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# GYMSYS

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Software Project Management

## Software Project Plan

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## 1.Introduction

Gym management system (GymSys) is a web based computer system that managed any fitness centers (public) operations include accounting, point of sale member's payments, employee's presence and absence days, besides the ability of managing equipment details. By using this System customer can register electronically by computer or smart phones, that allows him to online registration, comment and inquire about any information related to the gym, he can choose the period of time he wants to register in, choose a specific trainer and kind of training he need then get healthy meals program, the system directs him how much he must lose weight, then provide to him suitable feeding program. the receptionist (storing information). Receptionist can add the details of a person who wish to join the gym. Their personal information including weight, height and phone number are collected.

### 1.1 Goals and Objectives

Work less! Earn more!

The key goals of GymSys:

- The main objective of this project is to develop software that facilitates data storage, data maintenance and its retrieval process for the gym in short time and easy way.
- To store the record of the customers, the staff that has the privileges to access any database, modify and delete any record and finally the service gym provides to its customers.
- Allows those who wish to join fitness center to register electronically from anywhere, see the offers provided by the gym and choose what suits to him without having to go to the gym for that.
- To develop a flexible system, that will eliminate data redundancy and using of paper.
- Making easier communication between the manager and staff, manager could make decisions, prevent, give privilege and monitor the work of staff.
- The system provides to the customer things that are encouraging to join gym and this in turn increases the budget.

## 1.2 Project Scope

GymSys is a web based computer system that managed fitness centers operations, so it supposed to help with the weary daily tasks for managers and employees inside fitness centers.

gym management system is used to facilitate communication with customers and to make the management process & control much easier, on the one hand Sorting and collecting member's details, check, bills, discounts, access control, Debt and overhead, POS and accounting collection.

customers can register, ask about any information related to the gym, in case of holidays or events Customer notice by the management of the gym through text messages on mobile phone, GymSys also provides application to the customer gives instructions through exercise without the need for a trained permanently, at the same time to help customers losing weight, the application works as a specialist feed, presents a special diet for each customer depending on the customer's weight, presents calories in each meal, the shape of the body is expected to get it after this diet so it reduces the long working hours for coaches.

### **1.2.1 Major Features and Benefits**

GymSys where this system is easy to use and It will provide many things for workers, customers and manager, as we will explain it:

- **For manager**

Manager has more authority than the employee. He provides unique username and password for the employee. He even has the authority to add the gym equipment's to the software, delete or modify it, gets feedback, communication with anyone from employees and customers, making decisions Monitor, control of everything in the gym.

- **For Employee**

this system helps him in registration process out of use pens and paper, he has username and password provided by admin, he can control the database so that any information needed can be retrieved easily, also provides timings for that person, when he can come

to the gym. As soon as that particular person arrives, his day of attendance will be marked by the receptionist

- **for customer**

GymSys has facilitated to customer, also they will be able to sign in by adding his details, their personal information including weight, height and phone number, and they can choose the training time and trainers when he can come to the gym, also this system will provide the customer with a healthy diet program that helps to weight loss, it is also possible to get the bill and know the value of it with this application.

- **the cost of the project**

The initial Construction Cost Estimate this system will developed with good experience in 6 months. the resources of this project:

internet 600\$, maintenance 300\$, other running cost 100\$, utility 600\$ server 200\$, laptops/ PC 500 \$ and router costs 25\$ also the project requires programmers 1000\$ monthly, software engineers 1500\$ monthly, designer & developer 900\$, IT staff 950\$. (monthly 5550\$)

## **1.2.2 Additional Enhancements**

While there are a number of features, needs, wants, and/or capabilities known, there are some of these that will not be planned for the final release of this project.

- this system will contain the application on each device to measure biological processes as heart beats when do any effort.

## 1.3 Context

fitness it is not just for thin people but for all to make their body more activity and healthy ,so GymSys is helping you to do it , let you as a customer register on the gym electronically by computer or smart phones through enter name and password ,allows you to choose the training time and trainers as suits you, and to get the bill and know the value of it with this system ,you only need to attend to the club and practice exercises ,moreover It is also has advantages provides some tips and feeding program that helps to weight loss.

## 1.4 Major Constraints

### 1.4.1 Business Constraints

- Lot of memory space is required for installing existing software.



### 1.4.2 Technical Constraints

- Today's systems are time taking software and cannot be easily install in operating system Like Linux, vista and Novel. also, need high configuration of pc.
- GymSys needs to access the Internet to use it, so that deal with it in the case of the Internet access was weak it may lead to slow in the conduct of the calculations & retrieval data process.

### 1.4.3 Performance Constraints

- **Reliability of System**
  - the reliability of this system refers to the ability of a computer-related hardware or software component to consistently perform according to its specifications.
- *Availability of System*
  - For the availability of the system, GymSys will have an availability of 80%.
- **Maintainability of System**
  - this system will be accepting changes can be made to a software system. These changes may be necessary for the correction of faults, adaptation of the system to a meet a new requirement, addition of new functionality, removal of existing functionality or corrected when errors or deficiencies occur and can be perfected, adapted or action taken to reduce further maintenance costs.

