


## ASSIGNMENT 01 FRONT SHEET

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<b>Student Name</b>	Vuong Toan Duc	<b>Student ID</b>	GCH200325
<b>Class</b>	GCH0906	<b>Assessor name</b>	Michael Omar
<b>Student declaration</b> 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.			
		<b>Student's signature</b>	

### Grading grid

P1	P2	P3	P4	M1	M2	D1	D2

☐ **Summative Feedback:**

☐ **Resubmission Feedback:**

**Grade:**

**Assessor Signature:**

**Date:**

**Internal Verifier's Comments:**

**Signature & Date:**

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## Introduction

In this assignment, this report will present identify the stakeholders, their roles, and interests in the case study in the first job - Analysis. Examine the project's requirements and specifications. Indicate the stakeholder's requirements (s). The FRs and NFRs for the Regulatory Source Project are then specified. Then I explain the distinction between FRs and NFRs. After that, I'll go over the strategy(s) you'll use to meet the requirements. Additional project assumptions may be expressed if necessary to support the technique(s) I choose. JAD, interviews, and observations are some of the techniques used. Then I show you how to collect requirements using the tactics you've chosen. Finally, I go over how to track these requirements using the Needs Traceability matrix throughout the project.

## Task 1 – Analysis (1)

### **P5. UNDERTAKE A SOFTWARE INVESTIGATION TO MEET A BUSINESS NEED.**

#### **I. Project requirement definition:**

- Project requirements are an important guide for the project, but many individuals overlook them in favor of the project team's perspective of what the user wants and requires. 'There is no hope of project success without a solid knowledge of what the project is seeking to achieve and keeping to that understanding.'<sup>3</sup> The project start date, scope, work boundaries, resource and people restrictions, project environment, deliverables, and budget are all things that must be determined.

- The project setting and the participant's characteristics are linked to the requirements for an effective risk management procedure carried out by a project participant. The nature of the project, the immediate working environment, the identities and activities of other participants, and the project's current status can all be used to define the context. Motivation, capability, and perceived duties in risk management are all characteristics associated with a certain project participant. The project setting and the participant's characteristics are linked to the requirements for an effective risk management procedure carried out by a project

participant. The nature of the project, the immediate working environment, the identities and activities of other participants, and the project's current status can all be used to define the context.

## **Type of requirement**

The fact that there are so many different types of regulations adds to the difficulty.

Explain why the project is being carried out using business needs.

Stakeholder requirements - describe the requirements of a certain stakeholder or stakeholder group.

Solution specifications - describe the characteristics, functions, and qualities of the product, service, or outcome that will meet the company's and stakeholders' needs.

Functional requirements describe how a product behaves.

Non-functional specifications It outlines the environmental conditions or characteristics that the product must meet in order to perform effectively.

Transition needs outline the temporary capabilities needed to transition from the current state to the desired future state.

Explain the actions, methods, or other circumstances that must be followed in order for the project to meet Quality criteria. Validation refers to any condition or set of criteria used to ensure that a project deliverable is completed successfully or that other project requirements are met.

Identify the stakeholders, their roles, and interests in the case study

### **I.1 Identify the stakeholders, their roles, and interests in the case study**

Stakeholders are people or organizations who may be impacted by or have an impact on a project. They may also include persons who have a strong intellectual, philosophical, or political interest in the project, even if they, their families, friends, and acquaintances are not directly touched by it.

Stakeholder	Objective	Requirement provided
Primary stakeholder	Individuals, groups, or entities participating in an organization's monetary transactions are referred to as primary stakeholders. This signifies that they have made a financial investment in the operations of a company.	Primary stakeholders rely on an organization for revenue and future stability, whether they are individuals who work for your business or high-level investment entities.
Secondary stakeholder	Secondary stakeholders are persons, organizations, or entities who have an interest in an organization's social transactions. Secondary stakeholders are typically not directly involved in an organization's financial operations.	<p>The concept of secondary stakeholders is not as straightforward as the concept of core stakeholders.</p> <p>Secondary stakeholders may not have immediate interests in an organization's continuous operations, yet they can nonetheless have significant influence over the organization's activities.</p> <p>Furthermore, even though an organization seldom relies on its secondary stakeholders to exist or fulfill its immediate goals, secondary stakeholders can nevertheless wield power over it.</p>
Key stakeholder	When someone is referred to as a major stakeholder, it simply indicates that they are one of the most important stakeholders in the company and its initiatives. However, there are several questions you can ask that will help you	<p>If you're looking for broad important stakeholders rather than key stakeholders associated with a specific project, you should start with your leadership team.</p> <p>The majority of your other workers will be stakeholders, but the extent to which they are critical to the overall existence of</p>

	choose who should be at the top of the list.	your organization is determined in large part by what they do.
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## I.2 Stakeholder role with an interest

Stakeholder	Roles	Interest	Note
Primary stakeholder	Primary stakeholders are so named because they have a critical role in an organization's existence. To be successful, nearly all firms must satisfy their major stakeholders. This is because major stakeholders can have a direct influence on an organization's actions.	Employees, investors, and consumers, among others, must have their demands met efficiently if firms are to succeed. This is frequently simple for corporations to execute since major stakeholders are usually small groups of people. Most firms meet the requirements of their major stakeholders internally.	A rent control policy benefits tenants but may hurt landlords.
Secondary stakeholder	Secondary stakeholders are typically the most vociferous owing to their relatively ad hoc relationship with organizations. They frequently act as advocates or spokespeople for stakeholder groups that are unwilling or unable to express their concerns for several reasons.	This indicates that the pleasure of secondary stakeholders is critical to the continued success of an organization's activities. Secondary stakeholders should be treated with the same respect as key stakeholders—if they become outspoken about a problem, an organization should accept their wishes.	A program to reduce domestic violence, for instance, could have a positive effect on emergency room personnel by reducing the number of cases they see.



