Software Quality Management (SQM) & Software Quality Assurance (SQA) systems for IT/SW/CIS development industry

Team_09

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Introduction[1][2]

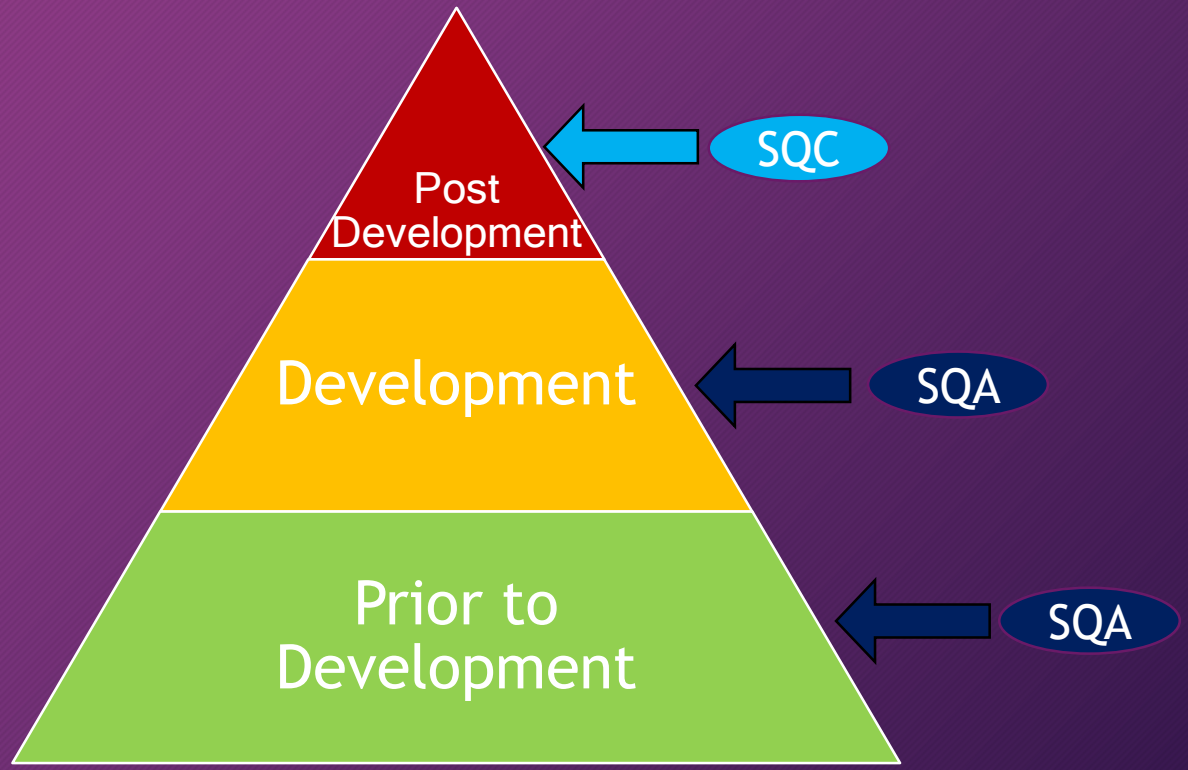
- A **Quality Management System** (QMS) is a set of:
  - ✓ Policies
  - ✓ Processes
  - ✓ Procedures
- required for planning and execution (production/development/service) in the core business area of an organization.
- A process based QMS enables the organizations to:
- Identify → Measure → Control → Improve the various core business processes that will ultimately lead to **improved business performance**.

Introduction[3]

- Software Quality Management (SQM) is a type of management process or procedure that aims to develop and manage the quality of software.
- The goal is to ensure that the product meets the quality standard assumed by the customer while also meeting any necessary regulatory and developer requirements.
- The software is required to be tested by software quality managers before it is released to the market.

Introduction[4]

- **Software Quality Assurance (SQA)** is a set of activities to ensure desired quality in software engineering process.
- It is a procedure of monitoring all the methods and activities of software development life cycle (SDLC).
- **Software Assurance Control (SQC)** is a method of maintaining and achieving the quality standards in Software Products with the assistance of testing against the predefined, standard specification.
- SQC is a reactive and corrective procedure through which an undeveloped product grows into the end product.



(SQM) & (SQA) Top systems analyzed[5][6][7]

(SQM) & (SQA) Top systems analyzed [5][6][7]

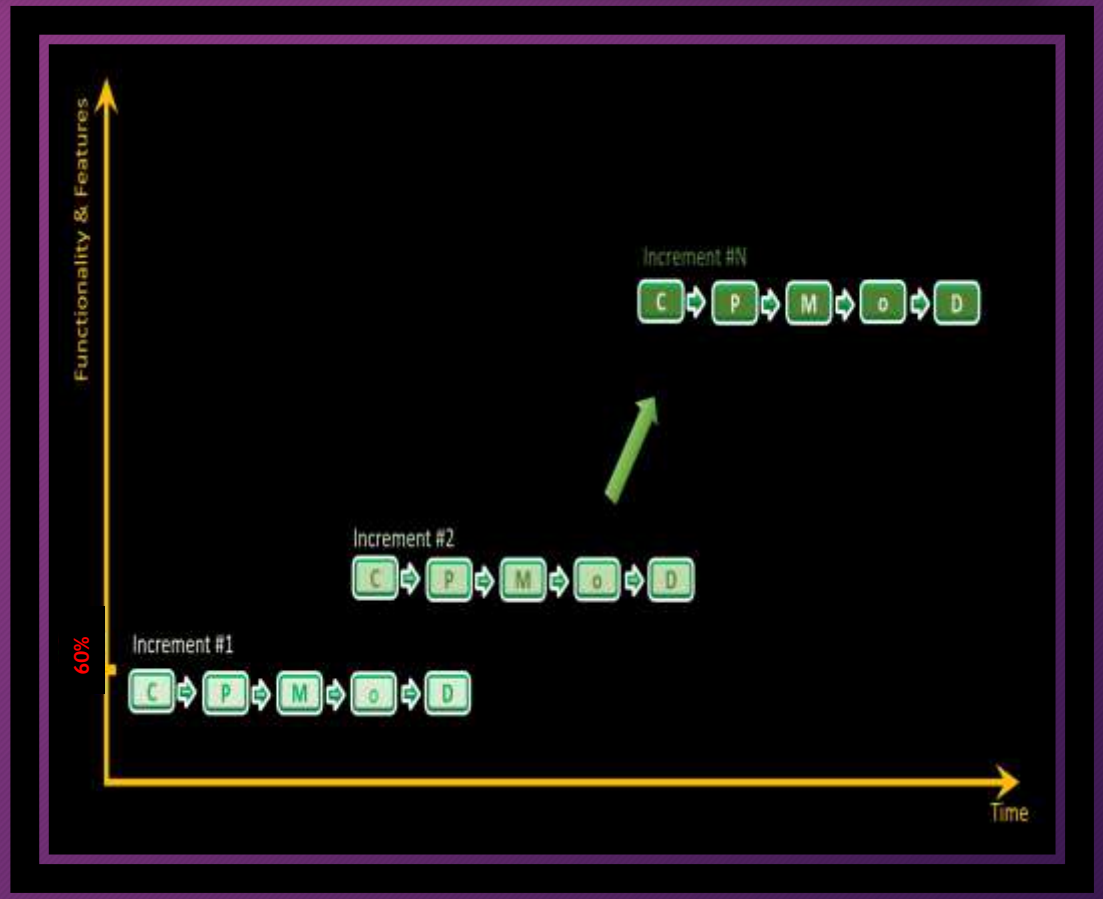
		TestRail				
Scope	A web-based tool that helps organizations to manage the application lifecycle right from project planning, requirements gathering, until Testing & deployment.	A complete web-based test case management solution to efficiently manage, track, and organize your software testing efforts.	An umbrella project for a range of tools and libraries that enable and support the automation of web browsers.	a self-contained, open source automation serve which can be used to automate all sorts of tasks related to building, testing, and delivering or deploying software.	New Relic One is an entity-centric observability platform. For engineering teams with complex environments, it empowers you to find, visualize, and understand everything you need to deliver more perfect software.	Empowers organizations and their development teams to achieve continuous integration and continuous delivery (CI/CD) goals with micro-services and Docker. This is brought to life through its container-centric and cloud-native automation platform comprised of their local command line interface (CLI), online SaaS platform and API.
Main Functions	✓ Release Management ✓ Requirement Management ✓ Test case Management ✓ Test Execution Management ✓ Defect Management ✓ Reports Management	✓ Automated Testing ✓ Functional Testing ✓ Exploratory Testing ✓ Reporting ✓ Projects ✓ Tracker	✓ Web applications Automation ✓ Web-based Administration tasks automation	✓ Continuous Integration (CI) / Continuous Delivery (CD)	✓ Monitor code & Track transactions ✓ Monitor infrastructure & Centralize logs ✓ Enhance browser performance, Monitor mobile apps & Simulate user activity ✓ Collect data without an agent & Build an app with SDKs ✓ Analyze, organize, process, and understand your data.	✓ Continuous Integration (CI) / Continuous Delivery (CD)
Programming Languages	✓ Java 2 Enterprise Edition (J2EE)	✓ JavaScript ✓ UI Script	✓ Java Script ✓ Java ✓ C#	✓ Java Script ✓ Java ✓ XML	✓ Ruby	✓ Python ✓ Shell Script
TLOC	-	-	695K	1.04M	70.9K	5K
Technical Platform	✓ Version **15.0.x** ✓ Microsoft Windows 10 64 Bit ✓ Microsoft Internet Explorer 11 ✓ Microsoft Office 2016 32 Bit	✓ Windows, Linux OS ✓ Internet Explorer 11 & Edge ✓ Firefox ✓ Chrome, Safari, Webkit	✓ Chrome, ✓ Mozilla Firefox ✓ Internet Explorer ✓ Opera ✓ Safari	✓ Hardware:1 GB+ of RAM, 50 GB+ of drive space ✓ Software: Java 8 runtime environments ✓ Chrome,Mozilla Firefox ✓ Internet Explorer, Safari	✓ Chrome, ✓ Mozilla Firefox ✓ Internet Explorer ✓ Opera ✓ Safari	✓ Mac, Linux OS
Website	[8]	[9]	[10]	[11]	[12]	[13]

(SQM) & (SQA) Top systems analyzed [5][6][7]

