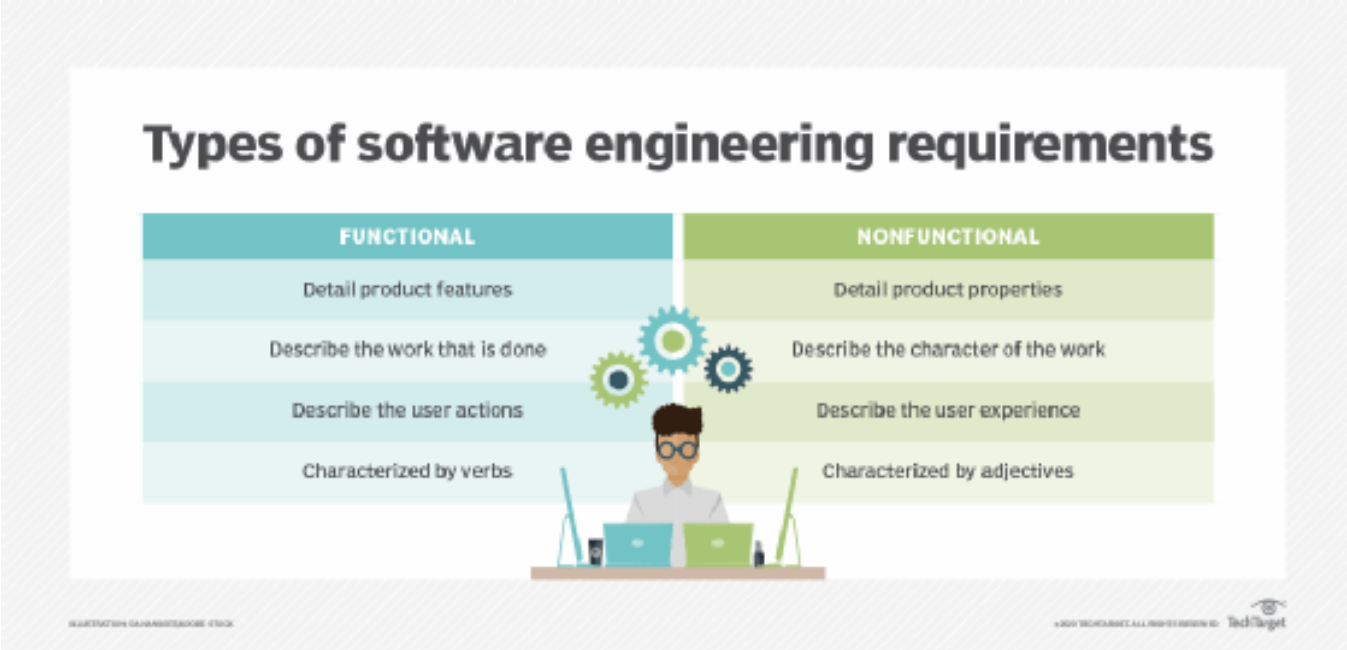
-Reusability

- Flexibility

Different between RFs and NRFs

Parameters	Functional requirement	Non-Functional Requirement
Requirement	Mandatory	Non- Mandatory
Capturing type	captured in use case	captured as a quality attribute
End-result	Product feature	Product properties
Capturing	Easy to capture	Hard to capture
Objective	Helps you verify the functionality of a software	Helps you to verify the performance the functionality of a software
Area focus	User requirement	User expectation
Documentation	Describe on what product does	Describe on how the product works
Type Testing	System, API testing, end to end, integration	Performance, testing, stress, security, Usability
Test Execution	Before Non-Functional	After Functional Testing
Product info	Product features	Product properties

(https://searchsoftwarequality.techtarget.com/answer/Functional-and-nonfunctional-requirements, n.d.)



Discuss the technique(s) you would use to obtain the requirements (P5) and Demonstrate how to collect requirements based on chosen technique

Tools and Techniques: JAD (Joint Application Development), Interview, Observation, etc

1. Interviews

Interviewing stakeholders and consumersis usually the initial step in gathering project requirements.

Advantages

-once youvisitsomeone one-on-one,you'll geta far better level of engagement.

-Organizing a session withoneindividualis simplerthan coordinatinga gaggle.

Cons

-It takes longerto rearrangeonesession witha gaggleof individualsthan it does to planonesession witha bunchof individuals.

-You miss out on people bouncing ideas offeach otherduring agroup session.

2. Brainstorming

Brainstorming may be a technique for generating new ideas, particularly in a very group environment.

it's frequently used at the outset of a replacement project, with a spread of stakeholders present to record first ideas. most areen couraged to supply ideas at this early stage without worrying of being criticised.

Pros

-You'll generate a slew of recent ideas,which is able to facilitate your start on your project.

-You develop plenty of knowledge during a short amount of your time.

-A brainstorming session may help stakeholders feel more involved and motivated.

Cons

- Without the correct framework and a trained facilitator, the ideas will dry up or detonate on atangent.

-it is simple to become over-burdened with data.

3. Mind mapping

Gathering project requirements entails not only gathering the information, but also capturing, structuring, and making meaning of it all. Mind mapping may be an extremely efficient method of recording a brainstorming session.

Pros

-It facilitates the flow of information, either individually or in groups, allowing you to swiftly obtain a large amount of usefull knowledge.

-It functions in the same manner as your mind does — in a hierarchy — and pushes you to be analytical in order to discover gaps and trends.

-The structure allows you to go on to the next stage (sorting the information) before the

requirement collection is complete, saving you time and effort.

Cons

-Manual mind mapping (with pen and paper) is sluggish and disorganized.

-Without the correct tools, it can be difficult to transform ideas and goals into practical

4. Interview:

Interview other people by creating many questions: About Customer:

-Ask about *Search in Tune Source in our Digital Archive*:

What do you want to search about???

Are you have any idea for we support customer better ???

What you think about Tune Source support ???

Are you already update to VIP account ??? Answer their aswer, and asked again

5. Questionnaire:

We need generation about 1000 votes for Tune Source about type worth of satisfaction about Tune Source After 1 month of development project about Sell Digital Music at 3:00pm For Customer using Tune Source Website The questionnaire includes the following:

-How do you feel about Selling Digital Music of us Website (Bad, Good or Excellent)

-How do you feel about Fuctional LogIn (Bad, Good or Excellent)

-How do you feel about Download in Tune Source Store (Bad, Good or Excellent)

-How do you feel about quality of Tune Source Store (Bad, Good or Excellent)

Besides, do you have any unsatisfied about about Tune Source Digital Music, write with text.