Key stakeholder	<p>The role of a significant stakeholder in a firm varies based on a variety of circumstances. Key stakeholders' duties may include:</p> <ul style="list-style-type: none"> <li>• Requesting information on your company's current initiatives or previous developments</li> <li>• Providing financial assistance to your company</li> <li>• Assisting with business ambitions or tasks</li> <li>• Participating in corporate planning or leadership meetings</li> </ul>	<p>Although there may be some overlap between generic key stakeholders and key stakeholders for specific projects, these key stakeholder lists frequently differ. Employees, such as department heads or project managers, are more likely to be key stakeholders in a project. Key stakeholders in a project may also include specific groupings of target customers or associated vendors.</p>	<p>Other examples of key stakeholders might be funders, elected or appointed government officials, heads of businesses, clergy, and other community figures who wield a significant amount of influence.</p>
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### I.3 Identify FRs and NFRs of the Tune Source Project.

- A functional requirement is a technical characteristic of software that aids in the behavior and operation of systems. These characteristics are often programmed directly into a system's software by engineers. To assist a system in doing tasks correctly, software must meet functional criteria. Overall, functional requirements provide information on the characteristics and functions of a system.

Tune Source Functional Requirements:

- + Look for and moderate: You may search for music by category using the system. The categories will be further subdivided into subcategories like song names, vocalists, and music genres.
- + Online shopping: The system allows users to create accounts with it. This account will keep track of customer information such as phone numbers, addresses, and costs spent after purchasing music. People are free to download whatever they

wish. Furthermore, following payment, the information will be validated by the system. To begin the selected download, check the box.

+ Special offers: The system will remember the user's chosen music genres, and this information will be used to notify which music genres are popular on the website. When new users visit the site for the first time, this notification will stimulate their attention.

A system/software requirement that specifies a function that a system/software system or system software component must be capable of performing. These are software requirements that define the behavior of the system, that is, the fundamental process of transformation that software and hardware components of the system perform on inputs to produce outputs.

Functional requirement	Description	Example
System requirements	System requirements include software and hardware parameters. This might comprise the particular steps taken by a system to execute a task.	For example, if software archives data based on the date the data was stored by the user, it may search through all data to discover the oldest files before moving them to the system's archives.
Administrative protocols	Administrative protocols enable software to conduct administrative protocols, which are system-wide normal procedures. To guarantee that the software functions well, these procedures may involve system reporting and testing.	A software system, for example, may execute a monthly scan to identify areas for improvement, which the system may then include in a report. You can see the report to have a better understanding of your system's functionality and quality.
Business requirements	A typical functional requirement entails the criteria that a corporation must meet to function.	For example, a grocery shop may include a functional requirement requiring customers to input their phone numbers into a rewards system to obtain product discounts

A nonfunctional requirement is a feature that aids in the software's efficient operation. These features aren't essential for a system to function, but they can help improve the software's overall quality, speed, and storage capacity. Users can offer nonfunctional criteria to specify specific program qualities that promote usability. For example, if a user wants more data storage in their program, they can choose a software system that has a nonfunctional requirement for more storage capacity.

Operational:

- All payment information will be encrypted and safeguarded.
- The framework would be compatible with any Web browser as well as in-store kiosks.
- The digital music archive will be restructured so that it is simpler to find music by title, artist, or genre.
- If the download fails in the middle of the process, the client will be able to resume it.
- Download speeds will be monitored and kept at an appropriate level.
- Customer information will be kept safe.

Non-functional requirement	Objective	Example
Security	Nonfunctional security features entail the addition of mechanisms to safeguard valuable data. While most software has user authentication mechanisms	When a possible security threat is detected, an operating system will automatically shut down.
Localization	Nonfunctional requirements in software may include localizing data inside the software to	All foreign communications are translated by an operating system to the

	the user's locale. The program adapts to the user's location for the user to better grasp the information	language of the system's present location.
Performance	Nonfunctional needs can be installed by users to improve the overall performance of their system. Typically, the speed of a system is significant to consumers since they may desire a system that works rapidly.	A system has been enhanced with usability features such as a big cursor so that viewers can quickly recognize it on the screen and speech-enabled text, which allows users to type using their voices.

#### **I.4 Discuss the relationships between the FRs and NFRs.**

A table of FRs:

No	Functional requirement
1	Customers may be notified of special CD offers available at the daily Tune Source website or a Tune Source store depending on their preferences.
2	Purchase individual downloads for a set price per download
3	Purchase gift cards for music downloads
4	Create a customer subscription account that allows for limitless downloads for a monthly charge
5	Look for music by title, artist, or genre.
6	Play some music samples
7	Based on the samples chosen for listening, the gadget will maintain track of the customer's tastes and use this knowledge to propose music during subsequent visits to the website.
8	The marketing department will generate promos and offers for the website

9	Music selections might be personalized to the user on subsequent visits to the website based on prior purchases.
10	Search the digital music archive for the music.

A table of NFRs:

No	Non-functional requirement
1	Customer information will be kept safe.
2	Payment data will be encrypted and safeguarded
3	There will be no unique cultural or political prerequisites.
4	If the download fails throughout the process, the client will be allowed to restart it.
5	The digital music archive will be structured so that music may be found more easily by title, artist, or genre.
6	The framework would be used by any Web browser as well as in-store kiosks.
7	If the download fails throughout the process, the client will be allowed to restart it.

### **I.5 Discuss the approach/technique (es) you would take to obtain the requirements.**

This is the most typical strategy for eliciting requirements. Strong connections between business analysts and stakeholders should be built via the use of interview techniques. In this strategy, the interviewer asks questions of stakeholders to gather information.

Benefits:

- Participants in an interactive discussion.
- The prompt follow-up guarantees the interviewer's comprehension.