	GitHub	tmux	POSTMAN	TestingWhiz	ranorex pro	Ranorex
Scope	Is a website and cloud-based service that helps developers store and manage their code, as well as track and control changes to their code.	Is a terminal multiplexer. It lets you switch easily between several programs in one terminal, detach them (they keep running in the background) and reattach them to a different terminal.	Is a collaboration platform for API development. Postman's features simplify each step of building an API and streamline collaboration so you can create better APIs—faster.	Is a Codeless Automation Testing Tool for Software, Web, Mobile, Database, Cloud, Web Services and API testing.	Is designed to solve the everyday problems faced by the testers. It is uniquely tester-centric in its design and functionality.	It empowers testers with a complete toolset for end-to-end testing of desktop, web and mobile applications in a single license. Automate tests on a Windows desktop, and then execute them locally or remotely, on real iOS or Android mobile devices or on simulators/emulators.
Main Functions	✓ (CI) /(CD) ✓ Secure SW Development ✓ Code Review ✓ Hosting For Code & Documentation ✓ Project Management Tools	✓ tmux is a terminal multiplexer: it enables several terminals to be created, accessed, and controlled from a single screen.	✓ API-First Development ✓ Application Development ✓ Automated Testing ✓ Exploratory Testing ✓ Developer Onboarding ✓ Developer Portals	✓ Regression Testing ✓ Web Application Testing ✓ Cross-Browser Testing ✓ Database Testing ✓ Web Services Testing ✓ Mobile Application Testing	✓ Simple and Powerful APIs ✓ Automatic Waits ✓ Object Spy and Recorder ✓ Business Friendly Frameworks ✓ Automatic Logging and Reporting ✓ Parallel and Distributed Playback ✓ Continuous Integration	✓ Functional Testing ✓ GUI Testing Tools ✓ Regression Testing Tools ✓ Keyword-Driven Testing ✓ Data-Driven Testing
Programming Languages	✓ Java ✓ XML ✓ XML Schema	✓ C ✓ C++	✓ Java Script	✓ Java ✓ Eclipse RCP ✓ Groovy ✓ Java script	✓ Java Script ✓ Java ✓ HTML	✓ Microsoft's .NET platform.
TLOC	393K	49.7K	38.4K	-	50.5K	-
Technical Platform	✓ Chrome, ✓ Mozilla Firefox ✓ Internet Explorer ✓ Opera ✓ Safari	✓ Chrome, ✓ Mozilla Firefox ✓ Internet Explorer ✓ Opera ✓ Safari	✓ macOS 10.9. ✓ Linux ✓ Windows 7 and above	✓ Platforms: Windows XP, 7, 8, 10, Server 2008 & Server 2012 ✓ Protocols: Http, Https, FTP, SFTP, SOAP, XML, REST, AJAX & Applets	✓ Internet Explorer 6, Mozilla Firefox 2 ✓ Google Chrome 6, Safari 5, Opera 9 and up ✓ PhantomJS, Microsoft Edge 25 and up	✓ Processor: 2 GHz dual core, Memory: 1 GB ✓ Windows 7 SP1 and up ✓ MS Windows Installer 3.1 ✓ MS Visual C++ 2017 ✓ Microsoft .NET Framework 4.6.2 ✓ Internet Explorer 11
Website	[14]	[15]	[16]	[17]	[18]	[19]

Software Engineering Process Model to Be Used

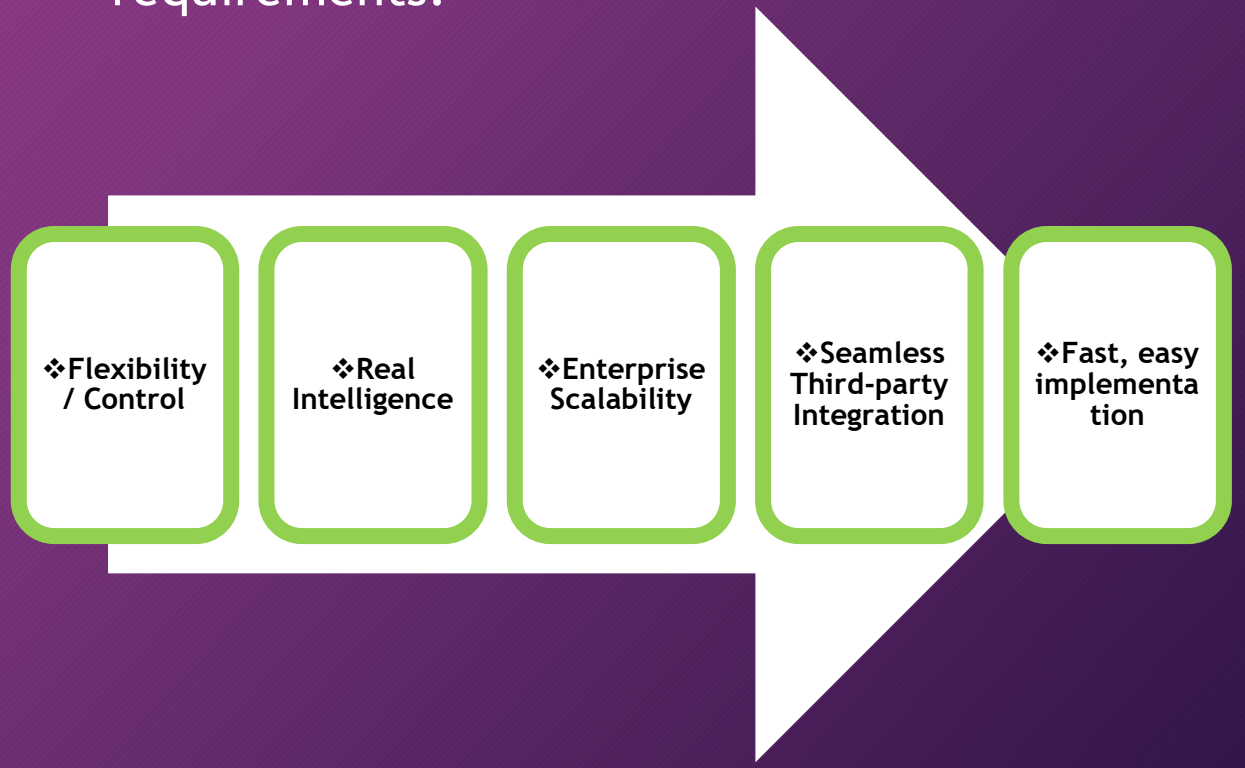
- The Incremental Process Model will be adopted.
- SW has a Medium level of complexity.
- SW requires average number of developers.
- Evolutionary type of SW.
- Feedback from customer is required for enhancements.
- Customer Might feel the need to add more functionality to the SW in between iterations.
- First iteration will deliver the core of the SW with about %60



Scope Management[20]

- The scope of this project is to create a quality management system that ensures the quality standards assumed by our customer and meets all necessary regulatory requirements.
- Achieved by providing more quality and compliance solutions:
  - System adaptability to the organization's existing IT and business environments.
  - System ability to deliver critical QMS requirements.

- Main quality management system requirements:



Scope Management

- Constraints on technical Platform
- Operating Systems:
- Front-end: HTML, JavaScript, CSS, JAVA
- Backend : JAVA , NodeJS
- IDE tools: Notepad, Notepad++
- Server : Apache Tomcat,

- Hardware Requirements
- Processor: 64 bit
- Memory: 16 GB
- Hard disk: 250 GB
- Functional Requirements:

✓Web Browser : Google chrome, Mozilla firefox, Internet explorer, Opera, Safari

- Adobe Flash player or plugin
- 512kbps and higher internet connection

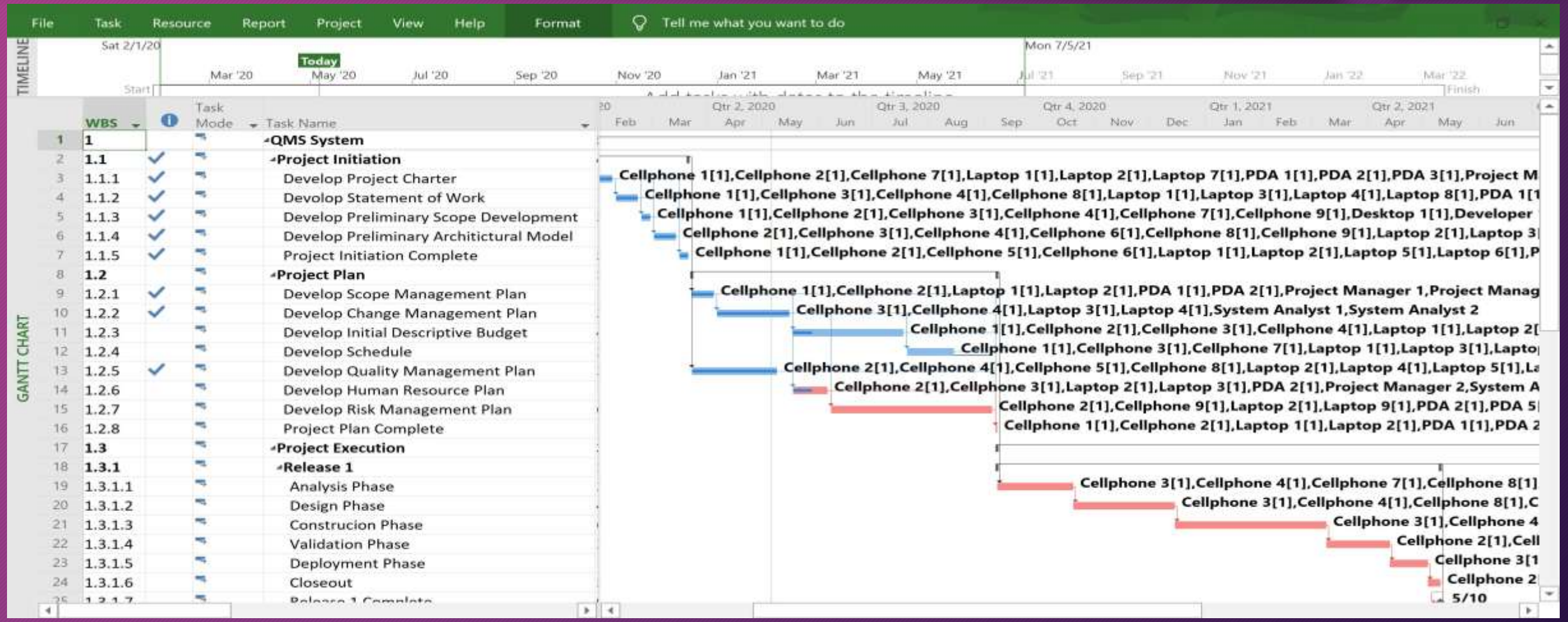
Time Management
Time Management Plan

ID	WBS	Task Mode	Task Name	Duration	Start	Finish
1	**1**		**QMS System**	**556 days**	**Mon 1/27/20**	**Mon 3/14/22**
2	**1.1**		**Project Initiation**	**40 days**	**Mon 1/27/20**	**Fri 3/20/20**
3	1.1.1		Develop Project Charter	10 days	Mon 1/27/20	Fri 2/7/20
4	1.1.2		Devolop Statement of Work	10 days	Mon 2/10/20	Fri 2/21/20
5	1.1.3		Develop Preliminary Scope Developm	5 days	Mon 2/24/20	Fri 2/28/20
6	1.1.4		Develop Preliminary Architictural Mo	10 days	Mon 3/2/20	Fri 3/13/20
7	1.1.5		Project Initiation Complete	5 days	Mon 3/16/20	Fri 3/20/20
8	**1.2**		**Project Plan**	**121 days**	**Mon 3/23/20**	**Mon 9/7/20**
9	1.2.1		Develop Scope Management Plan	10 days	Mon 3/23/20	Fri 4/3/20
10	1.2.2		Develop Change Management Plan	30 days	Mon 4/6/20	Fri 5/15/20
11	1.2.3		Develop Initial Descriptive Budget	45 days	Mon 5/18/20	Fri 7/17/20
12	1.2.4		Develop Schedule	20 days	Mon 7/20/20	Fri 8/14/20
13	1.2.5		Develop Quality Management Plan	35 days	Mon 3/23/20	Fri 5/8/20
14	1.2.6		Develop Human Resource Plan	15 days	Mon 5/18/20	Fri 6/5/20
15	1.2.7		Develop Risk Management Plan	65 days	Mon 6/8/20	Fri 9/4/20
16	1.2.8		Project Plan Complete	1 day	Mon 9/7/20	Mon 9/7/20
17	**1.3**		**Project Execution**	**394 days**	**Tue 9/8/20**	**Fri 3/11/22**
18	**1.3.1**		**Release 1**	**175 days**	**Tue 9/8/20**	**Mon 5/10/21**
19	1.3.1.1		Analysis Phase	30 days	Tue 9/8/20	Mon 10/19/20
20	1.3.1.2		Design Phase	40 days	Tue 10/20/20	Mon 12/14/20
21	1.3.1.3		Construcion Phase	60 days	Tue 12/15/20	Mon 3/8/21
22	1.3.1.4		Validation Phase	25 days	Tue 3/9/21	Mon 4/12/21
23	1.3.1.5		Deployment Phase	15 days	Tue 4/13/21	Mon 5/3/21
24	1.3.1.6		Closeout	5 days	Tue 5/4/21	Mon 5/10/21
25	1.3.1.7		Release 1 Complete	0 days	Mon 5/10/21	Mon 5/10/21
26	**1.3.2**		**Release 2**	**73 days**	**Tue 5/11/21**	**Thu 8/19/21**
27	1.3.2.1		Analysis Phase	10 days	Tue 5/11/21	Mon 5/24/21
28	1.3.2.2		Design Phase	15 days	Tue 5/25/21	Mon 6/14/21
29	1.3.2.3		Construcion Phase	25 days	Tue 6/15/21	Mon 7/19/21
30	1.3.2.4		Validation Phase	10 days	Tue 7/20/21	Mon 8/2/21
31	1.3.2.5		Deployment Phase	10 days	Tue 8/3/21	Mon 8/16/21