## 2. Project Estimates

For the GymSys project, we pull together historical for the estimates to calibrate the staffing costs, develop process-based and parametric estimates to triangulate on a final effort estimate, and gather and record the resource costs projected for this project.

We'll use the two categories of techniques for GymSys estimation, the first category is based upon the scientific methods such as COCOMO. in this method, we have mathematical equations and from those equations we calculate the Effort, DURATION and the *Cost*

in process based estimation we divided the system to subsystem as it's shown in the table below. we put the numbers based on what the system needs, then used the results in equations consequently, GymSys need 8 months' duration, 21 PM (Effort).

In the second category we estimate line of code (LOC) of the system based on previous projects, also we used COCOMO II program, filled it with suitable values, got LOC automatically .then we compared the two values >Almost equally

## 2.1 Historical Data Used for Estimates

This paragraph describes the historical data that used in GymSys project by mention Data function of the project, based on all these functions point we made process based estimation table if we know at least expected materiality of development (number of interfaces, or functional points), so we can search in history for similar implementations and see typical durations of similar task.

- Internal logical File
  1. Trainee online registration form.
  2. Trainer online registration form
  3. Training Information
- External Interface File(EIF)
  1. login 2
  2. view trainer information 1
  3. view trainings information 1
  4. view reports 1
- External input(EI)
  1. login 2
  2. Forgot password 1
  3. Add trainee information 2
  4. Add trainer information 2
  5. Add training information 2

- External output(EO)
  - 1. Check salary file 1
  - 2. yearly report 1
  - 3. Monthly report 1
  - 4. weekly report 1
  - 5. view trainee information 1
  - 6. view trainer information 1
- External Inquiries(EQ)
  - 1. Check file 1
  - 2. Report 1
  - 3. Drop down list box

### 2.1.1 Descriptions

This is project description of skills and experience are needed for GymSys

<b><i>Job Title &amp; Project Specific Responsibilities</i></b>	<b><i>Job Description</i></b>	<b><i>Salary (year)</i></b>
<b>Software Developer II</b>	Codes software applications to adhere to designs supporting internal business requirements or external customers. Standardizes the quality assurance procedure for software. Oversees testing and develops fixes. May require a bachelor's degree in a related area and 3-5 years of experience in the field or in a related area. Has knowledge of standard concepts, practices, and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a variety of tasks	<b>\$81,547</b>
<b>project manager I</b>	Responsible for the coordination and completion of projects. Oversees all aspects of projects. Sets deadlines, assigns responsibilities, and monitors and summarizes progress of project. Prepares reports for upper management regarding status of project	<b>\$69,010</b>
<b>Software Engineer III</b>  Project Responsibilities:  1. Technical Lead  2. Programming	“Designs, modifies, develops, writes and implements software programming applications. Supports and/or installs software applications/operating systems. Participates in the testing process through test review and analysis, test witnessing and certification of software. Requires a bachelor's degree in a related area and 4-6 years of experience in the field or in a related area. Relies on experience and judgment to plan and accomplish goals. Performs a variety of complicated tasks. May lead and direct the work of others. May report directly to a project lead or manager. A wide degree of creativity and latitude is expected.”	<b>\$86,664</b>
<b>Database Analyst II</b>  Project Responsibilities:  Database Management	Reviews, evaluates, designs, implements and maintains company database[s]. Identifies data sources, constructs data decomposition diagrams, provides data flow diagrams and documents the process.	<b>\$73,310</b>

For the project, we will be using one Software Engineer III, one Database Analyst II, and two Software Developer II, one project manager the labor rate was averaged using the following equation:

$$(\$81,547/12) * 0.5 + (\$69,010/12) * 0.25 + (\$86,664/12) * 0.25 + (\$73,310/12) * 0.25 = \$3500$$

This labor rate (i.e. salary) is then multiplied by 147% to account for overhead, benefits, and the like. Therefore, the burdened labor rate per month is **\$5147**.

## 2.2 Estimation Techniques Applied and Results

Below are the two estimation techniques were used to generate independent results for higher accuracy.

- Process-based
- COCOMO II Model – Source Lines of Code (SLOC)

Both arrived at very similar cost and time estimations for the project.

### 2.2.1 Process-Based Estimation

Methodology (Agile) The development methodology that we'll follow in this system is 'Agile methodology'. We started by the end of august studying the system and gathering requirements to have full understanding of the system. From time to time during system development, we asked for feedback on the system and made the required modification. We choose this methodology because of:

- The possibility of modification and change in the requirement.
- We want to develop a system that verify user satisfaction and fulfill their requirements.