- By developing rapport with the stakeholder, you may encourage involvement

#### Basic Guidelines:

- The overarching goal of conducting the interviews should be obvious.
- Identify the interviews ahead of time.
- The interviewee should be informed of the purpose of the interview.
- Before the interview, interview questions should be prepared.
- The venue of the interview should be specified ahead of time.

#### Drawbacks:

- It takes time to arrange and conduct interviews.
- All participants must commit.
- Training is sometimes necessary to conduct good interviews.

#### Document Analysis/Review

This method is used to collect business information by reviewing/examining available resources that characterize the company environment. This study is useful for validating the execution of current solutions as well as understanding the business requirement.

#### Benefits:

- Documents already in existence can be used to compare present and future procedures.
- Existing records can serve as a foundation for future investigation

#### Drawbacks:

- It is possible that existing papers will not be updated.
- Existing documentation may be entirely out of date.

## Interface Analysis

The interface analysis method is used to examine the system, people, and processes. This study is performed to determine how information is transferred between the components. An interface is defined as a link between two components.

### Benefits:

- Provide any missing needs.
- Determine if rules or interface standards are required.
- Determine which regions may pose a danger to the project.

### Drawbacks:

- If internal components are not available, the analysis becomes harder.
- It cannot be utilized as an elicitation exercise on its own.

## Prototyping

Prototyping is used to identify needs that are missing or undefined. In this strategy, the customer is given regular demos by producing prototypes so that the client may have a concept of how the product will appear. Prototypes may be used to produce a mock-up of a site and utilize diagrams to illustrate the process.

### Benefits:

- Provides a graphical depiction of the product.
- Stakeholders can submit comments as early as possible.

### Drawbacks:

- If the system or process is extremely complicated, the prototype phase may take a long period.

- Stakeholders may be more concerned with the solution's design specifications than with the needs that any solution must address.

### Joint Application Development (JAD)/ Requirement Workshops

This technique is more process-oriented and formal as compared to other techniques. These are structured meetings involving end-users, PMs, and SMEs. This is used to define, clarify, and complete requirements.

This technique can be divided into the following categories:

- Formal Workshops: These workshops are highly structured and are usually conducted with the selected group of stakeholders. The main focus of this workshop is to define, create, refine, and reach closure on business requirements.
- Business Process Improvement Workshops: These are less formal compared to the above one. Here, existing business processes are analyzed and process improvements are identified.

### Benefits:

- Documentation is completed within hours and is provided quickly back to participants for review.
- You can get on-the-spot confirmation on requirements.
- Successfully gathered requirements from a large group in a short period.
- Consensus can be achieved as issues and questions are asked in the presence of all the stakeholders.

### Drawbacks:

- Stakeholders' availability might ruin the session.
- The success rate depends on the expertise of the facilitator.



- A workshop motive cannot be achieved if there are too many participants. (Top 10 Most Common Requirements Elicitation Techniques, 2022)

Techniques	Yes	No
Interview		No
Prototyping		No
Interface Analysis		No
Document Analysis/Review		No
Joint Application Development (JAD)/ Requirement Workshops	Yes	

### **I.6 Assumption about the project justifying the techniques that you have chosen.**

In a recent essay, I discussed the advantages of Joint Application Design (JAD) sessions. A JAD session is a workshop in which numerous project participants cooperate to outline the development of a software system, in case you missed it or are unfamiliar with the idea.

- Establish Specific Goals

The project's overall purpose is clear: design, create and install a software system. However, each JAD session will have a considerably limited scope. Before you put individuals in a room and expect them to do anything

- Stay Focused / Control the Scope

Once you've established clear expectations for the JAD, it's your job as the Facilitator to steer the session toward that goal. In general, it is ideal to limit the emphasis of each session to a specific functional area or use case. When concerns develop that veer off into other regions or themes, put them in a "parking lot" for later consideration. Set a time limit for talks and, if necessary, intervene to break

up distracting side dialogues. Don't go back and reconsider previously made decisions.

#### - Locate Appropriate Facilities

The physical placement of your JAD might either help or impede productivity. Make sure the room is spacious enough to handle the number of people that will be attending. Locate some comfortable chairs. Check that the A/V equipment is operational. Make coffee, water, and snacks available. Consider the layout of the room as well. According to popular belief, the optimum table layout is a U-shaped table facing a projection screen. This offers all participants a clear view of the contents being given, inhibits preconceptions of hierarchy, and allows the facilitator to wander around.

#### - Respect others

This should be self-evident. When you're the Facilitator, you must treat every JAD participant with the same respect, regardless of position, skill, or whether or not you get along with that individual outside of work. The main point of the JAD is to produce a higher-quality output by combining a range of points of view and ideas. It will be your responsibility to engage and involve all participants and ensure that their diverse perspectives and ideas are heard.

### **I.7 Demonstrate how requirements were collected using the chosen Technique**

A dialogue with stakeholders to elicit or validate needs and requirements is referred to as an interview. One or more stakeholders may be interviewed. The interview may also include a question-and-answer session to identify other prospective stakeholders and any differences between needs, high-level requirements generated from those needs, and specific requirements. Interviews make it easier to get consent from stakeholders for their needs, requirements, and any adjustments to them.

Steps in the Formal Interview Process:

- Distribute findings to interviewers for content validation.
- Identify stakeholders to be interviewed.

- Gain a general grasp of the customer's company.
- Create interview questions based on open-ended inquiries.
- Arrange a time and venue for the interview.
- Provide interviewers with a list of questions before the interview (if they will need to prepare for the interview)
- Use one or more recorders to correctly record the interview outcomes.

#### Steps in the Informal Interview Process:

- Determine which stakeholders will be questioned.
- Gain a broad overview of the customer's company.
- Create interview questions (for the interviewer's use alone) to ensure that specific inquiries are answered throughout the session.
- Schedule a casual meeting or phone discussion for the interview.
- During the interview takes handwritten notes; avoid utilizing electronic data capturing.
- Show the findings to the interviewee to validate the information.