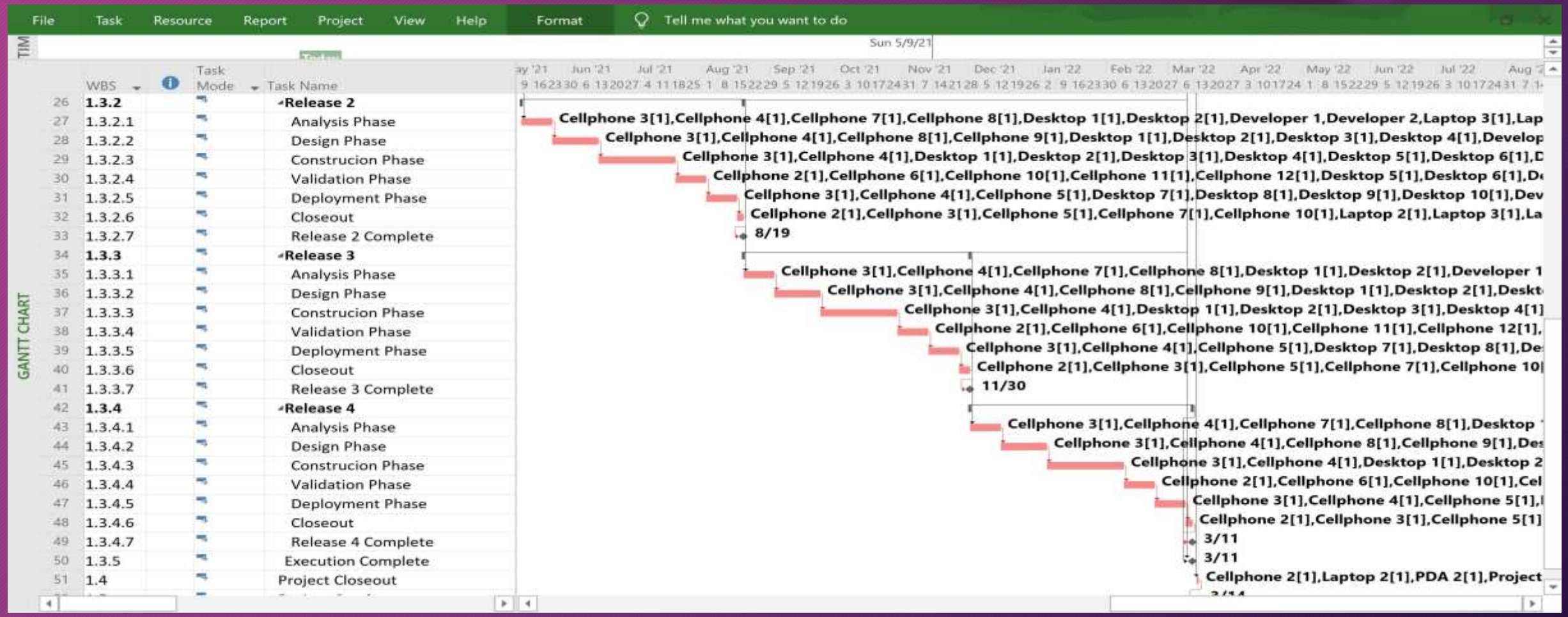
Time Management
Time Management Plan – Cont.

ID	WBS	Task Mode	Task Name	Duration	Start	Finish
32	1.3.2.6		Closeout	3 days	Tue 8/17/21	Thu 8/19/21
33	1.3.2.7		Release 2 Complete	0 days	Thu 8/19/21	Thu 8/19/21
34	**1.3.3**		**Release 3**	**73 days**	**Fri 8/20/21**	**Tue 11/30/21**
35	1.3.3.1		Analysis Phase	10 days	Fri 8/20/21	Thu 9/2/21
36	1.3.3.2		Design Phase	15 days	Fri 9/3/21	Thu 9/23/21
37	1.3.3.3		Construcion Phase	25 days	Fri 9/24/21	Thu 10/28/21
38	1.3.3.4		Validation Phase	10 days	Fri 10/29/21	Thu 11/11/21
39	1.3.3.5		Deployment Phase	10 days	Fri 11/12/21	Thu 11/25/21
40	1.3.3.6		Closeout	3 days	Fri 11/26/21	Tue 11/30/21
41	1.3.3.7		Release 3 Complete	0 days	Tue 11/30/21	Tue 11/30/21
42	**1.3.4**		**Release 4**	**73 days**	**Wed 12/1/21**	**Fri 3/11/22**
43	1.3.4.1		Analysis Phase	10 days	Wed 12/1/21	Tue 12/14/21
44	1.3.4.2		Design Phase	15 days	Wed 12/15/21	Tue 1/4/22
45	1.3.4.3		Construcion Phase	25 days	Wed 1/5/22	Tue 2/8/22
46	1.3.4.4		Validation Phase	10 days	Wed 2/9/22	Tue 2/22/22
47	1.3.4.5		Deployment Phase	10 days	Wed 2/23/22	Tue 3/8/22
48	1.3.4.6		Closeout	3 days	Wed 3/9/22	Fri 3/11/22
49	1.3.4.7		Release 4 Complete	0 days	Fri 3/11/22	Fri 3/11/22
50	1.3.5		Execution Complete	0 days	Fri 3/11/22	Fri 3/11/22
51	1.4		Project Closeout	1 day	Mon 3/14/22	Mon 3/14/22
52	1.5		Project Comlete	0 days	Mon 3/14/22	Mon 3/14/22

Time Management
Gantt Chart



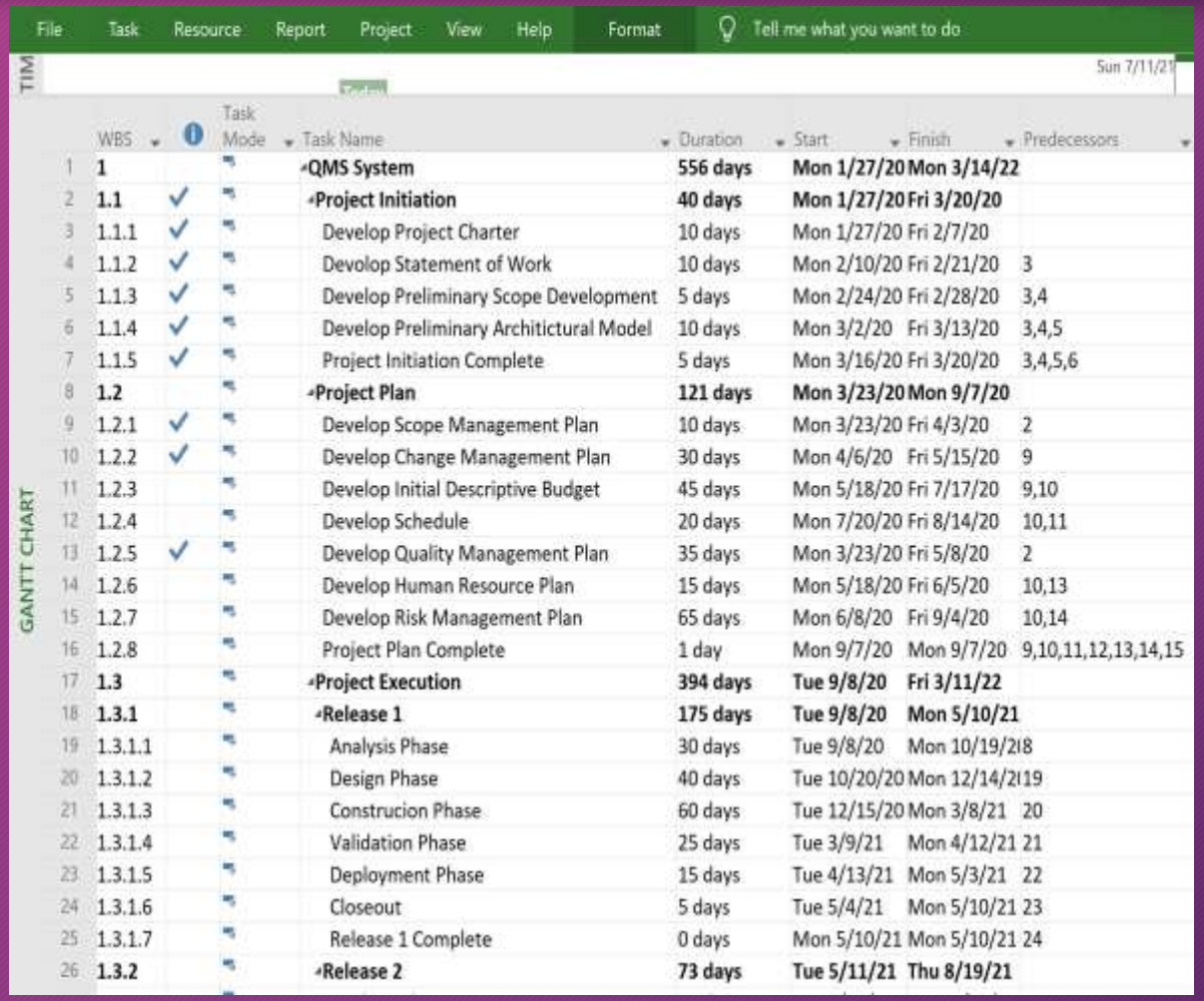
Time Management
Gantt Chart – Cont.