For process-based estimation (Table 1), the system was decomposed into a smaller set of subsystems. The subsystems are as follows:

- Management reporting system.
- Website
- CMS
- Transaction process system
- Accounting system

Activity	Customer Comm.	Planning	Risk Analysis	Engineering		Construction Release		Customer Eval.	Totals
Task □				Analysis	Design	Code	Test		
<u>Subsystem</u>	(in months)								
CMS	0.00	0.09	0.04	0.40	0.60	0.40	0.60	0.00	1.77
Management reporting system.	0.00	0.03	0.02	0.50	0.70	0.35	0.70	0.09	2.39
Accounting system	0.09	0.04	0.06	0.47	0.70	0.37	0.70	0.00	2.43
Website	0.09	0.05	0.09	0.70	0.93	0.70	1.63	0.09	4.28
Transaction process system	0.09	0.05	0.09	0.70	0.93	0.70	1.63	0.09	4.28
Total	0.25	0.26	0.3	2.77	9.27	2.52	5.26	0.28	21
% effort	2.0%	1.6%	1.7%	16.4%	27.0%	15.6%	33.5%	2.2%	100%

Table 1- Process-based Estimation Table

Intermed. COCOMO	a	b
ORGANIC	3.2	1.05

$$\text{Effort} = \text{EAF} * a * \text{Size}^b$$

$$\text{PM} = \text{EAF} * 3.2 * (\text{size of code})^{1.05}$$

$$\text{PM} = \text{EAF} * 3.2 * (4.5 \text{ KDSI})^{1.05} = 21.4$$

$$\text{PM} = 21 \text{ person month}$$

$$\text{DURATION} = 2.5 * \text{Effort}^{0.38}$$

$$\text{DURATION} = 2.5 * 3.2 = 8.0325$$

> 8 months

How many people to hire?

$$21.4 \text{ person-month} / 8.0325 \text{ months} = 2.66 \text{ persons}$$

> 2 or 3 team members needed

Based on the historical data we obtained, the estimated effort is approximately **21 person-months** and the estimated personnel project cost is \$5147 x 21 H \$108087. With five project members, the project duration will be approximately **8 months**. Adding hardware and software will bring the total cost to approximately \$137,000

## 2.2.2 COCOMO II Model – Source Lines of Code (SLOC)

A SLOC based estimation using COCOMO II was used to estimate cost and effort of GymSys software development. The historical average SLOC was taken... Each module had the estimated SLOC with the total SLOC value in mind.

Subsystem	Estimated LOC
report system	600
Website	600
CMS	1300
Accounting system	1000
Transaction	1500
<b>Total Est.lines of code</b>	<b>4500</b>



Listed below are the factors that were adjusted to reflect the GymSys project circumstances. The following “**Factors**” were adjusted in COCOMO II for the entire project:

Scale Factor	Rating	Rationale/Assumptions
PREC	High	The organization seems to understand the project’s goals and have considerable experience in working related systems.
Development flexibility	Nominal	the ability to make changes in the product being developed or in how it is developed, even relatively late in development, without being too disruptive. Consequently, the later one can make changes, the more flexible the process is, the less disruptive the change is, the greater the flexibility. .
risk analysis	High	A risk analysis should highlight dangers, assess the potential injury and also provide solutions so that exercise equipment users are as safe as possible. Effective risk management should cover all types of exercise equipment, including cardio, free weights and resistance training machines
Team cohesion	high	it is reflected in the tendency for a group to work together and remain united in the pursuit for its goals and objectives
Process maturity		Reflects the process maturity of the organization

Product attributes	Rating	Rationale/Assumptions
RELY	Nominal	Potential losses seem to be easily recoverable and do not lead to high financial losses.
DATA	Nominal	.
CPLX	low	Software complexity is a natural byproduct of the functional complexity that the code is attempting to enable. With multiple system interfaces and complex requirements, the complexity of software systems sometimes

		grows beyond control, rendering applications and portfolios overly costly to maintain and risky to enhance.
RUSE		60 reusable software components were planned.
DOCU		All requirements should be gathered at the start because it becomes more costly to make changes as the project progresses. Gathering requirements from all stakeholders will also ensure that their opinions are taken into consideration, which will lead to higher rates of project acceptance.

Computer attributes	Rating	Rationale/Assumptions
TIME	High	This reflects the degree of execution time constraint imposed upon a software product. The rating is expressed in terms of available execution time expected to be used. .
PVOL	Low	"Platform" is used here to mean the complex of hardware and software
STOR	High	This rating represents the degree of main storage constraint imposed on a software system or subsystem. Given the remarkable increase in available processor execution time and main storage

Personnel Cost Drivers	Rating	Rationale/Assumptions
ACAP	High	Our Project Analysts enable us to build teams of cost effective high performers able to provide a sustainable change capacity to your function.
PCAP		This represents the capability of the programmers who will be working on the software product.

PCON		Personal continuity is the amount of time it takes an individual to effectively manage the safety and security of their family, assets and other secure-base figures during an unexpected event, fulfill assigned workplace roles and responsibilities and to reach a high degree of recovery to pre-event status or conditions afterward.
AEXP	High	the person who studies the software application domain, prepares software requirements, and specification documents.
PEXP		recognizing the importance of understanding the use of more powerful platforms, including more graphic user interface, database, networking, and distributed middleware capabilities.
LTEX	low	this is a measure of the level of programming language and software tool experience of the project team developing the software system or subsystem. In addition to experience in programming with a specific language the supporting tool set also effects development time.

