Software Sharks
Department of Computer Science
University of Pretoria
Lynwood Road
Hatfield, Pretoria
0002
012 420 4111

Functional Requirements Specification

for

BISI - Image APP

Version 2.0 Draft

Prepared by:

Mark Coetzer	u14044537
Orisha Orrie	u13025199
Tobias Bester	u14041368
Len Bekker	u11026953
Mukundi Matodzi	u16091265
Jonathan Lew	u13318765

On:

10th April 2018

Table of Contents

1. Introduction

1.1 Purpose

The purpose of this document is to provide the in depth analysis of the systems functional requirements in a systematic and clear manner.

1.2 Definitions, Acronyms and Abbreviations

Table 1: Definitions

Term	Definition
BISI	Bramhope International School of Innovation
R#	Requirements number
UC#	Use Case number

1.3 References

IEEE Software Engineering Standards Committee, “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications”, October 20, 1998.

2. Specific Requirements

2.0 Step 0 - Formulate Requirements

R1: A user should be able to capture an image on a Mobile application

R2: A user should be able to handle HTTP connections with a server through a Mobile or Web application

R2.1: A user should be able to upload an image to a server from a Mobile or Web application.

R2.2: A user should be able to receive information from a server regarding a product matching their image using image recognition on a Mobile or Web application

R3: A user should be able to view existing catalogues from a server on a Mobile or Web application

R4: A user should be able to place orders according to product catalogues on a Mobile or Web application

R4.1: A user should be able to request a quote on specific products on a Mobile or Web application

R5: A user should be able to process inventory through weight analysis using a server on a Mobile or Web application

R6: A user should be able to contact a company on a Mobile or Web application

2.1 Step 1 - Identify Use Cases

Derive Use-Cases, Actors & Subsystems

Table 2: Use-Case Derivation

Noun-Verb	Business Process	Begin with Actor	End with Actor	Accomplish Business Task	Use Case	Actor	Subsystem
Capture Image	Y	Y	Y	Y	Y	User	Mobile Application
Send HTTP Request	Y	Y	Y	Y	Y	User	Mobile/Web Application & Server
Receive HTTP Response	Y	Y	Y	Y	Y	User	Mobile/Web Application & Server
Weight Analysis	Y	Y	Y	Y	Y	User	Mobile/Web Application & Server
Request Quote	Y	Y	Y	Y	Y	User	Mobile/Web Application
Contact Company	Y	Y	Y	Y	Y	User	Mobile/Web Application
Image Recognition	N	N	N	N	N	NA	NA

UC1: Capture/Select Image (Actor: User, System: Mobile Application)

UC2: Send Request (Actor: User, System: Mobile/Web/Server)

UC3: Receive Feedback (Actor: User, System: Mobile/Web/Server)

UC4: Weight Analysis (Actor: User, System: Mobile/Web/Server)

UC5: Request Quote (Actor: User, System: Mobile/Web)

UC6: Contact Company (Actor: User, System: Mobile/Web)

Traceability Matrix

Table 3: Traceability Matrix

Requirements	Priority	UC1	UC2	UC3	UC4	UC5	UC6
R1	**2**	X					
R2.1	**1**		X				
R2.2	**1**			X			
R3	**4**		X	X			
R4.1	**4**					X	
R5	**3**		X	X	X		
R6	**4**						X
UC Priority		**2**	**1**	**1**	**2**	**3**	**3**

2.2 Step 2 - Specify Use Case Scopes

UC1: Capture/Select Image

Begins: A user pressing a button to access the camera / select from gallery
Ends: A user pressing the capture / select button to capture an image

UC2: Send Request

Begins: A user submitting a request by uploading an image or other information
Ends: A user receiving feedback from the server to confirm receipt of request.

UC3: Receive Response

Begins: A user receiving feedback on the image or information
Ends: A user confirming the feedback received about the image or information

UC4: Weight Analysis

Begins: A user inputting the total weight of products along with a picture
Ends: A user receiving the amount of single products in the pile

UC5: Request Quote

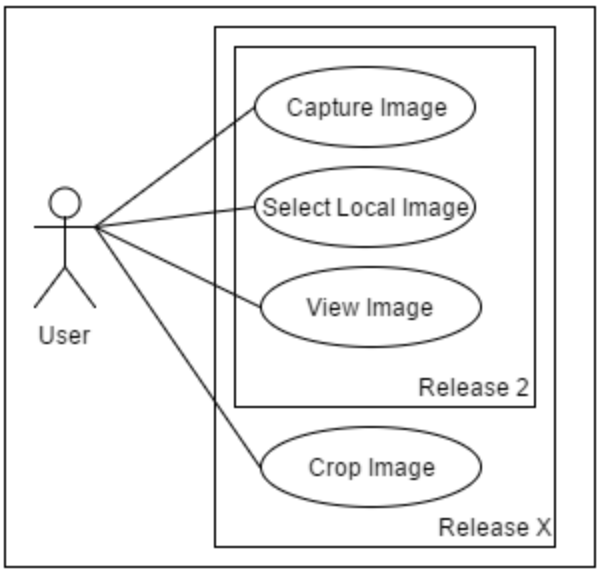
Begins: A user selecting the quantity of product they want
Ends: A user receiving confirmation of quote sent