Time Management
Total Project Time

Phases		Start Date	Final Date	Duration (Days)
1.1	Project Initiation	1/27/2020	3/20/2020	40
1.2	Project Plan	3/23/2020	9/7/2020	121
1.3.1	Release 1	9/8/2020	5/10/2021	175
1.3.2	Release 2	5/11/2021	8/19/2021	73
1.3.3	Release 3	8/20/2021	11/30/2021	73
1.3.4	Release 4	12/1/2021	3/11/2022	73
	Overall Project	1/27/2020	3/14/2022	556

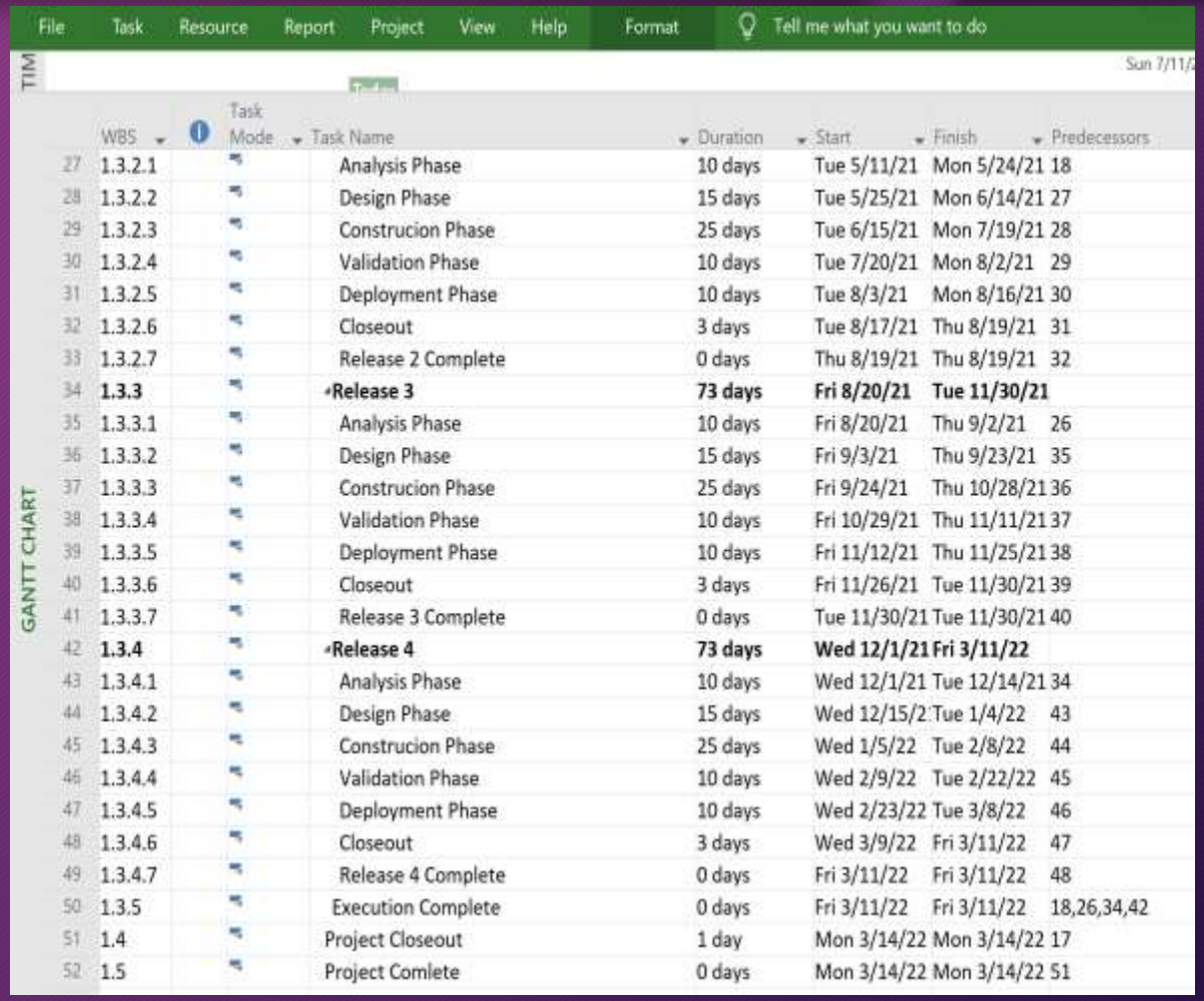
Resource Management
WBS Structure



File Task Resource Report Project View Help Format Tell me what you want to do

GANTT CHART

	WBS	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1	**1**		**QMS System**	**556 days**	**Mon 1/27/20**	**Mon 3/14/22**	
2	**1.1**	✓	**Project Initiation**	**40 days**	**Mon 1/27/20**	**Fri 3/20/20**	
3	1.1.1	✓	Develop Project Charter	10 days	Mon 1/27/20	Fri 2/7/20	
4	1.1.2	✓	Devolop Statement of Work	10 days	Mon 2/10/20	Fri 2/21/20	3
5	1.1.3	✓	Develop Preliminary Scope Development	5 days	Mon 2/24/20	Fri 2/28/20	3,4
6	1.1.4	✓	Develop Preliminary Architictural Model	10 days	Mon 3/2/20	Fri 3/13/20	3,4,5
7	1.1.5	✓	Project Initiation Complete	5 days	Mon 3/16/20	Fri 3/20/20	3,4,5,6
8	**1.2**		**Project Plan**	**121 days**	**Mon 3/23/20**	**Mon 9/7/20**	
9	1.2.1	✓	Develop Scope Management Plan	10 days	Mon 3/23/20	Fri 4/3/20	2
10	1.2.2	✓	Develop Change Management Plan	30 days	Mon 4/6/20	Fri 5/15/20	9
11	1.2.3		Develop Initial Descriptive Budget	45 days	Mon 5/18/20	Fri 7/17/20	9,10
12	1.2.4		Develop Schedule	20 days	Mon 7/20/20	Fri 8/14/20	10,11
13	1.2.5	✓	Develop Quality Management Plan	35 days	Mon 3/23/20	Fri 5/8/20	2
14	1.2.6		Develop Human Resource Plan	15 days	Mon 5/18/20	Fri 6/5/20	10,13
15	1.2.7		Develop Risk Management Plan	65 days	Mon 6/8/20	Fri 9/4/20	10,14
16	1.2.8		Project Plan Complete	1 day	Mon 9/7/20	Mon 9/7/20	9,10,11,12,13,14,15
17	**1.3**		**Project Execution**	**394 days**	**Tue 9/8/20**	**Fri 3/11/22**	
18	**1.3.1**		**Release 1**	**175 days**	**Tue 9/8/20**	**Mon 5/10/21**	
19	1.3.1.1		Analysis Phase	30 days	Tue 9/8/20	Mon 10/19/2	18
20	1.3.1.2		Design Phase	40 days	Tue 10/20/20	Mon 12/14/2	19
21	1.3.1.3		Construcion Phase	60 days	Tue 12/15/20	Mon 3/8/21	20
22	1.3.1.4		Validation Phase	25 days	Tue 3/9/21	Mon 4/12/21	21
23	1.3.1.5		Deployment Phase	15 days	Tue 4/13/21	Mon 5/3/21	22
24	1.3.1.6		Closeout	5 days	Tue 5/4/21	Mon 5/10/21	23
25	1.3.1.7		Release 1 Complete	0 days	Mon 5/10/21	Mon 5/10/21	24
26	**1.3.2**		**Release 2**	**73 days**	**Tue 5/11/21**	**Thu 8/19/21**	



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GANTT CHART

	WBS	Task Mode	Task Name	Duration	Start	Finish	Predecessors
27	1.3.2.1		Analysis Phase	10 days	Tue 5/11/21	Mon 5/24/21	18
28	1.3.2.2		Design Phase	15 days	Tue 5/25/21	Mon 6/14/21	27
29	1.3.2.3		Construcion Phase	25 days	Tue 6/15/21	Mon 7/19/21	28
30	1.3.2.4		Validation Phase	10 days	Tue 7/20/21	Mon 8/2/21	29
31	1.3.2.5		Deployment Phase	10 days	Tue 8/3/21	Mon 8/16/21	30
32	1.3.2.6		Closeout	3 days	Tue 8/17/21	Thu 8/19/21	31
33	1.3.2.7		Release 2 Complete	0 days	Thu 8/19/21	Thu 8/19/21	32
34	**1.3.3**		**Release 3**	**73 days**	**Fri 8/20/21**	**Tue 11/30/21**	
35	1.3.3.1		Analysis Phase	10 days	Fri 8/20/21	Thu 9/2/21	26
36	1.3.3.2		Design Phase	15 days	Fri 9/3/21	Thu 9/23/21	35
37	1.3.3.3		Construcion Phase	25 days	Fri 9/24/21	Thu 10/28/21	36
38	1.3.3.4		Validation Phase	10 days	Fri 10/29/21	Thu 11/11/21	37
39	1.3.3.5		Deployment Phase	10 days	Fri 11/12/21	Thu 11/25/21	38
40	1.3.3.6		Closeout	3 days	Fri 11/26/21	Tue 11/30/21	39
41	1.3.3.7		Release 3 Complete	0 days	Tue 11/30/21	Tue 11/30/21	40
42	**1.3.4**		**Release 4**	**73 days**	**Wed 12/1/21**	**Fri 3/11/22**	
43	1.3.4.1		Analysis Phase	10 days	Wed 12/1/21	Tue 12/14/21	34
44	1.3.4.2		Design Phase	15 days	Wed 12/15/2	Tue 1/4/22	43
45	1.3.4.3		Construcion Phase	25 days	Wed 1/5/22	Tue 2/8/22	44
46	1.3.4.4		Validation Phase	10 days	Wed 2/9/22	Tue 2/22/22	45
47	1.3.4.5		Deployment Phase	10 days	Wed 2/23/22	Tue 3/8/22	46
48	1.3.4.6		Closeout	3 days	Wed 3/9/22	Fri 3/11/22	47
49	1.3.4.7		Release 4 Complete	0 days	Fri 3/11/22	Fri 3/11/22	48
50	1.3.5		Execution Complete	0 days	Fri 3/11/22	Fri 3/11/22	18,26,34,42
51	1.4		Project Closeout	1 day	Mon 3/14/22	Mon 3/14/22	17
52	1.5		Project Comlete	0 days	Mon 3/14/22	Mon 3/14/22	51

Resource Management
Roles and Responsibility Matrix (RRM)

WBS	Task Name	Project Manager 1	Project Manager 2	System Analyst 1	System Analyst 2	Software Engineer 1	Software Engineer 2	Software Engineer 3	Quality Engineer 1	Quality Engineer 2	Testing Engineer 1	Testing Engineer 2	Testing Engineer 3	Developer 1	Developer 2	Developer 3	Developer 4	Developer 5	Developer 6	Developer 7	Developer 8	Developer 9	Developer 10
1	**QMS System**																						
1.1	**Project Initiation**																						
1.1.1	Develop Project Charter	A	R			I																	
1.1.2	Devolop Statement of Work	A		C	R		I																
1.1.3	Develop Preliminary Scope Development	R	R	C	I	C		I						I									
1.1.4	Develop Preliminary Architictural Model		A	R	R		I	I		C													
1.1.5	Project Initiation Complete	A	R						R	I													
1.2	**Project Plan**																						
1.2.1	Develop Scope Management Plan	R	C																				
1.2.2	Develop Change Management Plan			R	C																		
1.2.3	Develop Initial Descriptive Budget	C	R	I	I																		
1.2.4	Develop Schedule	A		R		R																	
1.2.5	Develop Quality Management Plan		A		I		C		R														
1.2.6	Develop Human Resource Plan		C	R																			
1.2.7	Develop Risk Management Plan	A						R															
1.2.8	Project Plan Complete	R	R																				
1.3	**Project Execution**																						
1.3.1	**Release 1**																						
1.3.1.1	Analysis Phase			A	C	R	R							I	I								
1.3.1.2	Design Phase			A	C		R	R						I	I	I	I						
1.3.1.3	Construcion Phase			A	R									I	I	I	I	I	I	I	I	I	I
1.3.1.4	Validation Phase		A							C	R	R	R					I	I				
1.3.1.5	Deployment Phase			A	R				C											I	I	I	I
1.3.1.6	Closeout		A	R		I			C		I												
1.3.1.7	Release 1Complete	R	R																				
1.3.2	**Release 2**																						
1.3.2.1	Analysis Phase			A	C	R	R							I	I								
1.3.2.2	Design Phase			A	C		R	R						I	I	I	I						
1.3.2.3	Construcion Phase			A	R									I	I	I	I	I	I	I	I	I	I
1.3.2.4	Validation Phase		A							C	R	R	R					I	I				
1.3.2.5	Deployment Phase			A	R				C											I	I	I	I
1.3.2.6	Closeout		A	R		I			C		I												
1.3.2.7	Release 2 Complete	R	R																				
1.3.3	**Release 3**																						
1.3.3.1	Analysis Phase			A	C	R	R							I	I								
1.3.3.2	Design Phase			A	C		R	R						I	I	I	I						
1.3.3.3	Construcion Phase			A	R									I	I	I	I	I	I	I	I	I	I
1.3.3.4	Validation Phase		A							C	R	R	R					I	I				
1.3.3.5	Deployment Phase			A	R				C											I	I	I	I
1.3.3.6	Closeout		A	R		I			C		I												
1.3.3.7	Release 3 Complete	R	R																				
1.3.4	**Release 4**																						
1.3.4.1	Analysis Phase			A	C	R	R							I	I								
1.3.4.2	Design Phase			A	C		R	R						I	I	I	I						
1.3.4.3	Construcion Phase			A	R									I	I	I	I	I	I	I	I	I	I
1.3.4.4	Validation Phase		A							C	R	R	R					I	I				
1.3.4.5	Deployment Phase			A	R				C											I	I	I	I
1.3.4.6	Closeout		A	R		I			C		I												
1.3.4.7	Release 4 Complete	R	R																				
1.3.5	Execution Complete																						
1.4	**Project Closeout**	R																					
1.5	**Project Comlete**	R																					