6. Conclusion

So, for efficient cooperation. I choose Mind Mapping to get huge idea or information about requirement and solution to choose best way for Tuning Source. This make my Business more Efficient and fast Process

Task 2 – Analysis (2):

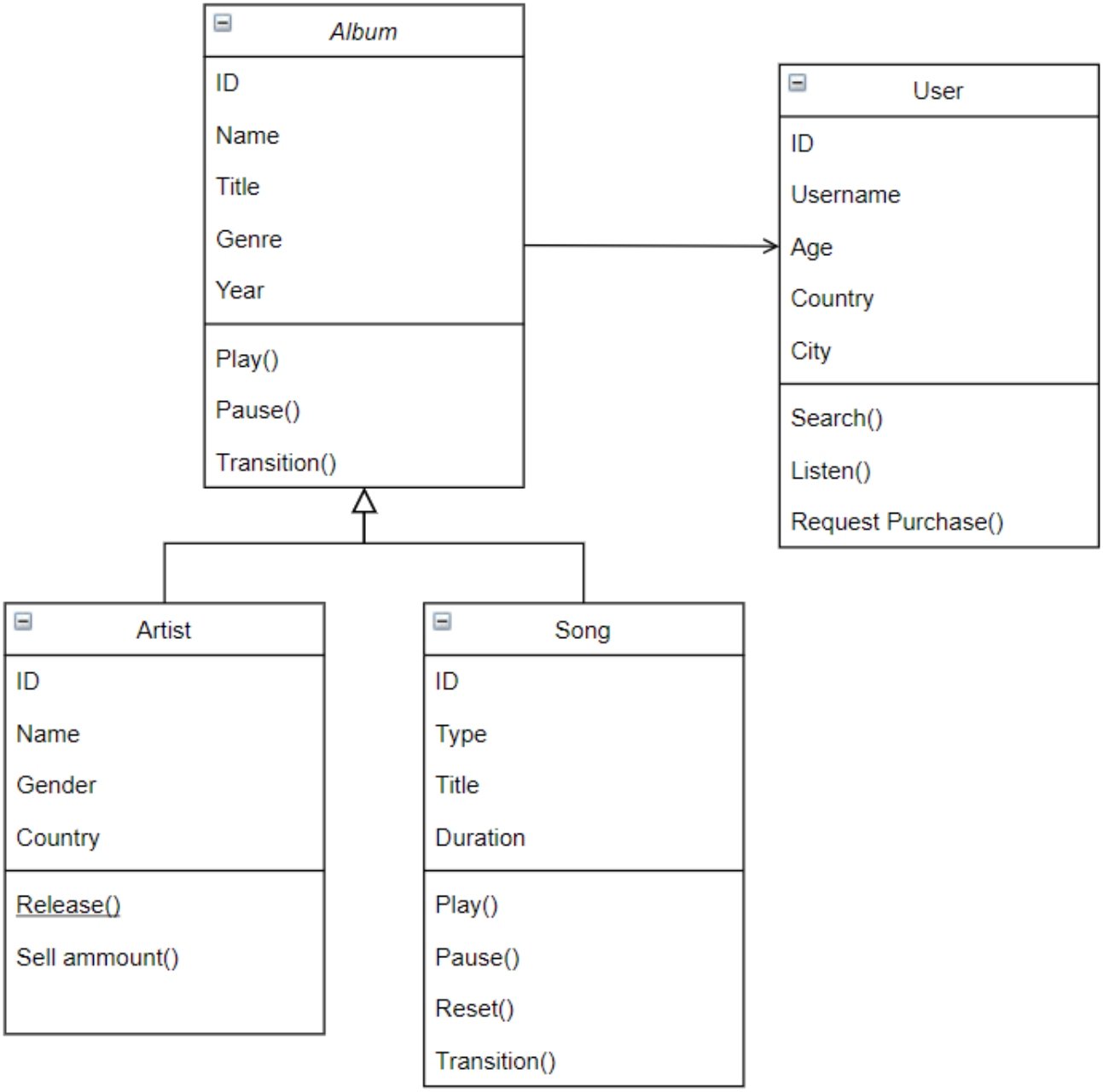
P6 Use appropriate software analysis tools/techniques to carry out a software investigation and create supporting documentation.

-Techniques: examples relevant to methodology chosen e.g. Context Diagrams, Data Flow Diagrams (DFDs), Entity Relationship Diagrams (ERDs); quality considerations e.g. Total Quality Management (TQM).

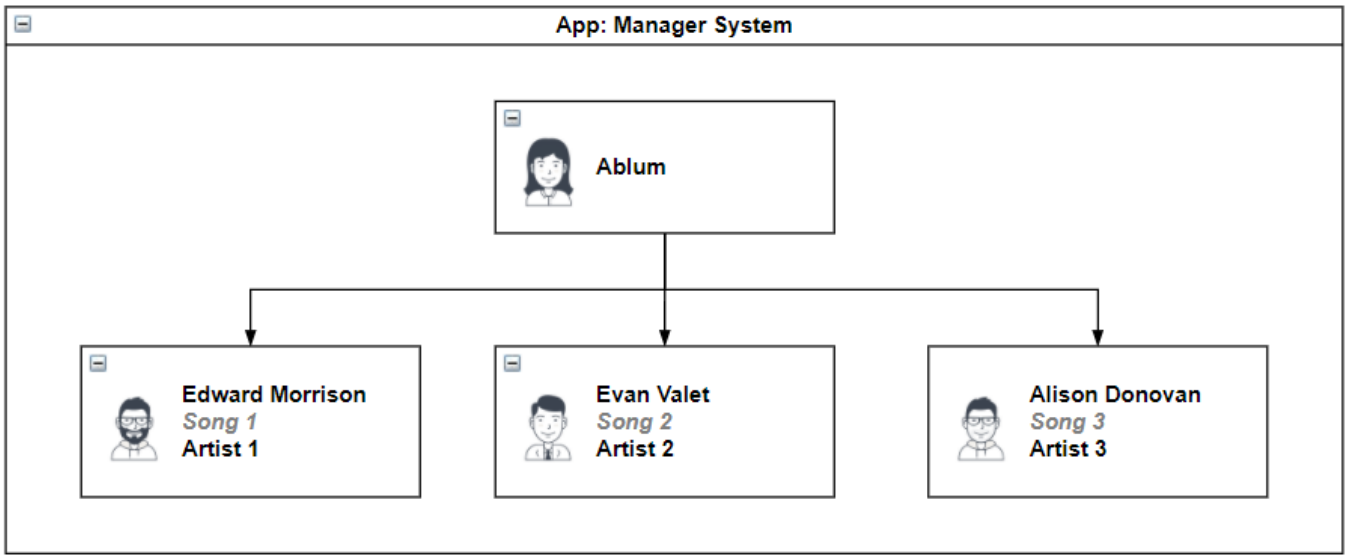
Analyse the requirements that you identified in Task 1 using a combination of structural and behavioural modelling techniques that you have learnt. (P6)