#### **I.8 Discuss how you would trace these requirements throughout the project by using the Requirement Traceability matrix.**

The following features/modules will be available for these 2 different roles:

Manager	Customer
Create Customer	Change Password
Edit Customer	Login & Logout
Delete Customer	
Create Account	
Edit Account	

Delete Account

No	Module name	Applicable role	Description
1	Change Password	Customer	Customer: A customer can change the password of only his account.
2	Login & Logout	Customer	Customer: A customer can log in using the login page
3	Create Customer	Manager	Manager: A manager can add a new customer.
4	Create Account	Manager	Manager: A manager can add a new account for an existing customer.
5	Delete Customer	Manager	Manager: A manager can delete a customer.
6	Edit customer	Manager	Manager: A manager can edit details like the address, email, and telephone of a customer.
7	Edit Account	Manager	Manager: A manager can add and edit account details for an existing account
8	Delete Account	Manager	Manager: A manager can add a delete an account for a customer.

## Test Case

Test case ID:

- T1 Customer Id - Customer ID is required
- T2 Customer Id - Special characters are not allowed
- T3 Customer Id - Characters are not allowed

- T4 Customer Name – Numbers are not allowed
- T5 Customer Name – Special characters are not allowed
- T6 Customer Name - The customer's name must not be blank
- T7 Account No must not be blank
- T8 Special characters are not allowed
- T9 Characters are not allowed
- T10 Customer Id - Customer ID is required
- T11 Customer Id - Special characters are not allowed
- T12 Customer Id - Characters are not allowed
- T13 Account No must not be blank
- T14 Special characters are not allowed
- T15 Characters are not allowed
- T16 Address - Address Field must not be blank
- T17 Address - First character cannot have space
- T18 Address - Special characters are not allowed
- T19 User-ID must not be blank
- T20 Password must not be blank
- T21 If user id and password are valid. Login
- T22 Old Password must not be blank
- T23 New Password must not be blank
- T24 Passwords do not match
- T25 Confirm Password must not be blank

Req No	Req Description	Test case ID	Test Data	Status
1	Change Password	T22, T23, T24, T25	New pwd: tomb  Confirm pwd: tomb	T22, T24 fail  T23, T25 pass
2	Login & Logout	T19, T20, T21	User id: tomb  Pwd: tomb	T19, T20, T21 pass
3	New Customer	T4, T5, T6	Customer Name: t0mb	T4, T5, T6 pass

4	New Account	T1, T2, T3	Account: tomb	T1 pass T2, T3 fail
5	Delete Customer	T10, T11, T12	Delete customer: t0mb	T10, T12 pass T11 fail
6	Edit customer	T16, T17, T18	Edit address: 29C Cau Giay	T16 pass T17, T18 fail
7	Edit Account	T7, T8, T9	Edit Account ID: 001;	T7, T9 pass T8 fail
8	Delete Account	T13, T14, T15	Delete account ID: 123  Delete name: t0mb	T13, T14, T15 pass

## Task 2 – Analysis (2)

**II Analyze the requirements that you identified in Task 1 using a combination of structural and behavioral modeling techniques that you have learned.**

### **Behavioral modeling technique**

Behavioral modeling is an approach used by companies to better understand and predict consumer actions. Behavioral modeling uses available consumer and business spending data to estimate future behavior in specific circumstances.

Behavioral modeling is used by financial institutions to estimate the risk associated with providing funds to an individual or business and by marketing firms to target advertising. Behavioral economics also relies on behavioral modeling to predict behaviors of agents that fall outside of what would be considered entirely fact-based or rational behavior.

Behavioral modeling simply tries to capture some of the psychology of decision making to provide a better simulation of how decisions are made by a consumer

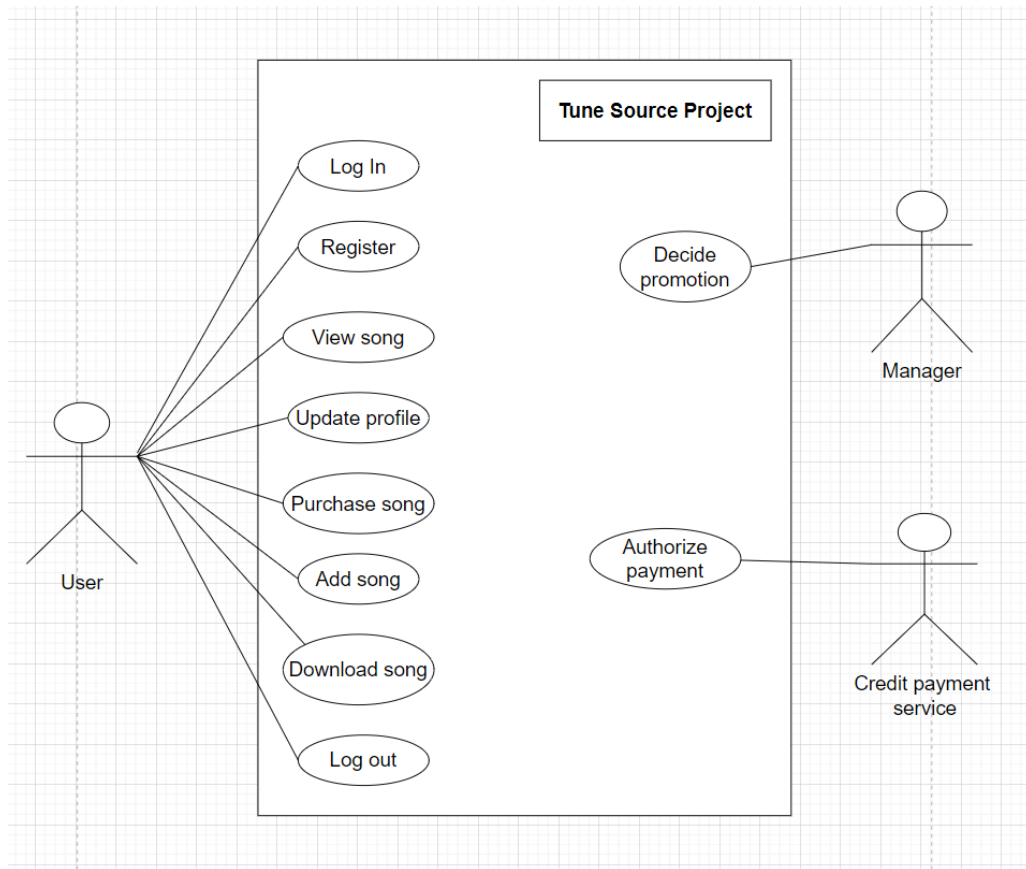
and the probability of a particular consumer making one choice over another. Behavioral modeling is used by companies to hone their value propositions or target marketing campaigns based on the outputs of the model. In this sense, behavioral modeling mainly consists of analyzing data to categorize subsets of people who share similar habits and purchase triggers.