Personnel attributes	Rating	Rationale/Assumptions
TOOL	very high	Software tools have improved significantly ,The tool rating ranges from simple edit and code, very low, to integrated lifecycle management tools, very high
SITE	Nominal	Given the increasing frequency of multi site developments, and indications that multisite development effects are significant,
SCED	High	This rating measures the schedule constraint imposed on the project team developing the software



Project Name: GymSys

Scale Factor

Schedule

Development Model: Early Design

K	Module Name	Module Size	LABOR Rate (\$/month)	EAF	Language	NCM Effort DEV	EST Effort DEV	PROD	COST	INST COST	Staff	RISK
	report system	A:1893	0.00	1.06	Non-Specified	7.2	7.6	248.8	0.00	0.0	0.5	0.0
	CMS	A:1377	0.00	1.08	Non-Specified	5.2	5.6	245.9	0.00	0.0	0.3	0.0
	website	A:1925	0.00	1.03	Non-Specified	7.4	7.6	252.6	0.00	0.0	0.5	0.0
	accounting system	A:1468	0.00	1.08	Non-Specified	5.6	6.0	244.2	0.00	0.0	0.4	0.0
	transaction	A:1847	0.00	1.06	Non-Specified	7.1	7.5	247.1	0.00	0.0	0.4	0.0

Transaction	1500
total Est.lines of code	4500

4545 = 4500  
approximately as  
above

Total Lines of Code:

4545

Estimated	Effort	Sched	PROD	COST	INST	Staff	RISK
Optimistic	23.0	14.8	370.2	0.00	0.0	1.6	
Most Likely	34.3	16.7	248.0	0.00	0.0	2.0	0.0
Pessimistic	51.5	19.0	165.3	0.00	0.0	2.7	

COCOMO II came up with a most likely result of approximately **21 person-months** to complete the project at a cost of approximately \$114,000 for GymSys. Therefore with

five project members, the project duration will be approximately **8** months. Adding hardware and software will bring the total cost to approximately **\$138,000.**

### 2.2.3 Triangulate Process-Based and COCOMO II for Final Estimates

The Process-Based estimate came out to be ~\$108K and the COCOMO-II estimate came out to ~\$114K, with a difference of only \$6000. The estimator will either select one of the two estimates or utilize the average of the two.

## 2.3 Project Resources

resources are all the items that are required to carry out the project activities. they include people, equipment, facilities, time, money, or anything else required for the completion of the project.

### 2.3.1 People

in this subsection, we will mention the people who effect on our system (stockholders):

- ❖ Gym manager: is the person responsible for planning, organizing, monitoring, managing everything related to the work in the gym, he is also working on check reports, in addition study the problems that appear and developing solutions for it, also supervise on the employees, maintain the health and safety of employees and customers in the gym.

- ❖ **Accountant:** The person responsible for recording all the payments and any outstanding balance that was entered during add new member e.g., and calculate the money coming out/in of or to the gym (calculate the value of the club's budget).
- ❖ **customer:** who is registered in a particular club for particular exercises and instructions in a certain period to reach the desired goal.

### 2.3.2 Minimal Hardware Requirements.

The equipment that needs to be managed as part of a project depends on the nature of the project, the minimum total cost for hardware will be approximately \$14700

#### 2.3.2.1 WorkStation Server

- ❖ windows 7
- ❖ windows 8
- ❖ windows 8.1
- ❖ window 10
- ❖ windows 8.1 pro
- ❖ 4 GB RAM
- ❖ 300 MB Hard disk space
- ❖ 2.3GHz processors

### 2.3.3 Minimal Software Requirements

The project will also be leveraging system software development infrastructure; the total cost will be approximately \$9000

#### 2.3.3.1 Development

GymSys is a website. For an optimal user experience, we recommend using an internet browser supported by GymSys.

#### GymSys works on the latest version of all major browsers:

- ❖ Firefox
- ❖ Chrome
- ❖ Microsoft Edge
- ❖ internet Explorer
- ❖ Opera

- ❖ Safari

### 2.3.3.2 Workstation Server

- ❖ server software may be classified into various forms, such as the following:
- ❖ web server software
- ❖ application server software
- ❖ database server software
- ❖ cloud computing server software
- ❖ file server software

## 3. Risk Management

Risk is the scourge of project management as it is the only ‘unplanned’ event we will first, identify, secondly, determine the effect of this uncertainty on the overall project or organizational goals then thirdly, attempt a strategy to minimize the impact. Risk is managed throughout the project life cycle and each risk is placed into the project Risk Register.