Resource Management
Human Resources & Material Resources

Human Resources	Material Resources	Human Resources	Material Resources
Project Manager1	Laptop1,PDA1,Cellphone1	Testing Engineer3	Laptop12, Cellphone12
Project Manager2	Laptop2,PDA2,Cellphone2	Developer1	Desktop1
System Analyst1	Laptop3,Cellphone3	Developer2	Desktop2
System Analyst2	Laptop4,Cellphone4	Developer3	Desktop3
Quality Engineer 1	Laptop5, Cellphone5	Developer4	Desktop4
Quality Engineer 2	Laptop6, Cellphone6	Developer5	Desktop5
Software Engineer1	Laptop7, Cellphone7, PDA3	Developer6	Desktop6
Software Engineer2	Laptop8, Cellphone8, PDA4	Developer7	Desktop7
Software Engineer3	Laptop9, Cellphone9, PDA5	Developer8	Desktop8
Testing Engineer1	Laptop10, Cellphone10	Developer9	Desktop9
Testing Engineer2	Laptop11, Cellphone11	Developer10	Desktop10

Resource Management
Project Phases Resources

WBS	Task Name	Human and Material Resources
1	**QMS System**	
1.1	**Project Initiation**	
1.1.1	Develop Project Charter	Project Manager1,Project Manager2,Software Engineer1,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2,Laptop7, Cellphone7, PDA3
1.1.2	Devolop Statement of Work	Project Manager1,System Analyst1,System Analyst2,Software Engineer2,Laptop1,PDA1,Cellphone1,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop8,Cellphone8,PDA4
1.1.3	Develop Preliminary Scope Development	Project Manager1,Project Manager2,System Analyst1,System Analyst2,Software Engineer1,Software Engineer3, Developer1,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop7, Cellphone7, PDA3,Laptop9, Cellphone9, PDA5, Desktop1
1.1.4	Develop Preliminary Architictural Model	Project Manager2,System Analyst1,System Analyst2,Quality Engineer 2,Software Engineer2,Software Engineer3,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop6, Cellphone6,Laptop8, Cellphone8, PDA4,Laptop9, Cellphone9, PDA5
1.1.5	Project Initiation Complete	Project Manager1,Project Manager2,Quality Engineer 1,Quality Engineer 2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2,Laptop5, Cellphone5,Laptop6, Cellphone6
1.2	**Project Plan**	
1.2.1	Develop Scope Management Plan	Project Manager1,Project Manager2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2
1.2.2	Develop Change Management Plan	System Analyst1,System Analyst2,Laptop3,Cellphone3,Laptop4,Cellphone4
1.2.3	Develop Initial Descriptive Budget	Project Manager1,Project Manager2,System Analyst1,System Analyst2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3,Laptop4,Cellphone4
1.2.4	Develop Schedule	Project Manager1,System Analyst1,Software Engineer1,Laptop1,PDA1,Cellphone1,Laptop3,Cellphone3,Laptop7, Cellphone7, PDA3
1.2.5	Develop Quality Management Plan	Project Manager2,System Analyst2,Quality Engineer 1,Software Engineer2,Laptop2,PDA2,Cellphone2,Laptop4,Cellphone4,Laptop5, Cellphone5,Laptop8, Cellphone8, PDA4
1.2.6	Develop Human Resource Plan	Project Manager2,System Analyst1,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3
1.2.7	Develop Risk Management Plan	Project Manager2,Software Engineer3,Laptop2,PDA2,Cellphone2,Laptop9, Cellphone9, PDA5
1.2.8	Project Plan Complete	Project Manager1,Project Manager2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2

Resource Management
Project Phases Resources – Cont.

WBS	Task Name	Human and Material Resources
1.3	**Project Execution**	
1.3.1	**Release 1**	
1.3.1.1	Analysis Phase	System Analyst1,System Analyst2,Software Engineer1,Software Engineer2,Developer1,Developer2,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop7, Cellphone7, PDA3,Laptop8, Cellphone8, PDA4,Desktop1,Desktop2
1.3.1.2	Design Phase	System Analyst1,System Analyst2,Software Engineer2,Software Engineer3,Developer1,Developer2,Developer3,Developer4,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop8, Cellphone8, PDA4,Laptop9, Cellphone9, PDA5,Desktop1,Desktop2,Desktop3,Desktop4
1.3.1.3	Construcion Phase	System Analyst1,System Analyst2,Developer1,Developer2,Developer3,Developer4,Developer5,Developer6,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Desktop1,Desktop2,Desktop3,Desktop4,Desktop5,Desktop6,Desktop7,Desktop8,Desktop9,Desktop10
1.3.1.4	Validation Phase	Project Manager2,Quality Engineer 2,Testing Engineer1,Testing Engineer2,Testing Engineer3,Developer5,Developer6,Laptop2,PDA2,Cellphone2,Laptop6, Cellphone6,Laptop10, Cellphone10,Laptop11, Cellphone11,Laptop12, Cellphone12,Desktop5,Desktop6
1.3.1.5	Deployment Phase	System Analyst1,System Analyst2,Quality Engineer 1,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop5, Cellphone5,Desktop7,Desktop8,Desktop9,Desktop10
1.3.1.6	Closeout	Project Manager2,System Analyst1,Quality Engineer 1,Software Engineer1,Testing Engineer1,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3,Laptop5, Cellphone5,Laptop7, Cellphone7, PDA3,Laptop10, Cellphone10
1.3.1.7	Release 1 Complete	Project Manager1,Project Manager2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2
1.3.2	**Release 2**	
1.3.2.1	Analysis Phase	System Analyst1,System Analyst2,Software Engineer1,Software Engineer2,Developer1,Developer2,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop7, Cellphone7, PDA3,Laptop8, Cellphone8, PDA4,Desktop1,Desktop2
1.3.2.2	Design Phase	System Analyst1,System Analyst2,Software Engineer2,Software Engineer3,Developer1,Developer2,Developer3,Developer4,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop8, Cellphone8, PDA4,Laptop9, Cellphone9, PDA5,Desktop1,Desktop2,Desktop3,Desktop4
1.3.2.3	Construcion Phase	System Analyst1,System Analyst2,Developer1,Developer2,Developer3,Developer4,Developer5,Developer6,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Desktop1,Desktop2,Desktop3,Desktop4,Desktop5,Desktop6,Desktop7,Desktop8,Desktop9,Desktop10
1.3.2.4	Validation Phase	Project Manager2,Quality Engineer 2,Testing Engineer1,Testing Engineer2,Testing Engineer3,Developer5,Developer6,Laptop2,PDA2,Cellphone2,Laptop6, Cellphone6,Laptop10, Cellphone10,Laptop11, Cellphone11,Laptop12, Cellphone12,Desktop5,Desktop6
1.3.2.5	Deployment Phase	System Analyst1,System Analyst2,Quality Engineer 1,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop5, Cellphone5,Desktop7,Desktop8,Desktop9,Desktop10
1.3.2.6	Closeout	Project Manager2,System Analyst1,Quality Engineer 1,Software Engineer1,Testing Engineer1,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3,Laptop5, Cellphone5,Laptop7, Cellphone7, PDA3,Laptop10, Cellphone10
1.3.2.7	Release 2 Complete	Project Manager1,Project Manager2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2
1.3.3	**Release 3**	
1.3.3.1	Analysis Phase	System Analyst1,System Analyst2,Software Engineer1,Software Engineer2,Developer1,Developer2,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop7, Cellphone7, PDA3,Laptop8, Cellphone8, PDA4,Desktop1,Desktop2
1.3.3.2	Design Phase	System Analyst1,System Analyst2,Software Engineer2,Software Engineer3,Developer1,Developer2,Developer3,Developer4,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop8, Cellphone8, PDA4,Laptop9, Cellphone9, PDA5,Desktop1,Desktop2,Desktop3,Desktop4
1.3.3.3	Construcion Phase	System Analyst1,System Analyst2,Developer1,Developer2,Developer3,Developer4,Developer5,Developer6,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Desktop1,Desktop2,Desktop3,Desktop4,Desktop5,Desktop6,Desktop7,Desktop8,Desktop9,Desktop10
1.3.3.4	Validation Phase	Project Manager2,Quality Engineer 2,Testing Engineer1,Testing Engineer2,Testing Engineer3,Developer5,Developer6,Laptop2,PDA2,Cellphone2,Laptop6, Cellphone6,Laptop10, Cellphone10,Laptop11, Cellphone11,Laptop12, Cellphone12,Desktop5,Desktop6
1.3.3.5	Deployment Phase	System Analyst1,System Analyst2,Quality Engineer 1,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop5, Cellphone5,Desktop7,Desktop8,Desktop9,Desktop10
1.3.3.6	Closeout	Project Manager2,System Analyst1,Quality Engineer 1,Software Engineer1,Testing Engineer1,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3,Laptop5, Cellphone5,Laptop7, Cellphone7, PDA3,Laptop10, Cellphone10
1.3.3.7	Release 3 Complete	Project Manager1,Project Manager2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2
1.3.4	**Release 4**	
1.3.4.1	Analysis Phase	System Analyst1,System Analyst2,Software Engineer1,Software Engineer2,Developer1,Developer2,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop7, Cellphone7, PDA3,Laptop8, Cellphone8, PDA4,Desktop1,Desktop2
1.3.4.2	Design Phase	System Analyst1,System Analyst2,Software Engineer2,Software Engineer3,Developer1,Developer2,Developer3,Developer4,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop8, Cellphone8, PDA4,Laptop9, Cellphone9, PDA5,Desktop1,Desktop2,Desktop3,Desktop4
1.3.4.3	Construcion Phase	System Analyst1,System Analyst2,Developer1,Developer2,Developer3,Developer4,Developer5,Developer6,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Desktop1,Desktop2,Desktop3,Desktop4,Desktop5,Desktop6,Desktop7,Desktop8,Desktop9,Desktop10
1.3.4.4	Validation Phase	Project Manager2,Quality Engineer 2,Testing Engineer1,Testing Engineer2,Testing Engineer3,Developer5,Developer6,Laptop2,PDA2,Cellphone2,Laptop6, Cellphone6,Laptop10, Cellphone10,Laptop11, Cellphone11,Laptop12, Cellphone12,Desktop5,Desktop6
1.3.4.5	Deployment Phase	System Analyst1,System Analyst2,Quality Engineer 1,Developer7,Developer8,Developer9,Developer10,Laptop3,Cellphone3,Laptop4,Cellphone4,Laptop5, Cellphone5,Desktop7,Desktop8,Desktop9,Desktop10
1.3.4.6	Closeout	Project Manager2,System Analyst1,Quality Engineer 1,Software Engineer1,Testing Engineer1,Laptop2,PDA2,Cellphone2,Laptop3,Cellphone3,Laptop5, Cellphone5,Laptop7, Cellphone7, PDA3,Laptop10, Cellphone10
1.3.4.7	Release 4 Complete	Project Manager1,Project Manager2,Laptop1,PDA1,Cellphone1,Laptop2,PDA2,Cellphone2
1.3.5	Execution Complete	
1.4	**Project Closeout**	Project Manager2,Laptop2,PDA2,Cellphone2
1.5	**Project Comlete**	Project Manager1,Laptop1,PDA1,Cellphone1