**Structural techniques:**

The discipline of modeling has advanced only slowly compared to disciplines concerned with analyzing and solving models once they are brought into being. Structured Modeling is an attempt to redress this imbalance.

Structured Modeling aims to provide a formal mathematical framework and computer-based environment for conceiving, representing, and manipulating a wide variety of models. The framework uses a hierarchically organized, partitioned, and attributed acyclic graph to represent the semantic as well as the mathematical structure of a model. The computer-based environment is evolving via experimental prototypes that provide for ad hoc queries, immediate expression evaluation, solving simultaneous systems, and optimization.

**P6. USE APPROPRIATE SOFTWARE ANALYSIS TOOLS/TECHNIQUES TO CARRY OUT A SOFTWARE INVESTIGATION AND CREATE SUPPORTING DOCUMENTATION.****III.Scope****III.1Use Case Diagram for the whole system.**



The use case diagram from the Tune Source project is shown above. The user, the manager, and the credit payment service are the three main characters in the diagram. The three main actors in the diagram are the user, the management, and the credit payment service.

### III.2 Use Case specification for 2 Use cases.

Use Case Name	Login
Actors	User
Summary Description	Users may log in to Tune Source using their current account's username and password
Priority:	High
Pre-Condition:	The system is not shut down, but users must have an existing account.

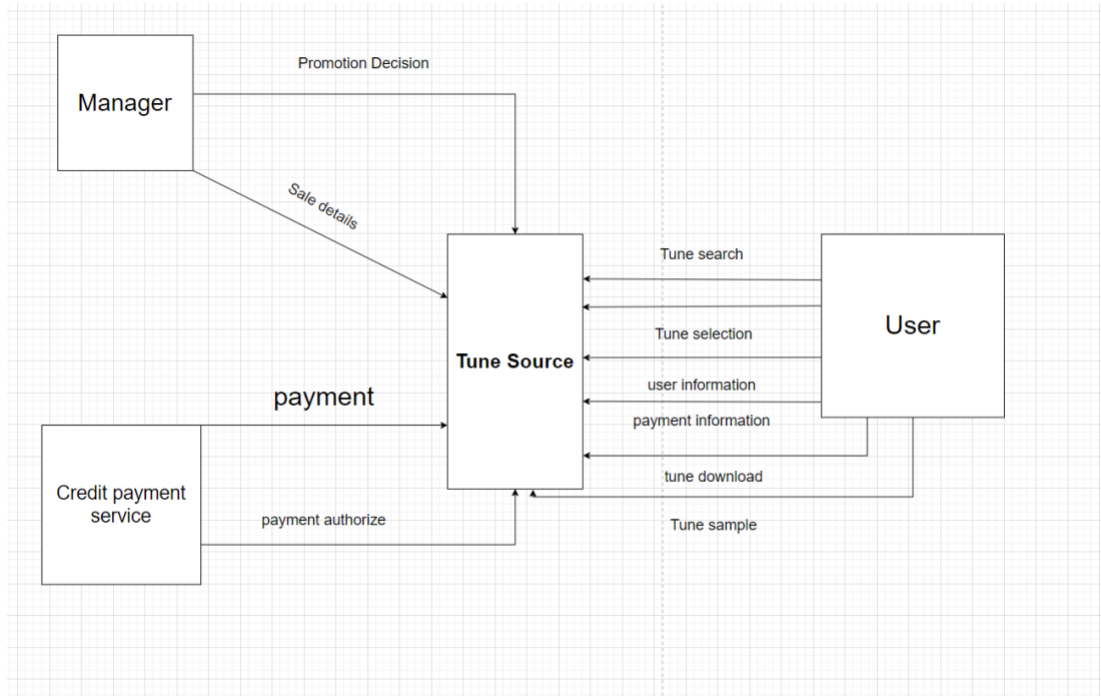


Post-Condition(s):	User successfully log in to Tune Source with his/her account
Basic Path:	<ol style="list-style-type: none"> <li>1. Go to Tune Source</li> <li>2. Insert account username</li> <li>3. Insert account password</li> <li>4. Press Login</li> </ol>
Alternative Paths:	<p>2a. If a user does not utilize the appropriate password with the correct username, an error notification is displayed and the page is reloaded.</p> <p>3a. If a user does not input the right password with the intended username, an error message is displayed and the page is refreshed.</p>

Use Case Name	Register
Actors	User
Summary Description	Users can enter their desired account information and then add their new account to the system.
Priority:	High
Pre-Condition:	Users must have no current accounts linked to their possessed email addresses before registering a new account; else, the system will be shut down. The system is not shut down, but users must have an existing account.