UC6: Contact Company

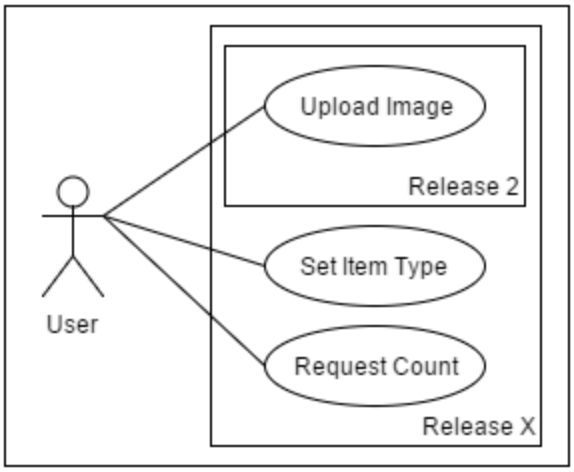
Begins: A user filling out a contact form
Ends: A user receiving feedback that the form has been submitted

2.3 Step 3 - Visualise Use Cases

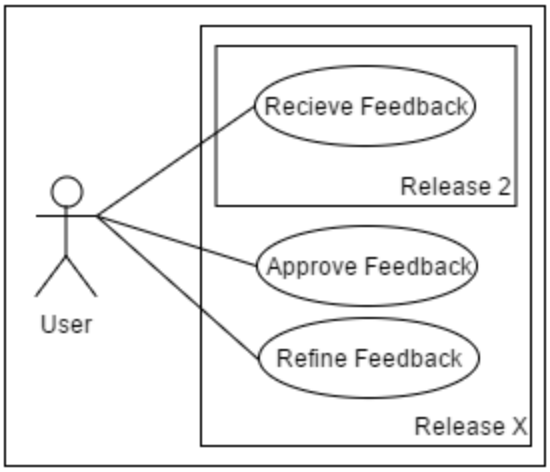
UC1: Capture/Select Image



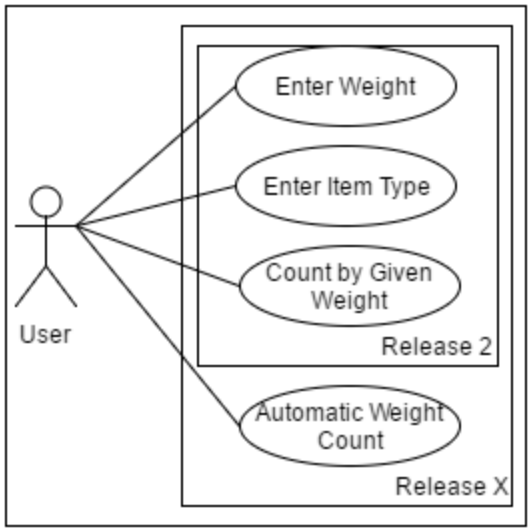
UC2: Send Request



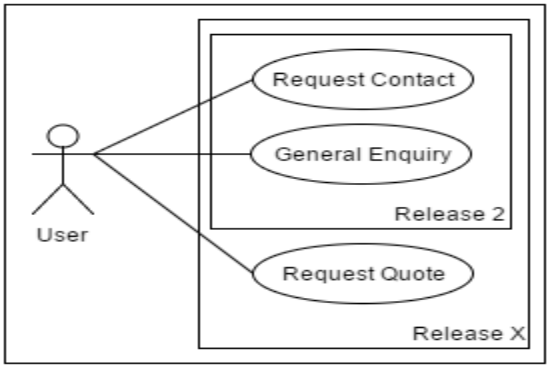
UC3: Receive Response



UC4: Weight Analysis



UC5 & UC6: Request Quote & Contact



2.4 Step 4 - Review Use Case Specifications

Table 4: Specification Review

Heading	Question	Yoni Answer	Other Review
Abstract Use Cases	Does each use case have verb-noun phrase and communicate accomplishments?	Y	Y
	Does each use case represent business process?	Y	Y
	Can any use case be split into two or more use cases?	N	N
	Can any use cases be merged?	N	N
Requirement-use case traceability matrix	Is there a requirement-use case traceability matrix?	Y	Y
	Is every requirement listed in tractability matrix?	Y	Y
	Is there a blank row or column in the matrix?	N	N
	Are the use cases listed necessary for requirement?	Y	Y
	Are use cases listed sufficient for requirement?	Y	Y
High-level use cases	Is there a high-level use case specification for each use case?	Y	Y
	Does the “Begins: “ clearly specify when and where use case begins?	Y	Y
	Does the “Ends: “ clearly specify when and where use case ends?	Y	Y
	Does each case correctly specify scope of business process?	Y	Y
Use Case Diagram	Does each diagram show subsystem boundary?	Y	Y
	Is subsystem name appropriate for communicating functionality?	Y	Y
	Is there a one-to-one correspondence between use cases in diagram and tractability matrix?	Y	Y
	Any use case diagrams with excessive number of use cases?	N	N
	Any diagram containing one use case without good reason?	N	N
	Any diagram containing a use case or actor not connected to any use case or actor?	N	N
	Is there any actor without a role name?	N	N
	Is each use case linked to appropriate actor?	Y	Y
	Is each use case assigned to appropriate subsystem?	Y	Y

2.5 Step 5 - Allocate Use Cases to Iterations (DRAFT)

I= Iteration

P=Priority

Use Case	P	Effort (person-week)	Depend on	I1	I2	I3	I4	I5	I6
UC1	2		NONE						
UC2	1		UC1						
UC3	1		NONE						
UC4	2		UC3						
UC5	3		UC6						
UC6	3		UC2						
Total Effort									