- **Structural (or Static) view** emphasizes the static structure of the system using objects, attributes, operations and relationships. It includes class diagrams and composite structure diagrams.
- **Behavioral (or Dynamic) view**: emphasizes the dynamic behavior of the system by showing collaborations among objects and changes to the internal states of objects. Thisview includes sequence diagrams, activity diagrams, and state machine diagrams

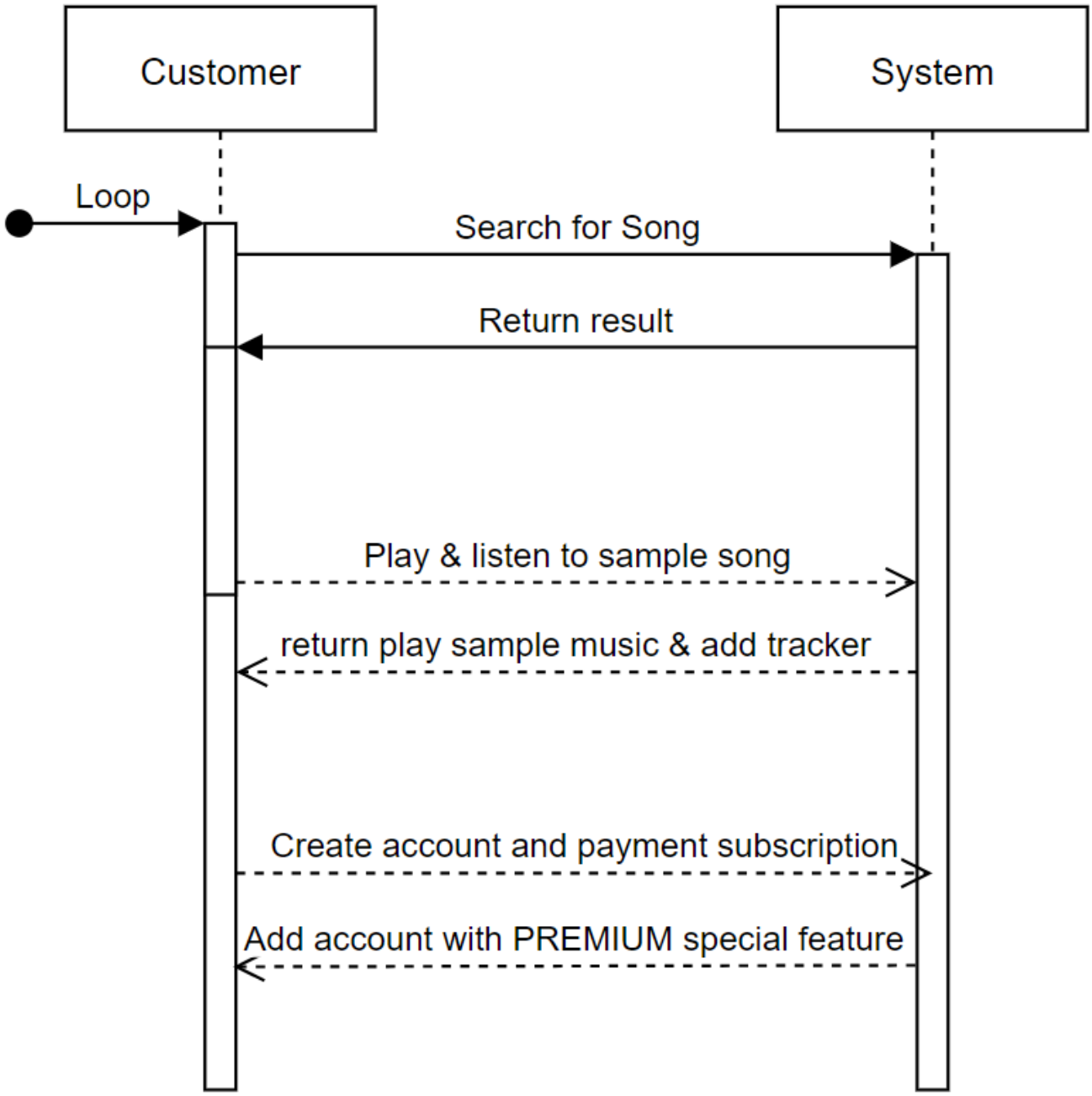
Class Diagram (Database diagram)