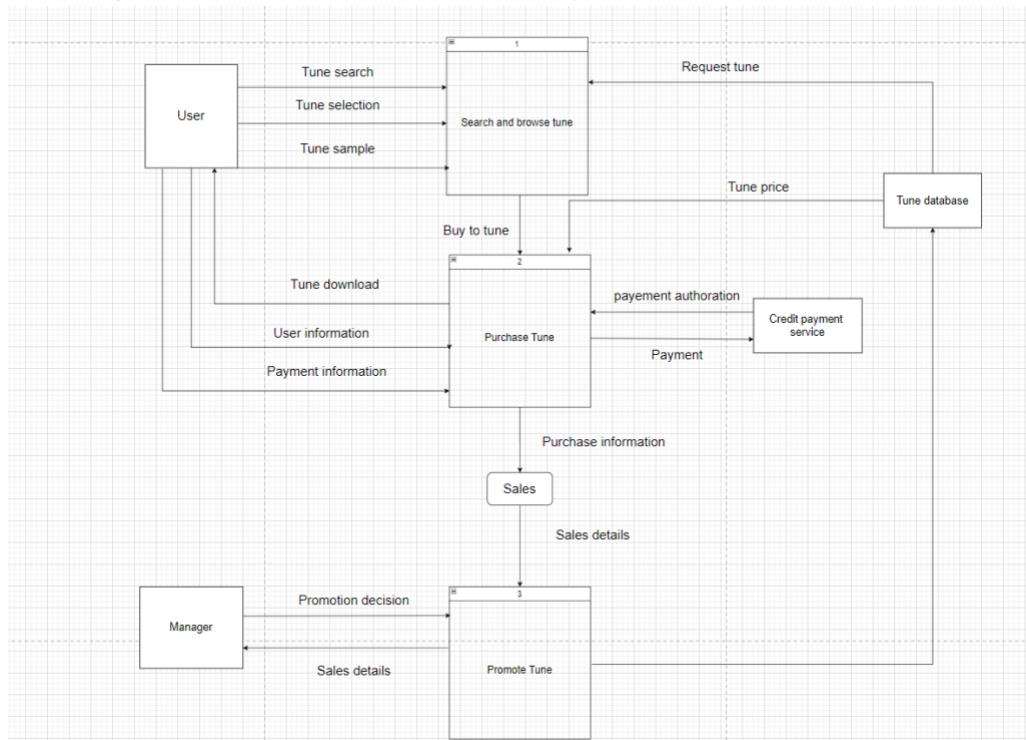
Post-Condition(s):	The system adds a new account into the database
Basic Path:	<ol style="list-style-type: none"> <li>1. Go to Tune Source</li> <li>2. Choose Register</li> <li>3. Insert account username</li> <li>4. Insert account password</li> <li>5. Confirm account password</li> <li>6. Insert personal information</li> <li>7. Insert email address</li> <li>8. Press-Register</li> </ol>
Alternative Paths:	<p>3a. Users enter duplicate usernames, resulting in a display error=&gt;. 3</p> <p>5a. If a user enters an invalid password, the system will show an error message =&gt;4</p>

### III.3 Context Diagram for the whole system.



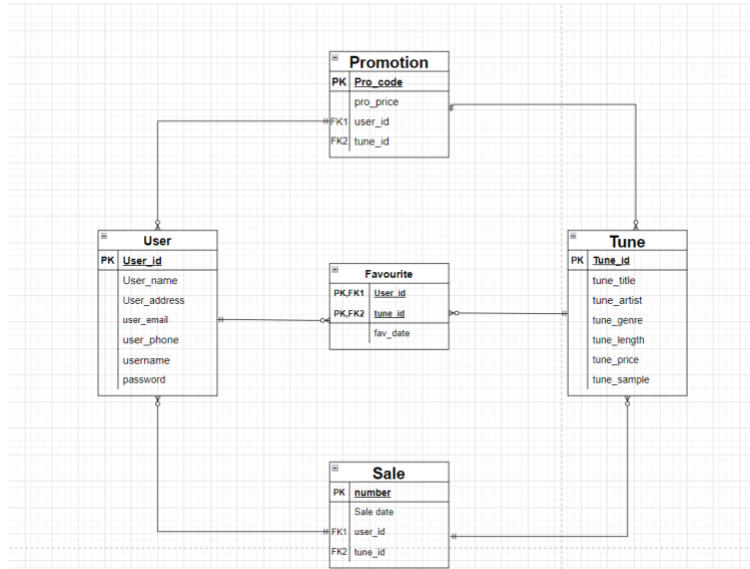
The Tune Source system's context diagram is depicted above, along with the use case diagram's most critical inflows and outflows.

### III.4 Data Flow Diagram – Level 0 for the whole system.



The Tune Source system is divided into three sections: music discovery and browsing, music purchase, and music promotion.

### III.5 ERD for the whole system.



The five key entities are User, Tune, Promotion, Sale, and Favorite (implying users' favorite Tunes).