### 3.1 Risk Categorization

#### 3.1.1 Description of Risk Categories

- ❖ Performance Risk: is the risk that associated with activities which ensure that goals are consistently being met in an effective and efficient manner.
- ❖ Cost Risk: is the risk that the project costs more than budgeted. it can lead to performance risk if cost increasing lead to reductions in quality, also can

lead to schedule risk if the schedule is extended because not enough funds are available to complete the project on time.

- ❖ **Support Risks:** This risk concerns whether end product will be easy to maintain.
- ❖ **Schedule Risk** This risk concerns whether project schedule will be maintained and deadline met. is the risk that project takes longer than scheduled .it can lead to cost risks and to performance risk if the project is completed too late to perform its intended tasks fully.

## 3.2 Risk Table

in this section, we will explain a list of top 10 risks associated with GymSys. Each risk has been categorized with its probability of occurrence (P) and impact (I) on project and sorted by its risk value ( $RV = P \times I$ ). **Risk matrix** is a matrix that is used during risk assessment to define the various levels of risk as the **product** of the harm probability categories and harm severity the probability of harm occurring might be categorized as 'Certain', 'Likely', 'Possible', 'Unlikely' and 'Rare'.



Risks	Probability of Occurrence	Impact	Risk Value
Team member don't work well together	25%	4	1
Development of extra software engineering that are not requirement	20%	3	.6
Development of the wrong software function requires redesign and implementation	25%	3	.75
Size estimate may be significantly low	60%	2	1.2
Larger numbers number of user than planned	30%	3	.9
Customer will change the requirement	80%	2	1.6
End user resist the system	40%	3	1.2
Delivery deadline will be tightened	50%	2	1
Lack of training on tools	80%	3	2.7
Technology will not meet expectation	30%	1	.3

	Negligible(1)	Marginal(2)	Critical(3)	Catastrophic(4)
Certain	High	High	Extreme	Extreme
Likely	Moderate	High	High	Extreme
Possible	Low	Moderate	High	Extreme
Unlikely	Low	Low	Moderate	Extreme
Rare	Low	Low	Moderate	High

### **3.3 Risk Mitigation, Monitoring, and Management Plan (RMMM)**

From the Risk table above, the project has developed Risk Information Sheets for the risk with a risk value of greater than 1. The other risks were deemed less than the cost of risk mitigation, therefore mitigating the risk is not warranted. Risks with a value of 1 or less will monitored and if their risk value becomes greater than 1, the project will develop a Risk Information Sheet.

#### **3.3.1 Risk Information Sheet for RS1**

because this risk has a value of 1 or bigger than, so we will analyze and try to mitigate and manage this risk

<b>Risk ID: RS1    Date: 11/8/16    Prob: 25%    Impact: Catastrophic    Risk Value: 1</b>
<b>Description:</b> Team member don't work well together into the system is critical to complete the work
<b>Refinement/context</b> Subcondition 1: The purpose is unknown. Subcondition 2: No successful leadership for team Subcondition 3: Inconsistent Membership Subcondition 4: "Too Many Cooks in the Kitchen" That's mean having fewer members on a team is more effective than more
<b>Mitigation/Monitoring</b> 1) it is important to outline key objectives for the team and as well as a method to assess whether these goals are being met. 2) a team without clear leadership often lacks direction. This does not mean the leader(s) are supposed to make all of the decisions for the team. Instead, their role is to act as a facilitator for the team. 3) it should be 100% clear who belongs to the team. Leaders should not randomly invite everyone and their grandmother to the odd meeting for fear of someone "feeling left out". It does not mean that new members cannot join. But generally speaking, the longer members work together, the better they perform together. 4) forming groups should include those that are passionate about and have something to offer towards that team's goals.
<b>Management/Contingency Plan/Trigger</b> Hire someone who has experience and efficiency for appointment as leadership. The risk exposure cost is approximately \$1000 ( $RE=25\%*\$5000$ ). \$5000 is the cost of obtaining the services of leadership for 5 days. Allocate this amount into project contingency cost.

### 3.3.2 Risk Information Sheet for RS2

<b>Risk ID: RS4</b>	<b>Date: 11/8/16</b>	<b>Prob: 60%</b>	<b>Impact: Marginal</b>	<b>Risk Value: 1.2</b>
<b>Description:</b>				
Software sizing is an activity in software engineering that is used to estimate the size of a software application or component in order to be able to implement other software project management activities (such as estimating or tracking).				
<b>Refinement/context</b>				
<p>Subcondition 1: example, a customer's requirements specification or request for proposal, a system specification, a software requirements specification. If you are [re-]estimating a project in later phases of the project's lifecycle, design documents can be used to provide additional detail. Don't let the lack of a formal scope specification stop you from doing an initial project estimate. A verbal description</p> <p>Subcondition 1: With systematic size estimation, the risk of overflows is lower. Systematic software size estimation requires a method that defines a procedure for measurement, involving unit and accuracy</p>				
<b>Mitigation/Monitoring</b>				
<p>1) Keep estimates manageable: Try to keep most estimates, or at least the most important estimates within about one order of magnitude</p> <p>2) Estimate in relative terms rather than absolute terms.</p>				
<b>Management/Contingency Plan/Trigger</b>				
<p>Hire someone who has experience in size estimation for the project. The risk exposure cost is approximately \$2000 (<math>RE=26\%*\\$10000</math>). \$10000 is the cost of obtaining the services of size estimation for 5 days. Allocate this amount into project contingency cost.</p>				