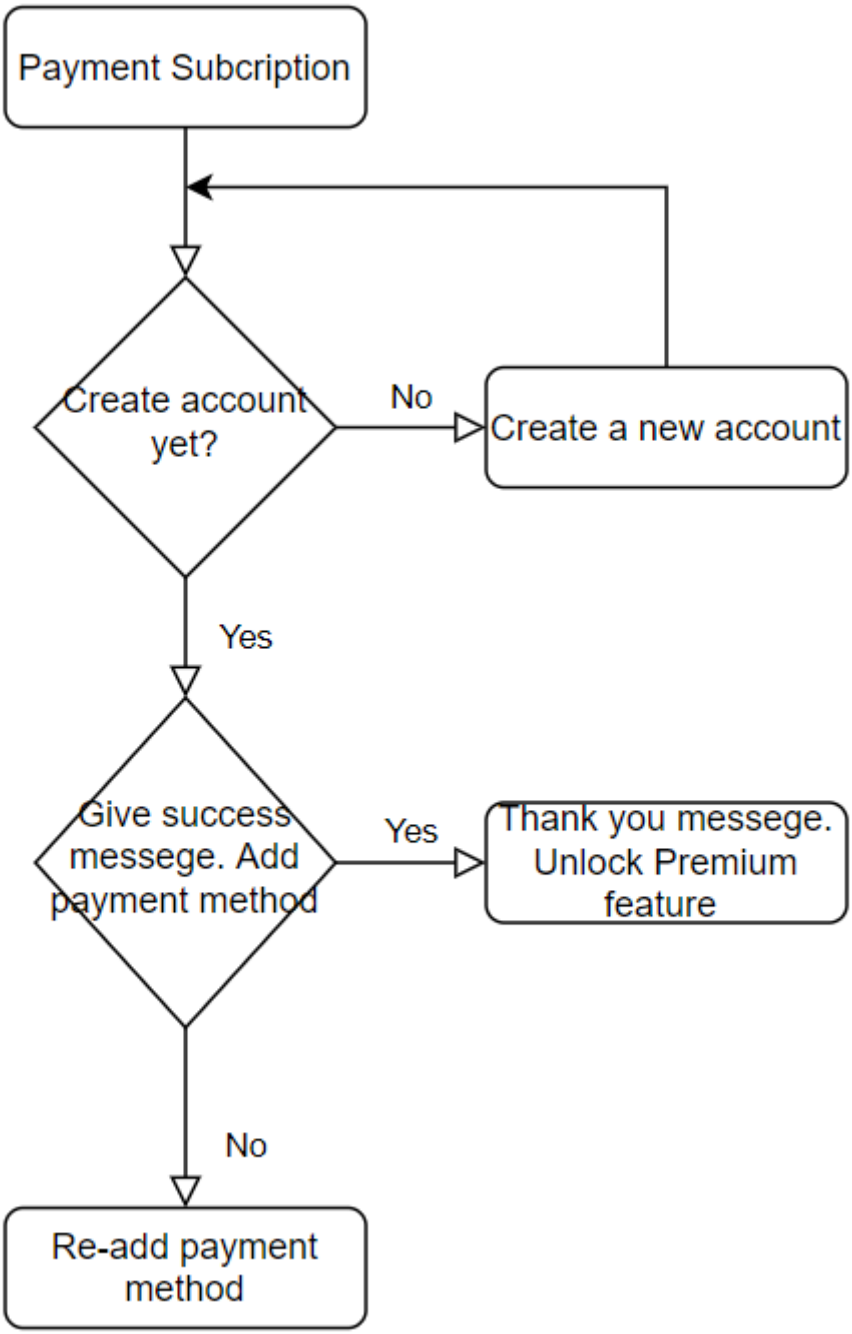
Composite Structure Diagram



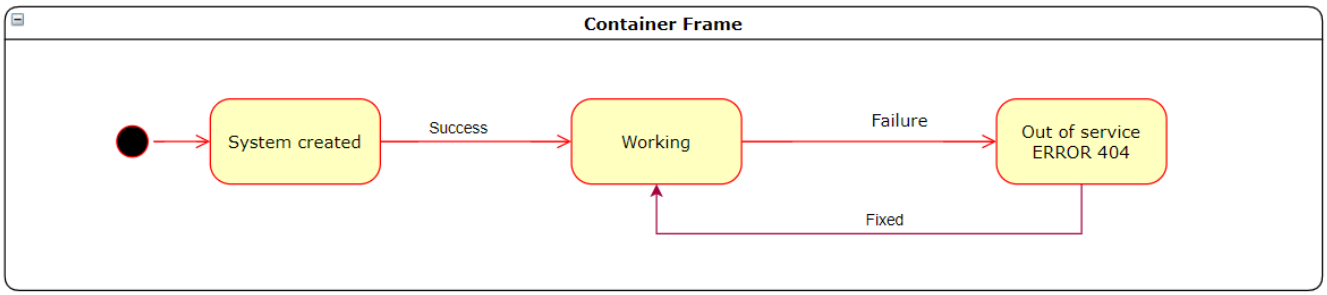
Sequence Diagram



Activity Diagram



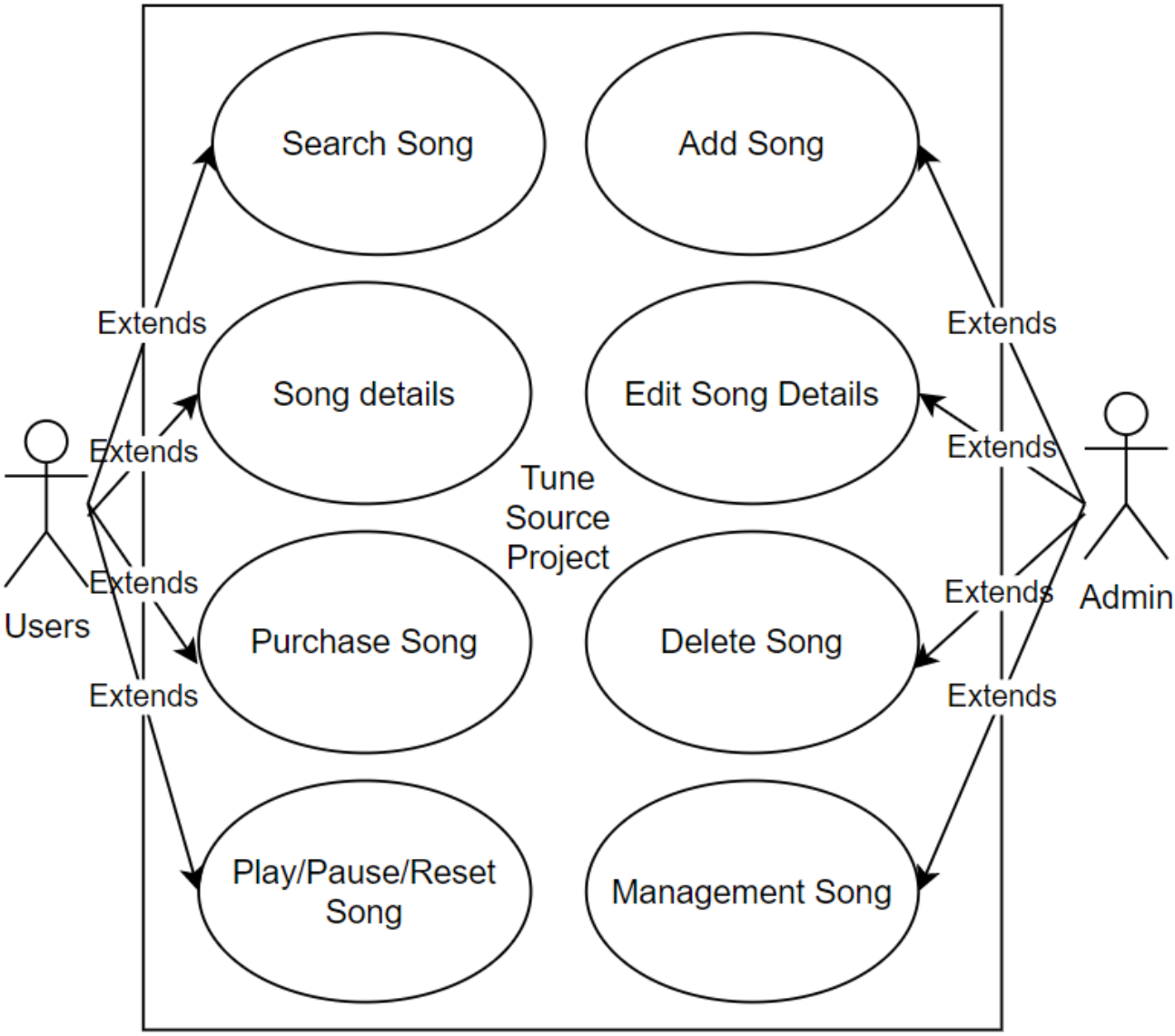
State Machine Diagram



- Use Case Diagram for the whole system (Example)(P6)