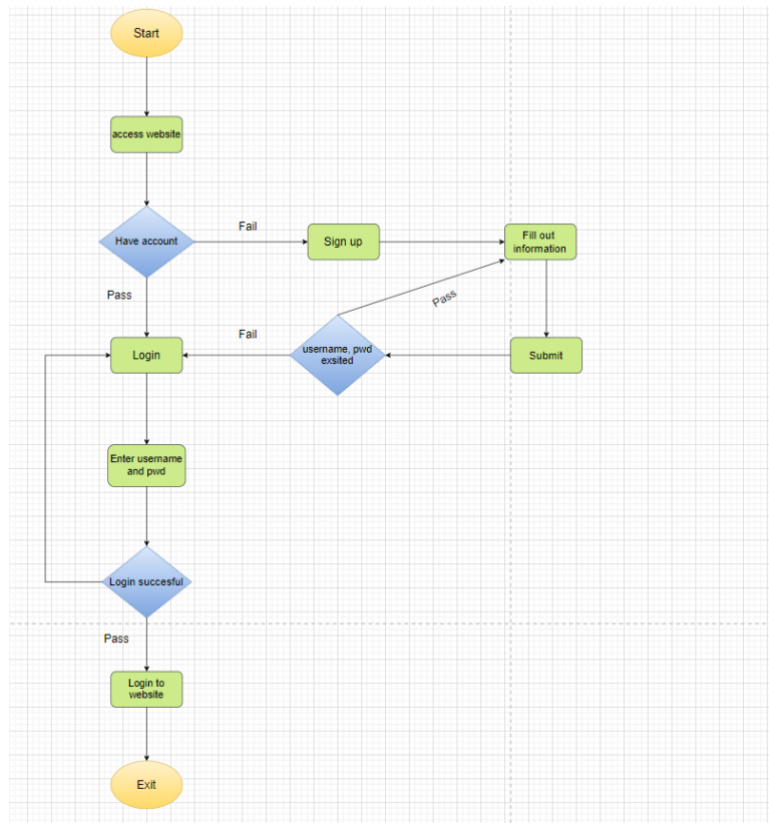
### III.6 Pseudocode for one module of the program

```

1  void Update()
2  {
3      PlayerMovement();
4
5      // If I press the space key
6
7      if (Input.GetKeyDown(KeyCode.Space))
8      {
9          // I want to create a new laser at the position of the player and I
          // want to keep the rotation the same.
10         Instantiate(laserPrefab, transform.position, Quaternion.identity);
11     }
12 }
    
```

## Task 3 – Design

### Flow chart



When a customer visits a website, they must first log in to their already formed account to perform anything specific, such as downloading music.

- They will enter their user's name and password from their account.

If the user's name and password match the database system's data, the website will immediately redirect the user to the home page and inform them that they have successfully signed in. If it's incorrect, it'll redirect you to the login page.

TUNE SOURCE

Home

All product

My account

Shopping cart ▾

Contact us

Search product

Search

Login

Register

Home / Login

Email

email@example.com

Password

Your password must be 8-20 characters long, contain letters and numbers and must not contain spaces, special characters or emoji.

☐ Remember password

[Forgot password](#)

Login

Cancel

TUNE SOURCE

Home

All product

My account

Shopping cart ▾

Contact us

Search product

Search

Login

Register

Home / Register

Email

email@example.com

Username

Address

1234 Main St

Password

Must be 8-20 characters long.

Confirm Password

City

State

Choose... ▾

Zip

Contact

☐ Check me out

Register

## **P7. EXPLAINS HOW USER AND SOFTWARE REQUIREMENTS HAVE BEEN ADDRESSED**

### **IV.DISCUSS HOW THE USER AND SOFTWARE REQUIREMENTS ARE ADDRESSED IN THE DESIGN PHASE.**

#### **IV.1 Explain how Mock-up, and Wireframe are used in the project.**

##### **Mock-up:**

A mockup is a non-functional, static design of a web page or application that includes many of the final design components. A mockup is less refined than a live page and usually contains placeholder data.

Mockups allow page stakeholders to preview how the page will appear while also offering ideas for modifications to the layout, color, pictures, styles, and more. If you're curious how a page might look with a secondary color, create a second version of the mockup to see how it looks. Similarly, if you wish to modify, such as adding a header and centering an image, your mockup may show the team how that change would appear.

A page should be built with a specific objective in mind for a certain purpose. Mockups allow the team to understand how a UI designer's wireframe can be translated into a layout, and how that layout can be brought to life utilizing their brand standards and visual imagination.

Additional visual features commonly included in a mockup include:

- Colors, styles, images, and typography are all important considerations.
- Navigation graphics with styled buttons and text
- Spacing between components

Mockups are helpful tools for communicating and understanding what the final interface should look like, and they allow stakeholders to see design and style options before committing to constructing the app as a working prototype.

##### **Wireframe:**

A wireframe is a two-dimensional skeletal layout of a webpage or app, comparable to an architectural plan. Wireframes show the page's structure, layout, information architecture, user flow, functionality, and expected behaviors in detail. Because a

wireframe generally depicts a product's basic concept, it's important to keep design, color, and graphics to a minimum.


Depending on the level of detail necessary, wireframes can be sketched by hand or made digitally. UX designers are the ones who use wireframing the most. Before the developers write the code for the interface, all stakeholders must agree on where the information will be placed.

Wireframing is often done during the product development process' experimental phase. The designers are evaluating the product's breadth, working on concepts, and determining business needs throughout this phase. A wireframe is the first version of a website that serves as a starting point for the product's design.

Wireframes are useful for three reasons: they maintain the concept of user-centered, they explain and describe website functionality, and they are quick and inexpensive to produce.

A wireframe, in other words, outlines the page's fundamental structure, functionalities, and content. Depending on your demands and preferences, wireframes might be low-fidelity or high-fidelity. A low-fidelity wireframe is a handy approach to developing the basic layout for your design and is commonly sketched out on paper or a whiteboard. A high-fidelity wireframe is more detailed than a low-fidelity wireframe and may incorporate simple processes and interactions.

IV.2 Explain which architecture (client-server, n-tier, microservices, etc.) is suitable for the project

Client-Server	N-tier	microservices	Three-tiered Architecture
			✓
✗	✗	✗	 <p>Client devices Handle presentation logic</p> <p>Application server Handles business logic</p> <p>Database server Handles database-related tasks</p>



#### IV.3 Explanation of why the chosen three-tiered is suitable for this project

A three-tier client/server is a type of multi-tier computing architecture in which an entire application is distributed across three different computing layers or tiers. It divides the presentation, application logic, and data processing layers across client and server devices.

A three-tier client/server adds layer/tier to the client/server-based two-tier models.