Resource Management
Human Resources

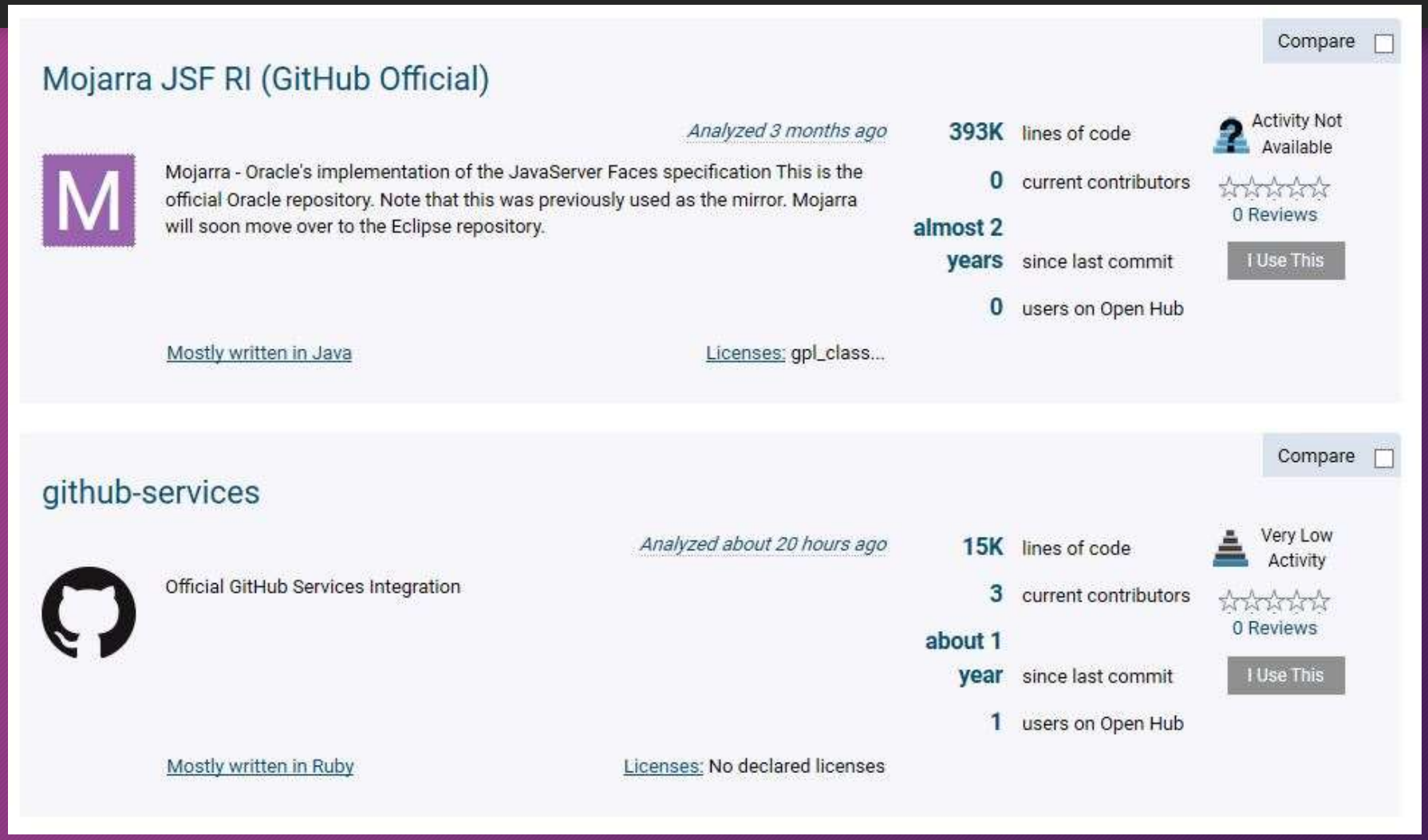
Position	Salary	Experience(Years)	Hourly Rate
Project Manager 1	$176,000	8-10	$80.00
Project Manager 2	$146,360	5-8	$66.53
System Analyst 1	$143,000	8-10	$65.00
System Analyst 2	$138,600	5-8	$63.00
Quality Engineer 1	$136,400	5-8	$62.00
Quality Engineer 2	$111,620	3-5	$50.74
Software Engineer 1	$132,000	8-10	$60.00
Software Engineer 2	$110,000	5-8	$50.00
Software Engineer 3	$103,620	3-5	$47.10
Testing Engineer 1	$66,000	5-8	$30.00
Testing Engineer 2	$63,800	3-5	$29.00
Testing Engineer 3	$63,800	3-5	$29.00
Developer 1	$121,000	5-8	$55.00
Developer 2	$121,000	5-8	$55.00
Developer 3	$83,600	3-5	$38.00
Developer 4	$83,600	3-5	$38.00
Developer 5	$83,600	3-5	$38.00
Developer 6	$83,600	3-5	$38.00
Developer 7	$83,600	3-5	$38.00
Developer 8	$83,600	3-5	$38.00
Developer 9	$83,600	3-5	$38.00
Developer 10	$83,600	3-5	$38.00

Resource Management
Material Resources

Material Resources	Price	Material Resources	Price
Laptop 1	$1,961.99	Cellphone 9	$763.00
Laptop 2	$1,885.69	Cellphone 10	$763.00
Laptop 3	$1,885.69	Cellphone 11	$654.00
Laptop 4	$1,743.99	Cellphone 12	$654.00
Laptop 5	$1,743.99	PDA 1	$653.99
Laptop 6	$1,743.99	PDA 2	$435.99
Laptop 7	$1,634.99	PDA 3	$435.99
Laptop 8	$1,634.99	PDA 4	$217,99
Laptop 9	$1,416.99	PDA 5	$217,99
Laptop 10	$1,416.99	Desktop 1	$2,397.99
Laptop 11	$1,416.99	Desktop 2	$2,397.99
Laptop 12	$1,362.49	Desktop 3	$1,664.60
Cellphone 1	$1,098.00	Desktop 4	$1,664.60
Cellphone 2	$981,00	Desktop 5	$1,664.60
Cellphone 3	$872.00	Desktop 6	$1,664.60
Cellphone 4	$872.00	Desktop 7	$1,504.19
Cellphone 5	$872.00	Desktop 8	$1,504.19
Cellphone 6	$872.00	Desktop 9	$1,504.19
Cellphone 7	$872.00	Desktop 10	$1,504.19
Cellphone 8	$763.00		

Cost Management

Project Cost Estimates
LOC Based Estimation



LOC Based Estimation

Compare ☐

Jenkins

Analyzed 4 months ago

Jenkins is a continuous integration server, allowing you to automatically monitor source repositories, build software and run tests. One-click installation and out-of-the-box cluster support make it easy to get started improving your software, or just giving you greater control of your daily task ... [More]

1.04M lines of code
263 current contributors
4 months since last commit
348 users on Open Hub

Activity Not Available
0 Reviews
I Use This

Mostly written in Java Licenses: mit

Tags: ant | automation | build | ci | continuous_integration | development | hudson | integration | java | jenkins | jobscheduling | process_automation | 4 more...

Compare ☐

Selenium

Analyzed 3 days ago

Selenium is a test tool for web applications. Selenium tests run directly in a browser, just as real users do. And they run in Internet Explorer, Mozilla and Firefox on Windows, Linux, and Macintosh. No other test tool covers such a wide array of platforms. * Browser compatibility testing. ... [More]

695K lines of code
82 current contributors
3 days since last commit
180 users on Open Hub

High Activity
0 Reviews
I Use This

Mostly written in JavaScript Licenses: apache_2

Tags: automation | development | functional_testing | java | javascript | python | selenium | testing | tests | web

LOC Based Estimate

LOC Based Estimation			
Function	Pages	Lines of Code per page	Total Lines Of Code
User Interfaces for Static Pages	170	110	18700
User Interface for Dynamic Pages	195	158	30810
Code behind Static Pages	180	135	24300
Code behind Dynamic Pages	240	165	39600
DataBase- SQL Stored Procedures	34	95	3230
Busines Layer Logical Pages	84	134	11256
Other Layer Logical Pages	28	70	1960
		Total	129856
		Total Project Cost	$2,077,696.00

$16 per line of code

Functional Point Analysis

Complexity Calculation							
Category	Low	Weight_L	Average	Weight_A	High	Weight_H	Total(T)
User Inputs	13	3	15	6	3	7	150
User Outputs	18	5	21	6	4	9	252
User Inquiries	28	7	23	6	14	6	418
File/Structures	21	11	14	12	4	15	459
External Interfaces	25	10	14	9	8	11	464
Unadjusted Total(UT):							1743
Cost per Function Point							1220
Total							$2,126,460.00

Cost Management
-list of project human resources (with salaries);

Resource Name	Type	Initials	Std. Rate
Project Manager 1	Work	P	$80.00/hr
Project Manager 2	Work	P	$66.53/hr
System Analyst 1	Work	S	$65.00/hr
System Analyst 2	Work	S	$63.00/hr
Quality Engineer 1	Work	Q	$62.00/hr
Qulaity Engineer 2	Work	Q	$50.74/hr
Software Engineer 1	Work	S	$60.00/hr
Software Engineer 2	Work	S	$50.00/hr
Software Engineer 3	Work	S	$47.10/hr
Testing Engineer 1	Work	T	$30.00/hr
Testing Engineer 2	Work	T	$29.00/hr
Testing Engineer 3	Work	T	$29.00/hr
Developer 1	Work	D	$55.00/hr
Developer 2	Work	D	$55.00/hr
Developer 3	Work	D	$38.00/hr
Developer 4	Work	D	$38.00/hr
Developer 5	Work	D	$38.00/hr
Developer 6	Work	D	$38.00/hr
Developer 7	Work	D	$38.00/hr
Developer 8	Work	D	$38.00/hr
Developer 9	Work	D	$38.00/hr
Developer 10	Work	D	$38.00/hr

Cost Management
-list of project materials (with costs)

Material Resources	Price	Material Resources	Price
Laptop 1	$1,961.99	Cellphone 9	$763.00
Laptop 2	$1,885.69	Cellphone 10	$763.00
Laptop 3	$1,885.69	Cellphone 11	$654.00
Laptop 4	$1,743.99	Cellphone 12	$654.00
Laptop 5	$1,743.99	PDA 1	$653.99
Laptop 6	$1,743.99	PDA 2	$435.99
Laptop 7	$1,634.99	PDA 3	$435.99
Laptop 8	$1,634.99	PDA 4	$217,99
Laptop 9	$1,416.99	PDA 5	$217,99
Laptop 10	$1,416.99	Desktop 1	$2,397.99
Laptop 11	$1,416.99	Desktop 2	$2,397.99
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Cellphone 3	$872.00	Desktop 6	$1,664.60
Cellphone 4	$872.00	Desktop 7	$1,504.19
Cellphone 5	$872.00	Desktop 8	$1,504.19
Cellphone 6	$872.00	Desktop 9	$1,504.19
Cellphone 7	$872.00	Desktop 10	$1,504.19
Cellphone 8	$763.00		