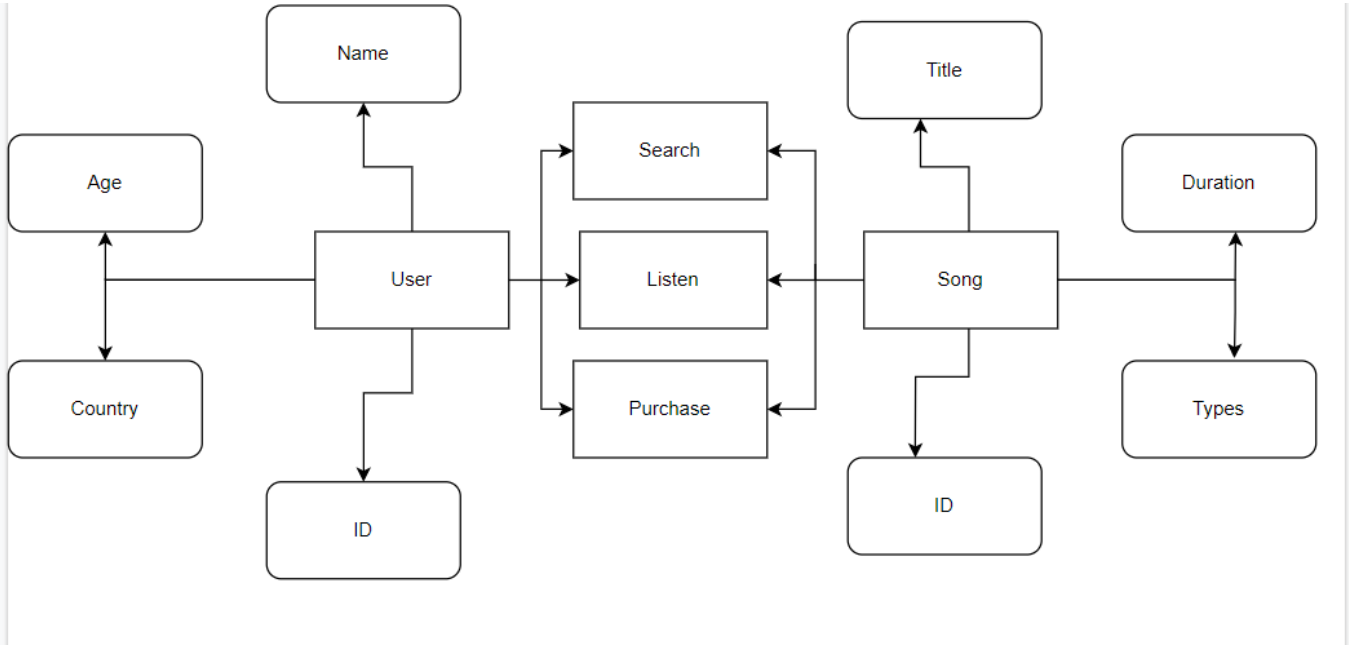
You have to design the use case diagram for the Tune Source Project. The below mentioned diagram is only for example

How the users interact with the system



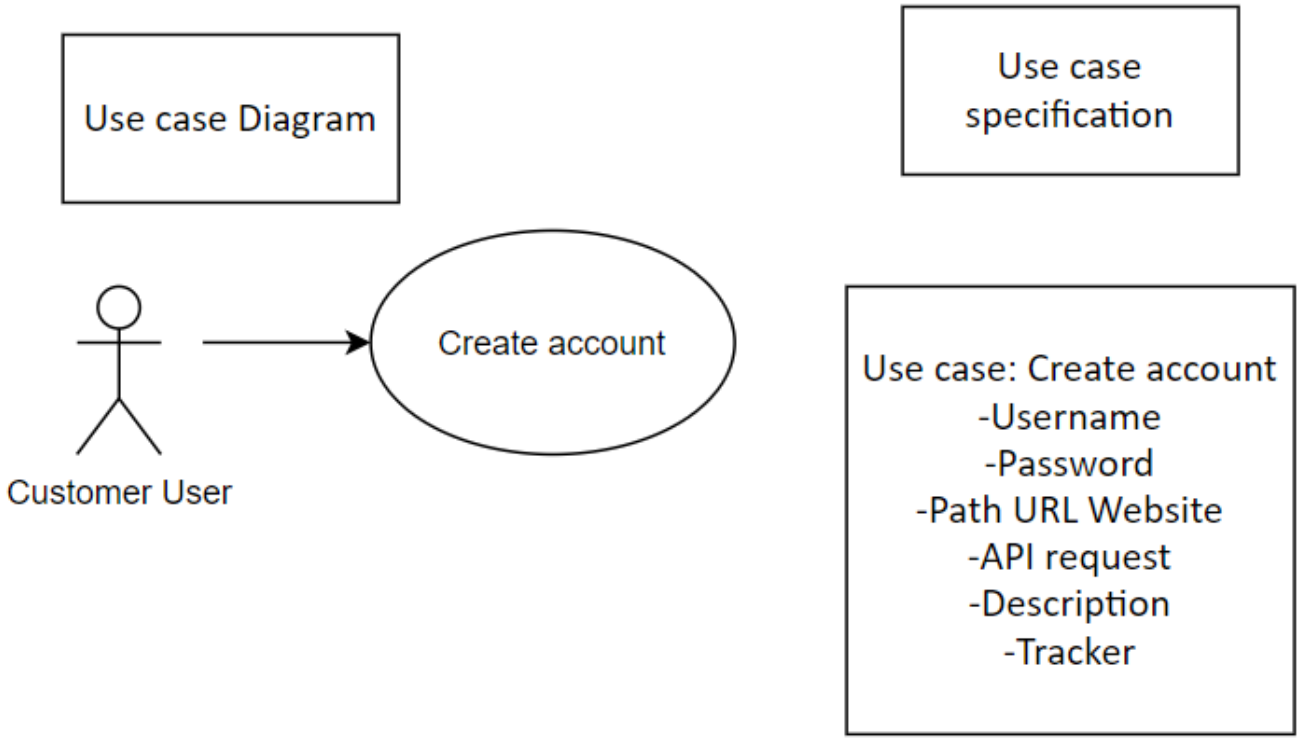
ERD (Entity Relationship Diagram) for the whole system (Example) (P6)