### 3.3.3 Risk Information Sheet for RS3

<b>Risk ID: RS6</b>	<b>Date: 11/8/16</b>	<b>Prob: 80%</b>	<b>Impact: Marginal</b>	<b>Risk Value: 1.6</b>
<b>Description:</b>				
customer will change the requirement: changing a single requirement may introduce a conflict with an existing requirement. In this case, both requirements must be modified so that the new functionality can coexist with the other requirements.				
<b>Refinement/context</b>				
Subcondition 1: the projects cancelled or impaired is incomplete requirements. Subcondition 2: the user do not know what he want Subcondition 3: the requirement not clear				
<b>Mitigation/Monitoring</b>				
1) A successful software project should satisfy all the requirements. The changing requirements should be considered as a chance to improve the quality of the product 2)				
<b>Management/Contingency Plan/Trigger</b>				
Hire someone to identify the requirement and clarify it. The risk exposure cost is approximately \$500 ( $RE=80\%*\$2500$ ). \$2500 is the cost of obtaining the services of identify the requirement for 5 days. Allocate this amount into project contingency cost.				



### 3.3.4 Risk Information Sheet for RS4

<b>Risk ID: RS7</b>	<b>Date: 11/8/16</b>	<b>Prob: 40%</b>	<b>Impact: critical</b>	<b>Risk Value: 1.2</b>
<b>Description:</b>				
User resistance is a common occurrence when new information systems are implemented in a company.				
<b>Refinement/context</b>				
Subcondition 1: poor technical quality which makes the system appear 'unfriendly' Subcondition 2: the lack of interaction between the designers and users				
<b>Mitigation/Monitoring</b>				
1) A successful software project should satisfy all the requirements. 2) The changing requirements should be considered as a chance to improve the quality of the product				
<b>Management/Contingency Plan/Trigger</b>				
Hire expert of interaction with users . The risk exposure cost is approximately \$500 (RE=40%*\$2500). \$2500 is the cost of obtaining the services of interaction with users for 5 days. Allocate this amount into project contingency cost.				

### 3.3.5 Risk Information Sheet for RS5

<b>Risk ID:</b> RS8	<b>Date:</b> 11/8/16	<b>Prob:</b> 50%	<b>Impact:</b> Marginal	<b>Risk Value:</b> 1
<b>Description:</b> delivery deadline is important for Success of the project				
<b>Refinement/context</b>				
Subcondition 1: One of the largest problems with failing software projects is the timing Subcondition 2: The reason they do not set specific dates is because timing a creative project isn't realistic. You can provide a ballpark estimate, but setting a date is setting yourself up for failure				
<b>Mitigation/Monitoring</b>				
1) Remember that deadlines can help you. Deadlines require you to plan your workload, ensuring you get all your tasks done by the requisite date. Regularly working to a deadline will improve your time management and organizational skills. It will also help you to learn to focus, not panic, when working under pressure.				
2) Ensure your deadlines are realistic. There is no point in agreeing to a deadline if you are never going to hit it. While it may be tempting to please a customer by telling them their product will be ready in a couple of days, they won't thank you if you fail to deliver. Be realistic at the outset about the time that the process will take				
<b>Management/Contingency Plan/Trigger</b>				
Hire expert of organizing the time. The risk exposure cost is approximately \$600 (RE=50%*\$3000). \$3000 is the cost of obtaining the services of organizing the time for 5 days. Allocate this amount into project contingency cost.				

### 3.3.6 Risk Information Sheet for RS6

<b>Risk ID: RS9</b>	<b>Date: 11/8/16</b>	<b>Prob: 50%</b>	<b>Impact: Marginal</b>	<b>Risk Value: 1</b>
<b>Description:</b>				
lack of training on tools also one the reasons of failure the project				
<b>Refinement/context</b>				
<p>Subcondition 1: When you are training inexperienced people for new jobs, their training needs are obvious. They need your help to gain the knowledge and skills they must have to do a job.</p> <p>Subcondition 2: 2:Even when you provide people with the basic skills to do a job, they may not thoroughly understand it. They may be unable to retain what you taught them. You must counterbalance this lack of understanding with close supervision</p>				
<b>Mitigation/Monitoring</b>				
<p>1) reassigning the poor performer</p> <p>2)Finding people placed in tasks beyond their current skill development is not uncommon. When asked if they can handle the assignment, many respond positively. They do not want to appear incompetent</p> <p>3) helping the member team to gain the knowledge and skills they must have to do a job.</p>				
<b>Management/Contingency Plan/Trigger</b>				
<p>Hire expert with this project scope. The risk exposure cost is approximately \$1000 (RE=50%*\$1000). \$1000 is the cost of obtaining the services of knowing about the project and no need to training for 5 days. Allocate this amount into project contingency cost.</p>				