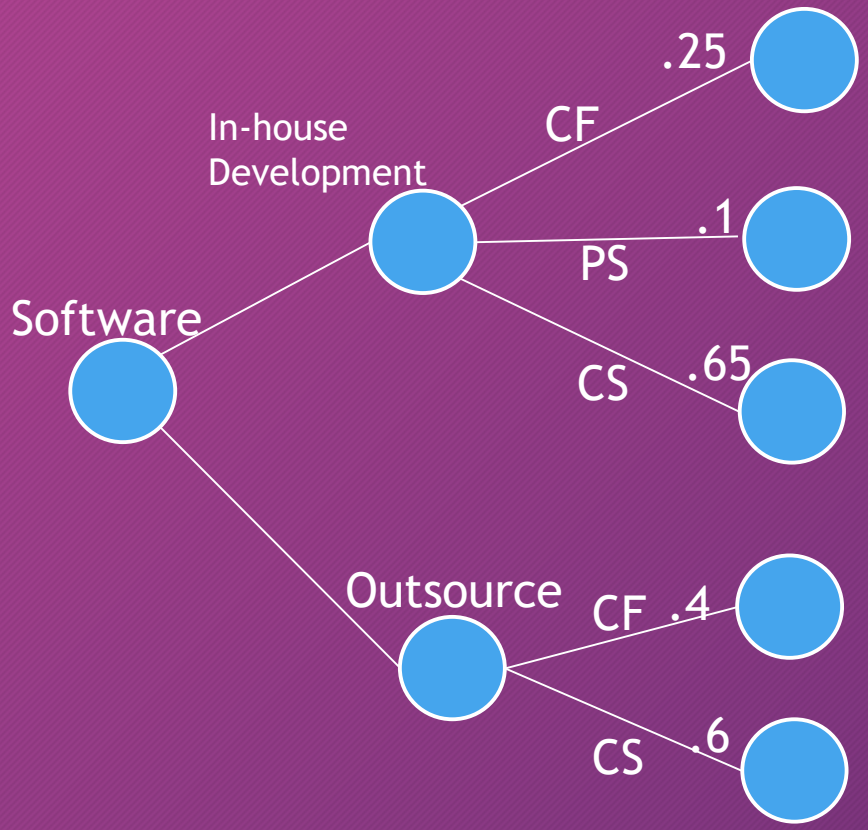
Cost Management
-project budget (partial outcome of Lab # 2)

Phases	Total Project Cost($)	Actual Cost($)	Remaining Cost($)
Project Initiation	$162,735.52	$162,735.52	$0.00
Project Plan	$286,971.5	$123,336.92	$163,634.58
Release 1	$684,274.56	$0.00	$684,274.56
Release 2	$342,645.68	$0.00	$342,645.68
Release 3	$342,645.68	$0.00	$342,645.68
Release 4	$342,645.68	$0.00	$342,645.68
Overall Project	**$2,165,753.54**	$286,072.44	$1,879,681.10

Cost Management
-Project Budget(Partial Outcome of Microsoft Project)

	Task Name	Cost
1	**QMS System**	**$2,165,753.54**
2	**Project Initiation**	**$162,735.52**
3	Develop Project Charter	$26,482.04
4	Devolop Statement of Work	$32,343.64
5	Develop Preliminary Scope Development	$37,594.49
6	Develop Preliminary Architictural Model	$43,695.91
7	Project Initiation Complete	$22,619.44
8	**Project Plan**	**$286,971.50**
9	Develop Scope Management Plan	$18,739.06
10	Develop Change Management Plan	$20,733.68
11	Develop Initial Descriptive Budget	$78,277.54
12	Develop Schedule	$42,214.65
13	Develop Quality Management Plan	$59,456.64
14	Develop Human Resource Plan	$21,843.97
15	Develop Risk Management Plan	$37,517.06
16	Project Plan Complete	$8,188.90
17	**Project Execution**	**$1,712,211.60**
18	**Release 1**	**$684,274.56**
19	Analysis Phase	$99,248.62
20	Design Phase	$150,064.82
21	Construcion Phase	$283,004.82
22	Validation Phase	$71,769.34
23	Deployment Phase	$55,046.43
24	Closeout	$25,140.53
25	Release 1 Complete	$0.00
26	**Release 2**	**$342,645.68**
27	Analysis Phase	$43,568.62
28	Design Phase	$67,844.82
29	Construcion Phase	$131,244.82
30	Validation Phase	$38,016.94
31	Deployment Phase	$41,366.43
32	Closeout	$20,604.05
33	Release 2 Complete	$0.00
34	**Release 3**	**$342,645.68**
35	Analysis Phase	$43,568.62
36	Design Phase	$67,844.82
37	Construcion Phase	$131,244.82
38	Validation Phase	$38,016.94
39	Deployment Phase	$41,366.43
40	Closeout	$20,604.05
41	Release 3 Complete	$0.00
42	**Release 4**	**$342,645.68**
43	Analysis Phase	$43,568.62
44	Design Phase	$67,844.82

Risk Management-Decision Tree analysis with EMV



	Probability	Original Cost	Outcome	Final Cost(Probability* Outcome)
In-house Development	CF(.25)	$2,165,753.54	$86,371.24	$21,592.81
	PS(.1)	$2,165,753.54	$1,362,282.64	$136,228.26
	CS(.65)	$2,165,753.54	$2,165,753.54	$1,407,739.80
			Total	$1,565,560.88
Outsource	CF(.4)	$2,165,753.54	$35,056.86	$14,022.74
	CS(.6)	$2,165,753.54	$2,165,753.54	$1,299,452.12
			Total	$1,313,474.87

Risk Management

- Risk List (with at least 7 different types of risks associated with this project)

Types of Risks	Key	Explanation
Integration Management	Integration points	Avoiding extreme complexity by smart and simple planning will result in a better integration.
Scope Management	Change in requirements	Frequent changes to the requirements can cause serious damage to the project.
Time Management	Unrealistic schedules	Setting unrealistic schedules is a sign of poor management and can cause unwanted and very expensive delays.
Cost Management	Unproven technology	The use of unproven technologies might prove more problematic than beneficial.
Quality Management	Testing plans	Testing can be performed often to insure the early discovery of problems.
Human Resource Management	Experience and knowledge	Staff need to have knowledge and experience and be provided with proper training to work in a QMS project.
Communication Management	Lack of communication or miscommunication	All parties involved in the project need to communicate and provide feedback to guarantee the success of the project.
Procurement Management	Change in staff	Any changes in the staff (Project managers, System analysts, Software engineers, Quality Engineers, Testing engineers) will complicate the completion of the project.

Risk Management-Risk Impact and probability

S.NO	Risk	Impact	Probability
1	Cost management	Medium	Medium low
2	Requirement Analysis	Medium Low	Low
3	Beginners on the project	High	High
4	Using APIs or Third party Used	Medium High	Medium High
5	Acquiring New System	Low	Medium
6	Using the Offshore Resources	Medium	High
7	Knowledge Transfer on New Transfer	Medium High	High

Risk Management
-Risk Exposure table

Risk No.	Risk Drivers	Risk Probability (RP)	Risk Impact (RI)	Risk Exposure (RP * RI)
1	Experience and Teaming	Medium (0.5)	Medium (0.5)	0.25
2	Requirements and Design	Medium (0.5)	Medium High (0.7)	0.35
3	Planning	Medium Low (0.3)	Medium Low (0.3)	0.09
4	Testing	Medium (0.5)	Medium High(0.7)	0.35
5	Tools	Low (0.1)	Medium Low (0.3)	0.03
6	Schedule	Medium High (0.7)	Medium Low (0.3)	0.21
	Total Risk Adjustment Factor			1.28

Risk Management- Probability Impact Matrix

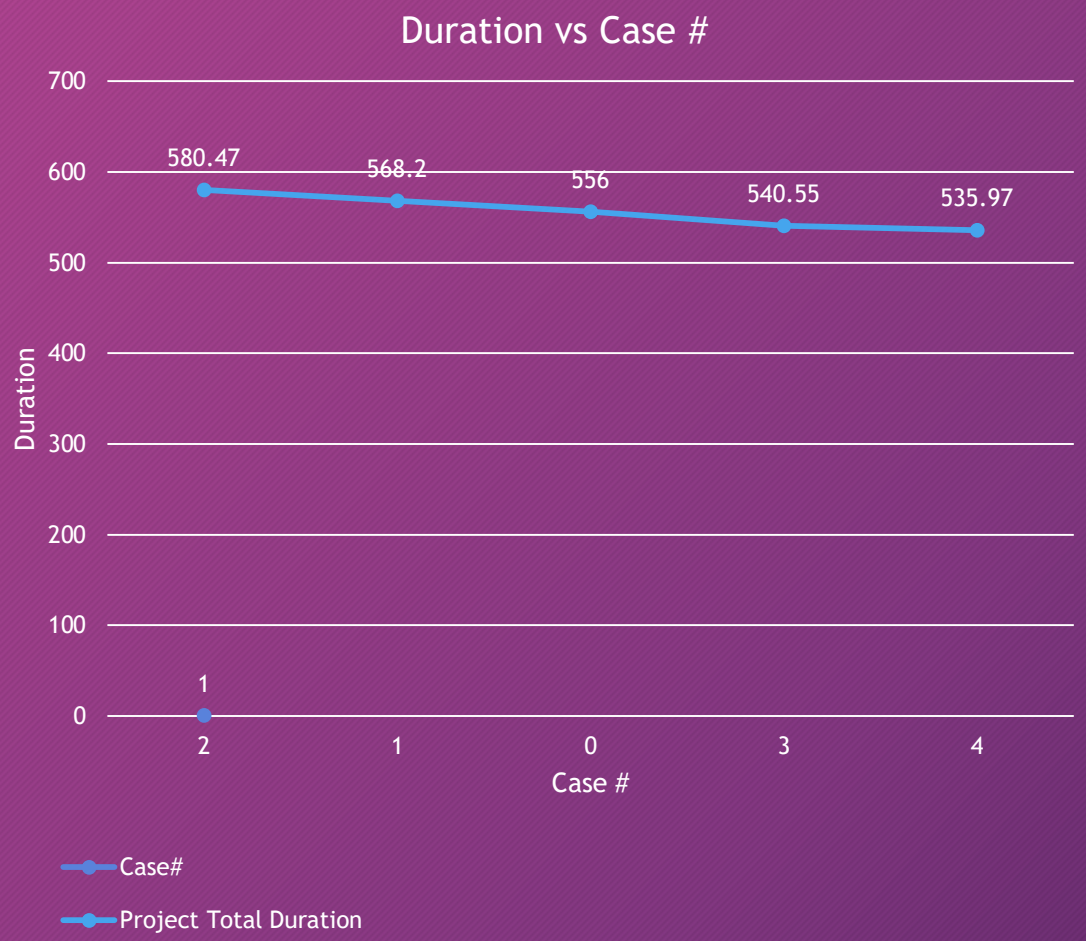
Impact / Probability	Low	Low Medium	Medium	Medium High	High
Low					
Medium Low	5	3		6	
Medium			1		
Medium High			2,4		
High				7	