Entity Relationship Diagram (ERD)

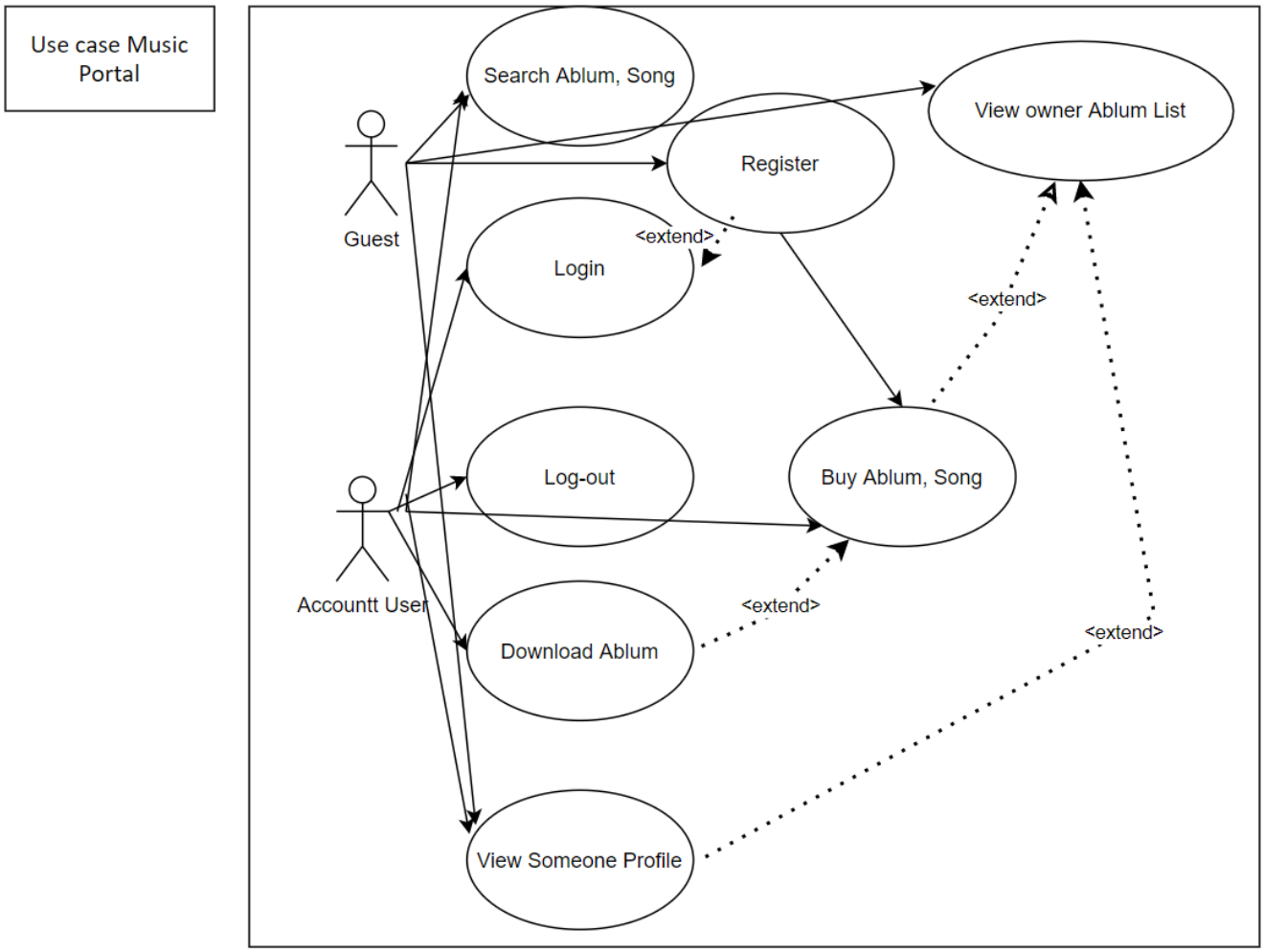


Scope: include to construct following items for the system

- Use Case specification for 2 Use cases (Example)(p6)