## 4. Project Schedule

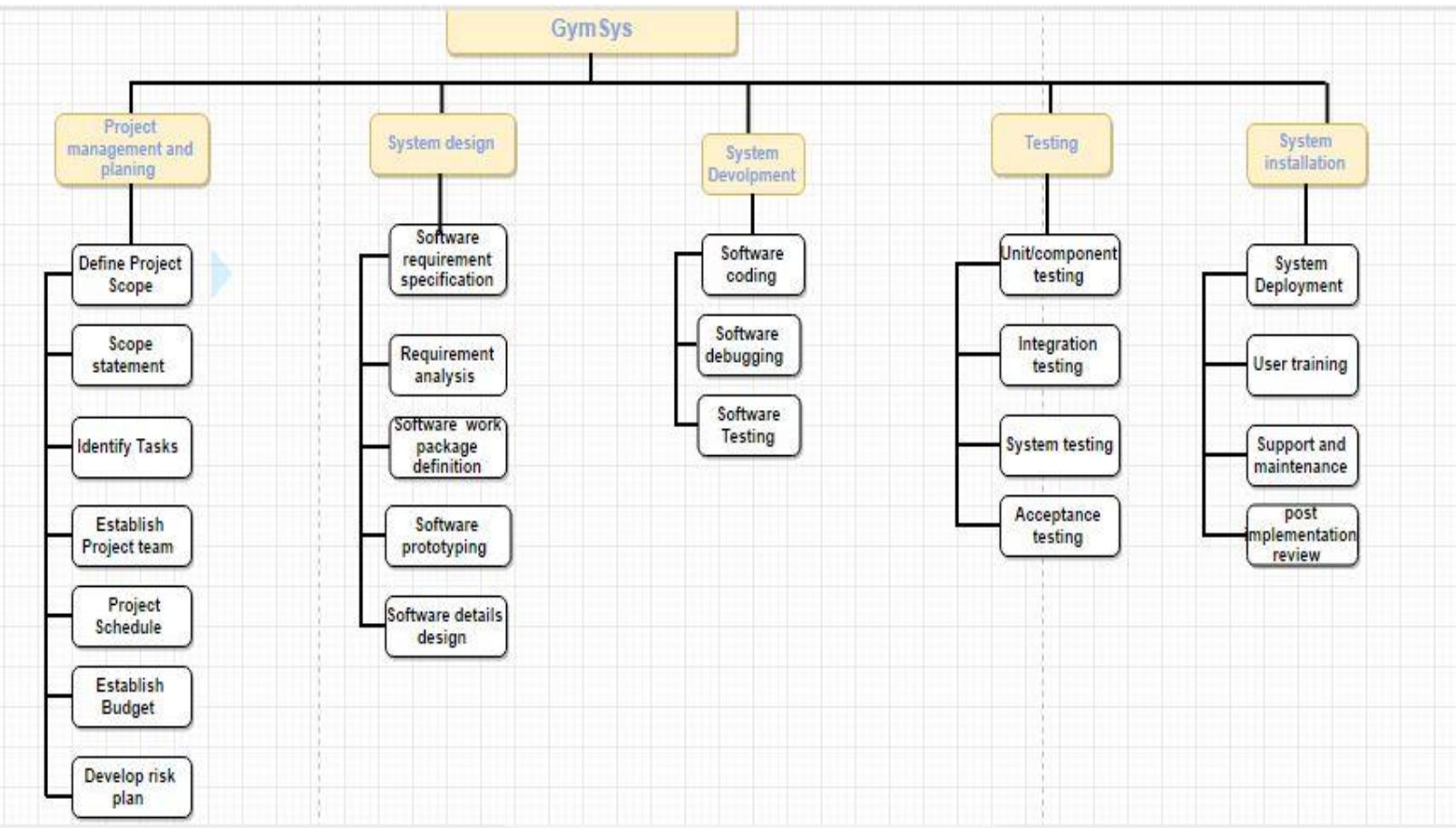
### 4.1 WBS

The project schedule in this section reflect all of the work associated with delivering the project on time. Without a full and complete schedule, the project manager will be unable to communicate the complete effort, in terms of cost and resources, necessary to deliver the project building blocks of a schedule start with a Work Breakdown Structure

WBS approach for describing the hierarchical work is to start at the highest level, with the product of the project, in our WBS we have 5 work packages, Project management and planning, System design, System Development, Testing, System installation.

Each of them consists of separate tasks for example the work package 'System Development' actually consists of three (3) separate tasks ' Software coding', ' Software Debugging', and ' Software Testing '.

There are other approach for describing the hierarchical work is Gantt Chart hey help you assess how long a project should take, determine the resources needed, and plan the order in which you'll complete tasks. They're also helpful for managing the dependencies between tasks.