- This additional layer is a server tier that acts as an intermediary or middleware appliance. In a typical implementation scenario, the client or first-tier holds the application presentation/interface and broadcasts all of its application-specific requests to the middleware tier server. The middleware or second-tier calls the application logic server or the third tier for application logic. The distribution of the entire application logic across three tiers helps optimize the overall application access and layer/tier level development and management.

#### IV.4 Address which technical solution stack could be suitable to implement the project with clear explanations.

	Standard client	Standard Webserver	Standard App Server	Standard DB Server
Operating system	The Client Operating System is the software that runs on computers and other mobile devices. Because it only serves a single user, this technology differs from centralized servers. Client operating systems are supported	Server operating systems are often divided into three categories: Linux-based, Windows-based, and Mac-based. There are additional possibilities within each of these categories, such as several versions of Mac and Windows		

	by smartphones and tiny computers.	operating systems, as well as a large range of Linux operating systems. We'll use Linux, which is the most popular operating system.		
Special Software		On the software side, a web server consists of numerous components that regulate how web users access data maintained on the server. This is, at the very least, an HTTP server. An HTTP server is a piece of software that can decipher URLs (web addresses) and HTTP requests (the protocol your browser uses to view webpages).	An application server is a server-side program that provides the business logic for any application. It is written by a server programmer. This server might be a component of a centralized or distributed network.	<p>The back-end database application is the software side of a database server or database instance.</p> <p>The program is made up of memory structures and background processes that access database files.</p>

Hardware	<p>Client Hardware refers to any equipment, devices, hardware, or other tangible materials owned, leased, or controlled by Client, including printers, servers, workstations, and networking devices, that are connected to Client's network or information technology infrastructure, or otherwise located at a Work Site, but does not include Staymaker Equipment.</p>	<p>A web server is a machine that holds web server software as well as the files that make up a website (for example, HTML documents, images, CSS stylesheets, and JavaScript files). A web server connects to the Internet and facilitates the exchange of physical data with other web-connected devices.</p>	<p>the hardware you'll need to set up your product</p> <p>8 cores, 4 sockets, 32 GB RAM</p> <p>200 GB free hard disk space for Windows Server x64 OS</p> <p>SVGA or better color graphics monitor and a 100% IBM-compatible 24-bit graphics card capable of 1024x768 resolution and at least 65535 colors XGA or better color graphics monitor and a 100% IBM-compatible 24-</p>	<p>The server system used for database storage and retrieval is the hardware side of a database server.</p> <p>To handle data efficiently, database workloads need a big storage capacity and high memory density. Because of these requirements, the database is frequently hosted on a separate high-end system.</p>
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			<p>bit graphics card capable of 1024x768 resolution and at least 65535 colors XGA or better color graphics monitor and a 100% IBM- compatible 24- bit graphics card capable of 1024x768 resolution and at least 65535 colors</p> <p>a two-button mouse with a scroll wheel or a compatible pointing device (such as a touch screen)</p>	
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Network		<p>Web servers are intended to handle anonymous requests from unauthenticated hosts on the Internet and to quickly and efficiently provide the requested information. In a nutshell, it reads files from a web browser and provides the files requested. Web servers do not have a high level of security by default. Security issues have arisen as a result of the installation of web extensions and the development of database connections. The goal of web extensions and database connections is to make it easier for web servers and browsers to communicate.</p>		
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## **Task 4 – Software quality management**

### **V. Discuss two software quality attributes that apply to the project**

Software Quality Attributes include attributes like availability, interoperability, correctness, reliability, learnability, robustness, maintainability, readability, extensibility, testability, efficiency, and portability that help Software Testing professionals measure the performance of a software product. High Software Quality Attributes scores allow software architects to ensure that a software program will execute according to the client's demands.

#### **- Availability**

This property indicates whether or not an application will complete the tasks it has been given. Certain principles related to software security, performance, integrity, reliability, dependability, and confidentiality are also included in availability.

Furthermore, top-notch availability suggests that a software-driven system will repair any operating faults so that service interruption durations are kept to a minimum.

#### **- Interoperability**

To complete particular tasks, software-driven systems may be necessary to communicate and operate in concert. The capacity of two systems to communicate information via certain interfaces is referred to as interoperability. As a result, Software Quality Assurance engineers must consider both syntactic and semantic interoperability when evaluating the interoperability characteristic.

### **V.I Discuss two quality assurance techniques that can help improve the software quality in the project.**

Software testing quality assurance is described as a technique for ensuring the quality of software goods or services are given to clients by a company. Quality assurance is concerned with making the software development process more efficient and effective by the quality standards established for software products.

QA Testing is a popular term for Quality Assurance.

#### **- Development that is driven by tests**

Test-driven development is a form of the agile software development process that has evolved into one of extreme programming's key ideas. Extreme programming

prioritizes rapid releases in short development cycles, rigorous code review (typically done through pair programming), and comprehensive unit tests that cover all code.

Test-driven development, on the other hand, is a distinct strategy for developing high-quality code in the smallest period.

**- When possible, automate.**

Every feature should be tested many times in most cases. Ideally, if something is updated or added, a test should be performed. When it comes to regression tests, which should be run regularly, automated testing can help you avoid tedious human effort. In this situation, you create software to conduct the steps required to demonstrate the quality of the generated product automatically.

**V.II Discuss how the design techniques and approaches that you have used can help improve the software quality.**

When I apply Functional Design to the Tune Source project's design area, I will carefully assess the outcomes. The stages for the Tune Source project will be completed in the following order:

**- Flowcharts of data.**

When we use the Data flow diagrams approach to the Tune Source project, we can control all of the work since the information will be displayed very clearly through the recommended comments. In the system, input and output are visible, just like arrows. It makes it easy for project stakeholders to monitor and follow the project's development.

**- Dictionary of Data**

We used the system structure analysis approach to understand the nature of the Tune Source project and eliminate needless risks to prevent impacting the entire system. It will assist in breaking down project needs into smaller chunks, making them easier to handle.

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