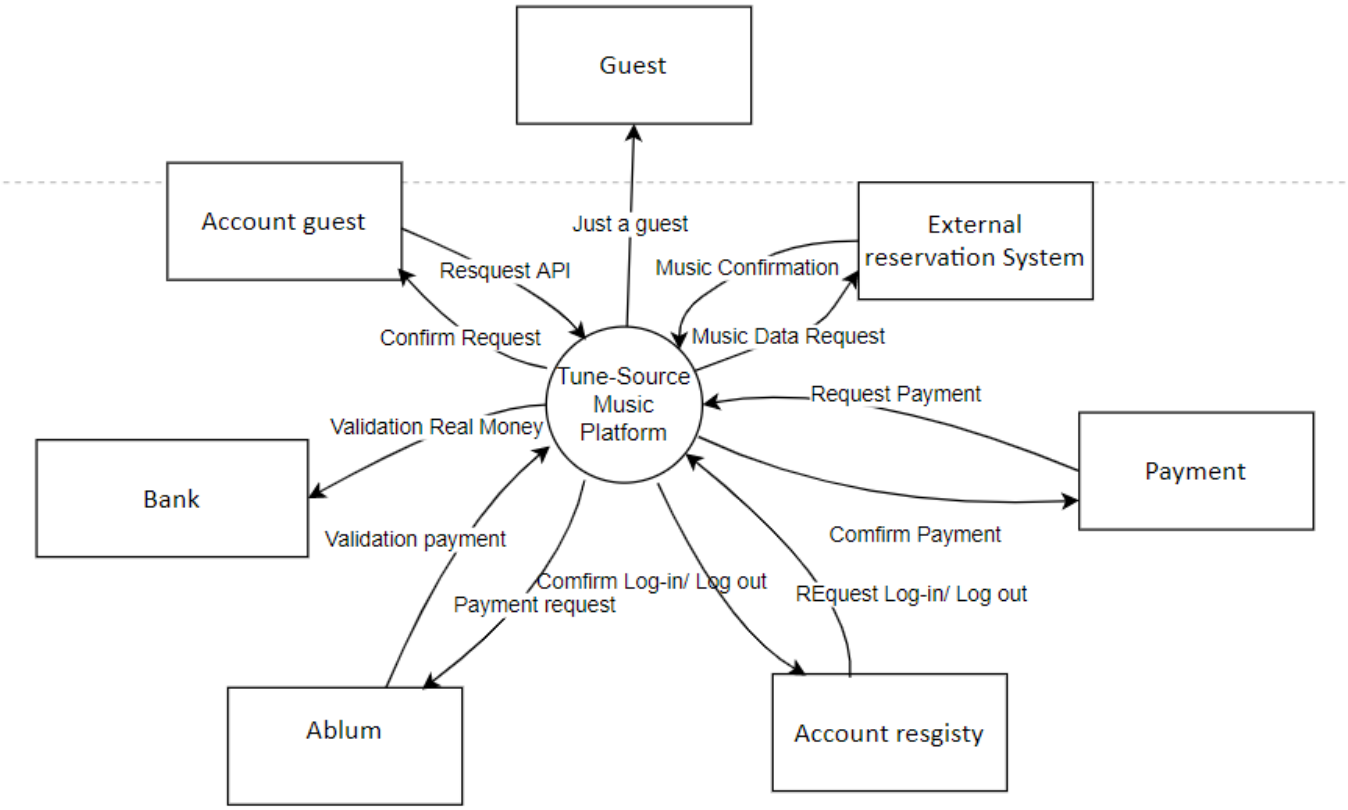
The below example is relevant with context to the Tune Source Project.



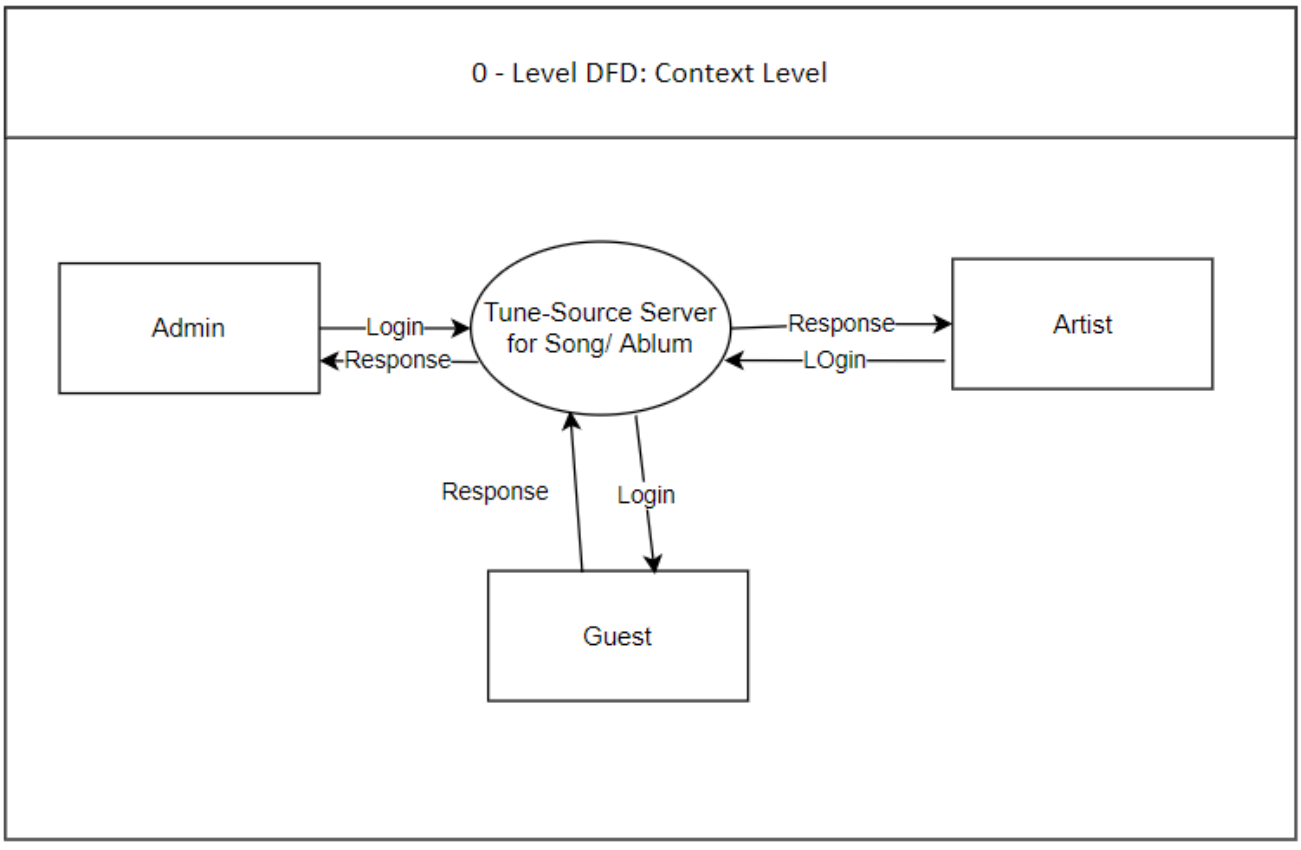
Context Diagram for the whole system (Example)(p6)

- System context diagrams depict a system in its whole, as well as its "inputs and outputs" from/to external elements. The system context diagram's goal is to draw attention to external elements and events that should be taken into account while creating a comprehensive set of system requirements and restrictions.

From Tune Source project. This is just to make you understand.