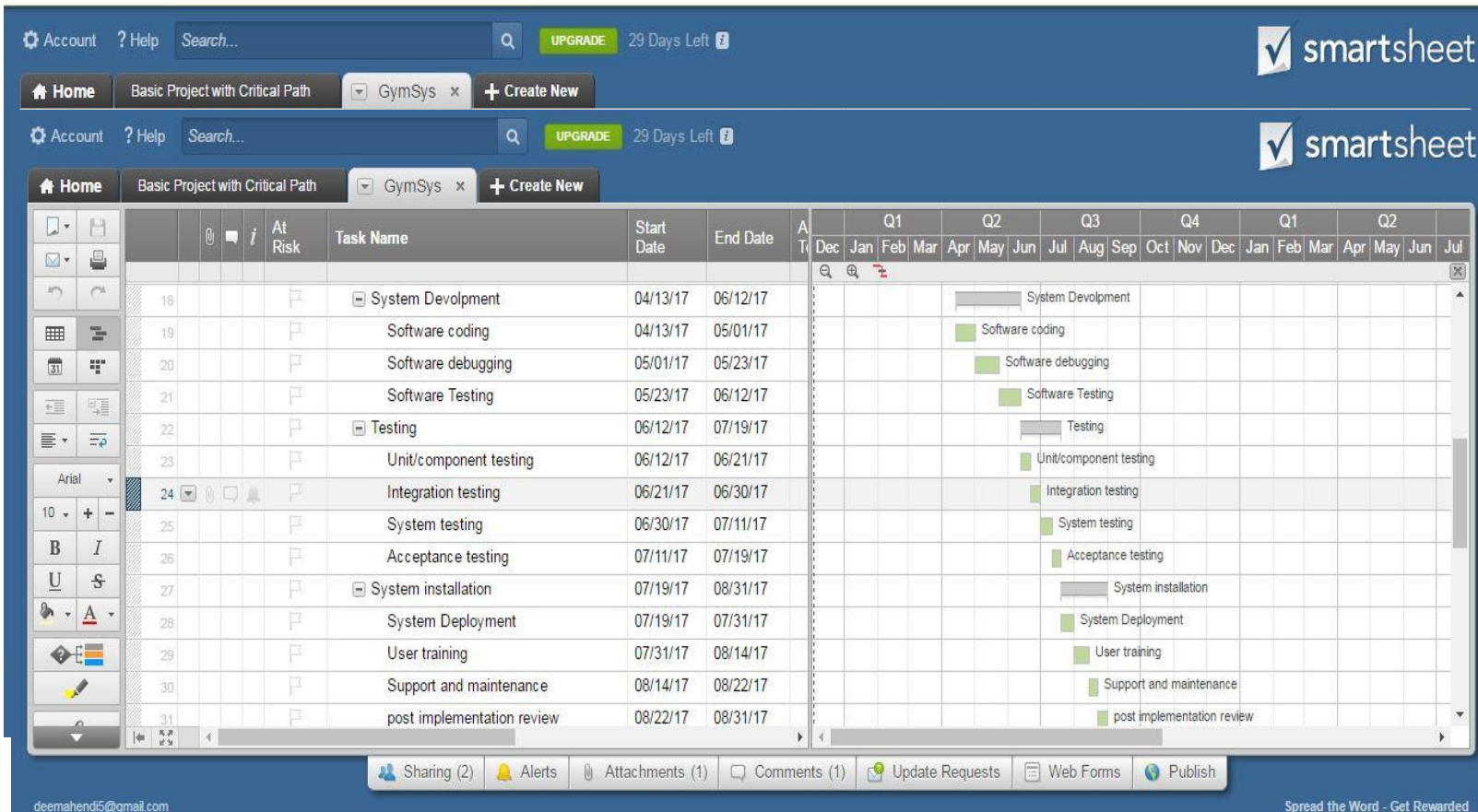


## 4.1 Gantt Chart

A Gantt chart commonly is used in project management, is one of the most popular and useful ways of showing tasks displayed against time. on the left of the chart is a list of the tasks and along the top is a suitable time scale. Each task is represented by a bar, the position and length of the bar reflects the start date, duration and end date of the activity. This allows you to see at an overview:

- ❖ what the various activities are
- ❖ when each activity begins, and ends
- ❖ how long each activity is scheduled to last
- ❖ where activities overlap with other activities, and by how much

- ❖ the start and end date of the whole project.



### 4.3 Critical Path method

a critical path is the sequence of project network activities which add up to the longest overall duration, regardless if that longest duration has float or not. This determines the shortest time possible to complete the project. In our project we gives each activity duration (Weeks) as table below .

Index	Activity Description	Required Predecessor	Duration (weeks)
A	Project Planing	(none)	10
B	System design	A	4
C	System Devolpment	A,B	9
D	Testing	C	5
E	System installation	C,D	4

We started by A (project Planning) it start from nothing so ES for it 0, the duration 10 week so  $0+10 = 10$  this is the EF for the first activity other activities on the same pattern forwarding , back warding the in the opposite direction from the last activity , we but LS,LF according to ES , EF after that we subtract instead of addition the duration .