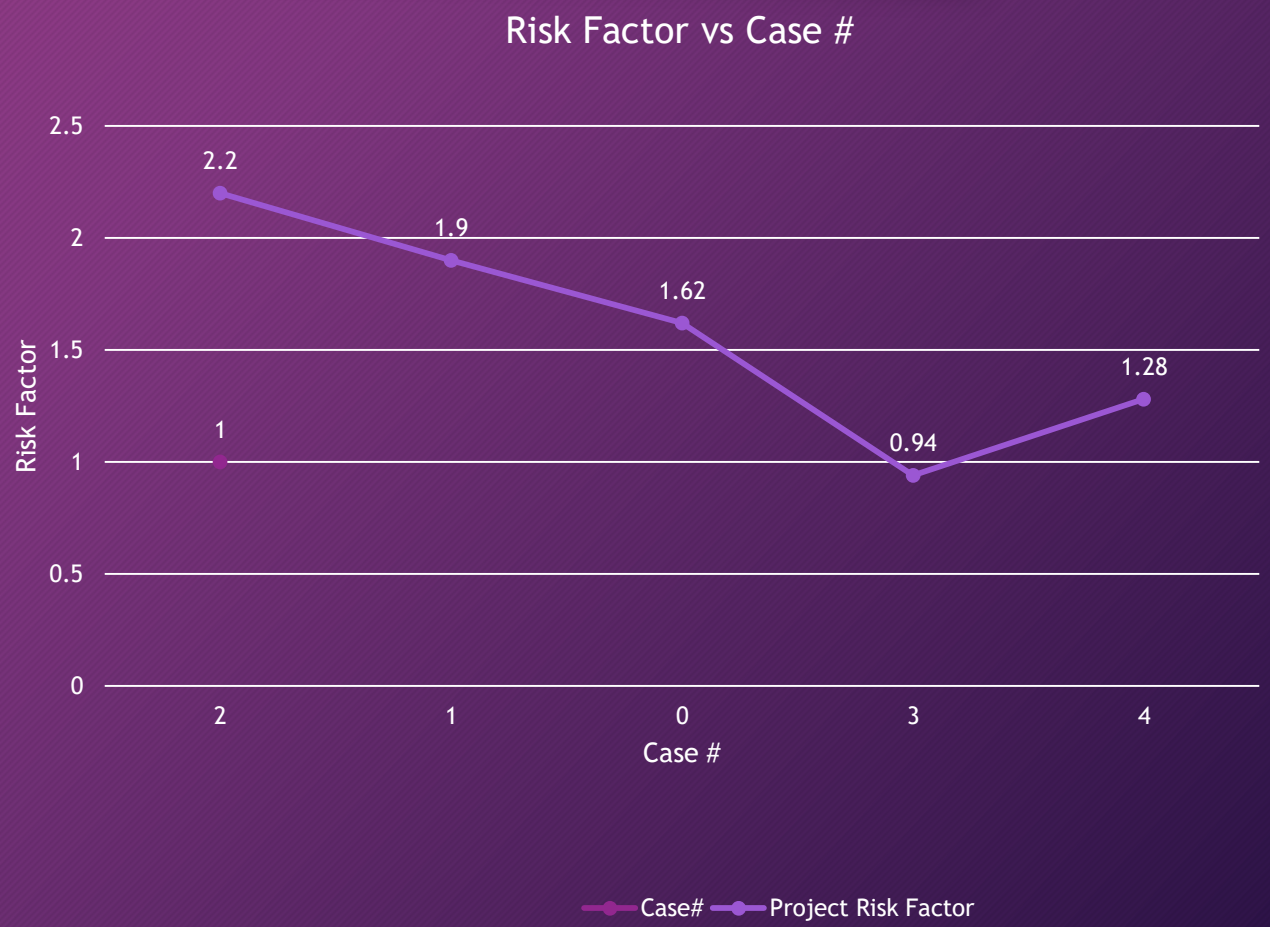
Risk Management -Lab 03 Outcomes

Case #	Project Total Cost	Risk Factor	Duration(Days)	Probability	Expected Value
0	$2,165,753.54	1.62	556 days		
1(Remove 1 expert)	$2,150,755.59	1.9	568.2 days	Partial Failure(35%)	($5,249.28)
2(Remove 2 Experts)	$2,135,589.87	2.2	580.47 days	Complete Failure(30%)	($9,049.10)
3(add 2 Expert)	$2,165,777.26	0.94	540.55 days	Complete Success(15%)	$3.56
4(Add 4 beginners)	$2,172,957.33	1.28	535.97 days	Partial Success(20%)	$1,440.76
				EMV	($12,854.07)
				Total EMV	$2,152,899.47

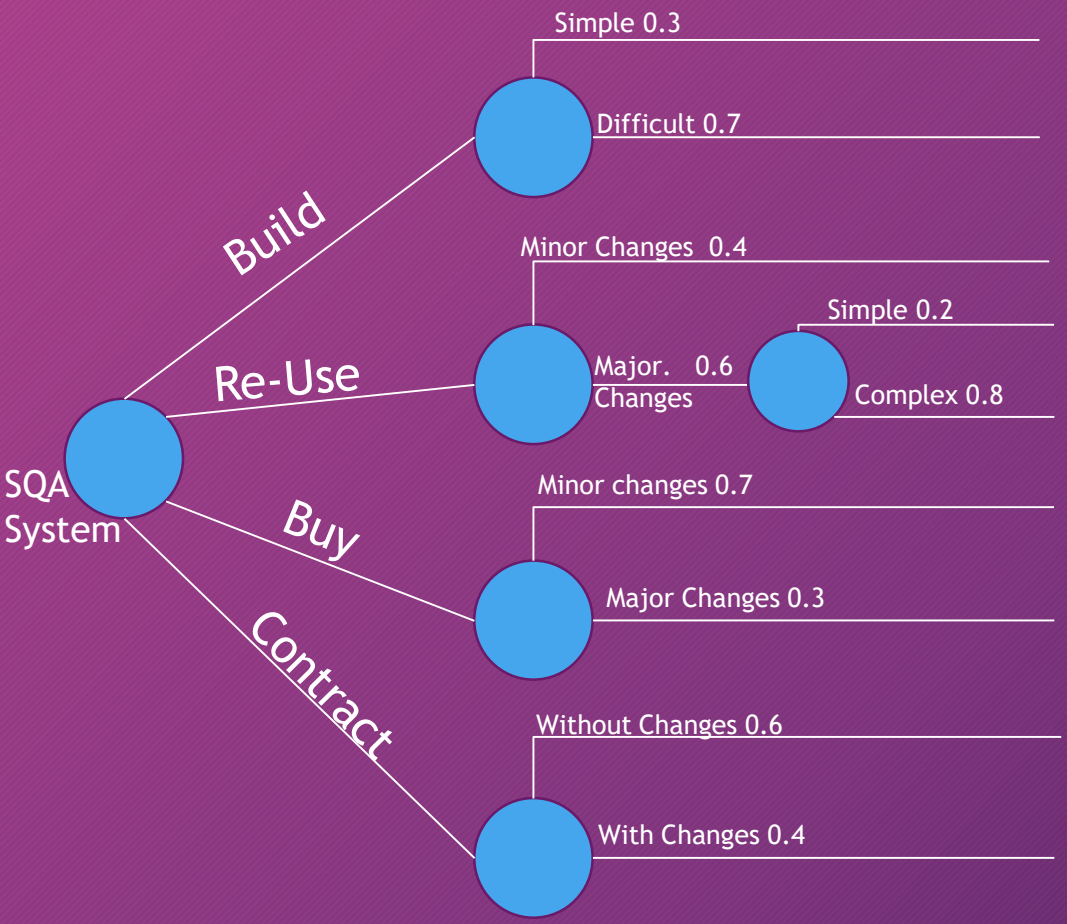
Risk Management
-Project Prioritized Risks diagram

Risk Management
-Project Prioritized Risks diagram Part 2





Procurement Management-Make or Buy Diagram



Simple	0.3			$2,165,753.54	$649,726.06
Difficult	0.7			$2,500,753.54	$1,750,527.48
				Total	$2,400,253.54
Minor Changes	0.4		1	$550,753.54	$220,301.42
Major Changes	0.6	Simple	0.2	$780,753.54	$156,150.71
	0.6	Complex	0.8	$980,753.54	$784,602.83
				Total	$1,161,054.96
Minor Changes	0.7			$2,350,753.54	$1,645,527.48
Major Changes	0.3			$2,420,753.54	$726,226.06
				Total	$2,371,753.54
Without Changes	0.6			$2,380,753.54	$1,428,452.12
With Changes	0.4			$2,580,753.54	$1,032,301.42
				Total	$2,460,753.54

Procurement Management- Contract to be used—Using CPIF

Case 1

- Sharing Formula : 85/15, 85% by buyer and 15% by seller
- Allowable cost: $2,050,500.5
- Target Fee: $150,000
- Maximum Fee :$180,000
- Minimum Fee :$90,000

- Project Result:

➢ Seller completes the project at cost of $1,850,753.54

➢ seller is paid $1,850,753.54+($2,050,500.5-$1,850,743.54)*.15 + $150,000= $2,030,717.84

➢ **seller profit= $2,030,717.84-$1,850,753.54 = $179,964.3**

Case 2

- Sharing Formula :85/15, 85% by buyer and 15% by seller
- Allowable cost :$2,050,500.5
- Target Fee :$150,000
- Maximum Fee :$180,000
- Minimum Fee :$90,000

- Project Result:

➢ Seller completes the project at cost of $2200,753.54

➢ seller is paid: $2,050,500.5 + $90,000=$2140,500.5

➢ seller profit= $90,000

Statement of Work- Part1

Statement of Work	
Company name	Alanand Solutions
SOW Version	2.4.5
Date Submitted	5/7/2020
Author	Alanand
ORGANIZATION	
Client Name	Chillarga
Client Phone	(309)550-****
Client Email	chillargaunnavara@gmail.com
Current Mailing Address	1010 Chillarga Avenue, Jai Balayya Street,Ayyagare noone,NY.
Project	
Project Name	SQA System for Binami Software Company
Client	Chillarga Nenokadine
Brand	Dobbeyra
Begin Data	1/27/20
End Data	3/14/22
Project Duration	556
GOALS	
Objective	To provide a SQA system which tests the Software Systems
Business	Providing Software Systems
Solution	Software Solutions
Technical	Every Technical Support
Service	Service for 3 Years

Statement Of Work- Part 2

Milestones	
Estimated Delivery Date	Project Milestone Title
5/10/21	Release 1
8/19/21	Release 2
11/30/21	Release 3
3/11/22	Release 4

Standard Adherence
The incremental Model is used so which suits the SQA system to build and modify for every increment

Rate Schedule		
Estimated Cost	Delivery Schedule	Description
$162,735.52	3/20/20	1.1 Project Initiation
$286,971.50	9/7/20	1.2 Project Plan
$684,274.56	5/10/21	1.3.1 Release 1
$342,645.68	8/19/21	1.3.2 Release 2
$342,645.68	11/30/21	1.3.3 Release 3
$342,645.68	3/11/22	1.3.4 Release 4
$2,165,753.54	3/14/22	Overall Project

POINTS OF CONTACT	
Name/Title	Contact Info
Project Manager	**********
Project Manager2	**********

Statement Of Work – Part3

POINTS OF CONTACT	
Name/Title	Contact Info
Project Manager	**********
Project Manager2	**********
Business Terms/Conditions	
Duration of Services	3 years of support
Terms of Payment	Release Wise Payment
Contract Modifications	Will be flexible till 2nd Release
Confidentiality	The information is made confiedntial only to the Project Team
Authorization	
Client Signature	Anand Reddy
Client Printed Name	Anand Reddy Sripathi
Client Date	5/7/2020

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THANK YOU