Data Flow Diagram (DFD) – Level 0 for the whole system (Example)(p6)



Documentation for the report:
issue statements (current system):

- No search functionality for rare music - No subscription and download gift card functionality

Process of data collecting and summary: Are you in the process of moving your data? You should transfer data from the old system to the new one.

Are you using a MIS report to collect data? (Management Information System).

How can a MIS report assist with a Tune Source Project?

Back up Source project Sourcecode ?

Task 3 – Design (P7)

Based on the analysis result, discuss how you would conduct the design phase:

Discuss how the user and software requirements are addressed in the design phase(P7)

- You will explain how Mockup and Wireframe are used in the project. (P7)
- You should include some of the mockup or wireframe (at least 5) design of theTune Source project to justify that it matches users' requirements (P7)

What is a Wireframe?

A wireframe is that the equivalent of your website/skeleton app's are basic black-and-white diagrams that emphasizea brand newproduct's or feature's usefulness or basic framework.
Wireframes arethe inspiration ofthe planning, on which everything else relies. They're

black-and-white graphics with plenty of grey boxes and text to depict how a product will look.

They're low-fidelity and straightforward to supply, so they're popular in brainstorming sessions.

All is employed to clarify a product's functionality like wise because the relationships between views (what will happen after youclicka particular button). During this stage, most choices about what (content/features) and where to put them onthe web site or app are made. The look of the merchandise isn't covered during this phase.

It doesn't need to be done by a UX designer, and it should be done on paper, on a whiteboard, or on a product management software. Product managers may be brought into assist.

(https://www.productplan.com/glossary/wireframe/, n.d.)

This is what wireframe look like on Tune- Source Account

Identify some of the wireframe and mockup tools: You may use of the templates and put into your report(P7)

What is a Mockup (App)?

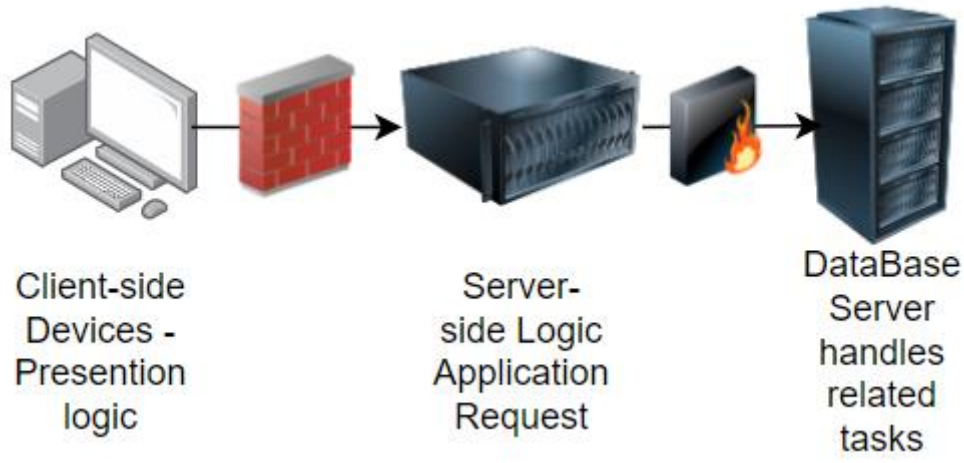
A medium-fidelity depiction will be provided by any mockup. Colors, fonts, text, photos, logos, and anything else that will help form your wireframe may be added now. The app's static map is the product of your work. While shaping this stage, keep User Interface Practices in mind. Outsource your wireframes if you don't have the resources to take them to the next level.

Mockups are static but accurate depictions of how a product or feature will look and work. Incorporate design elements like as color schemes, fonts, icons, and navigation elements into wireframes to take them to the next level.

All of it will be designed by a UX designer.

(https://fintechvietnam.com.vn/how-much-does-it-cost-to-outsource-mobile-app-in-vietnam/, n.d.)

Design 3 tier



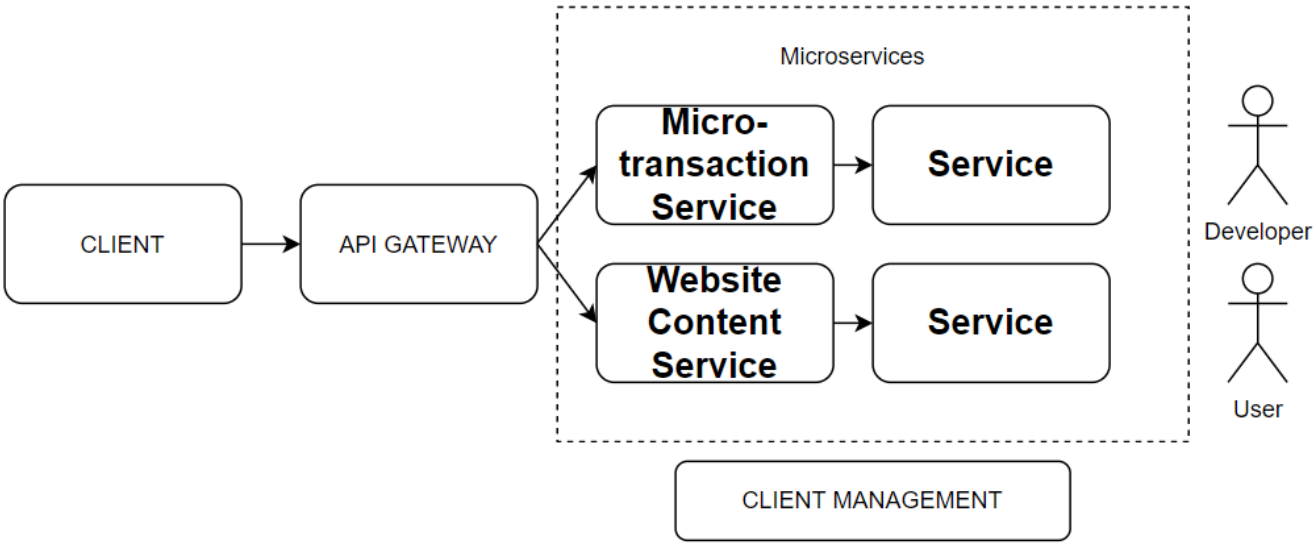
-To use less money to build

-Less maintainance

-While still it working

-2 version different of firewall for security

Micro-transaction & website API Service



In a nutshell, a microservice architecture is a method of developing a single application as a collection of discrete services, each of which runs in its own process and communicates through lightweight means, most often an HTTP resource API.

Reference list

Pass pls