**ARBA MINCH UNIVERSITY**

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**Department of Computer Science and Information Technology.**

**“Arba Minch University Gym Management System”**

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**A Senior Project (Proposal)**

Submitted to Department of Computer Science and Information Technology, Faculty of Engineering, AMIT, Arba Minch University, in partial fulfillment for the requirement of the Degree of Bachelor Science in Information Technology.

Arbaminch, Ethiopia.

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**Abstract**  
This proposal project document deals with Arba Minch university gym management system development specifically project proposal system analysis, design, and implementation methodology and partial conclusion and recommendation of AMU gym management system. Our propose system maintain necessary information of the AMU sport academic offices. AMU gym management system mainly provides effective and fast data processing, registration, notification service. Generally, the main goal of AMU gym management system is to shorten data-processing time, to reduce errors, to improve the accuracy of input and to provide data reliability of the information and to change the manual data handling system into automated system.

**Keywords:**gym, sport.

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# 1 Introduction

We all know health is a wealth. We do not need a fancy car, big apartment, a doctor degree without a health. Being healthy is a first thing we need to keep in mind. Because most of time our attitude depends on how we feel. Being healthy and fit gives us energy to do anything. So how do we stay fit? Be active, eat green and hit a gym! Physical fitness is very necessary for a healthy and tension free life. Physical fitness includes diet, exercise and sleep. These three basic things have their own importance in each individual's life and everyone should be sensible with regard to these for a healthy life. The main purpose of the proposed AMU gym management systemis for staff and student not simply to give access to different machines, it’s to increase the likelihood you’ll continue exercise to maintain fitness. Gyms do this through a combination of equipment, education, training and socialization that keep you motivated. And also we are going to automate AMU gym or a fitness center and therefore facilitating its operations of keeping records in secured database,give guidance by video and by text about gym and diet,retiveing,search,update and delete trainer and employee.

# Background information of the Organization

Arba Minch University (AMU) is an academic and research based institution located in Arba Minch Ethiopia about 500 km south of Addis Ababa. The university is one of the well-known higher learning institutions in Ethiopia providing quality services to its customers. Aspiring to be one of the leading higher learning institutions in Ethiopia, AMU developed both in physical infrastructures, human resources and service provisions to the community. The University nowadays is performing expansion and development plan which expects a combined effort of different sectors with in itself. In line with the above facts the university opened six different colleges in different locations at the city of Arba Minch. Among the six college department of computer science and Information technologyis found at Arba Minch Institute of Technology.

## 1.1.1 Vision of AMIT

Arba Minch University aspires to be a leading University in Ethiopia, a center of excellence in the field of water resources in Africa and competitive in the world by 2020.

## 1.1.2 Mission of AMIT

Arba Minch University has a mission of offering relevant and quality education and training; conducting demand driven research and rendering accessible community services.

1.2 Background of the project

We are trying to do the system which can solve all the problems within the current AMU gym work flowwhich held due to the manual system. We collected data in many ways about the existing system, we also used different methodologies to get facts about the system. We will also use different hardware and software tools to develop this proposedproject. We are interest to do this system because of the most common mental benefits of exercise is stress relief. Working up a sweat can help manage physical and mental stress. Exercise also increases concentrations of nor epinephrine, a chemical that can moderate the brain's response to stress and to make the student and the staff workers make free from tension. And also to make the work flow of the AMU gym area computerized. Like register new trainee, update the existingtrainee, delete trainee, register new gym tools ,explain the use of the material and how can use it, give guidance about gym, diet by video ,text andmake the gym environment comfortable.

**1.3 Team Composition**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Project Title** | **Arba Minch University Gym Management System** | | | | |
| **Prepared By** | NO. | Name | ID.NO | Email/Mobile | Responsibility |
| 1 | Amanuelkinde | RAMIT/1638/07 | 0964019527 | Team Manager |
| 2 | Girmasebsibe | RAMIT/1753/07 | 0949240789 | Programmer |
| 3 | DerejeBuruse | RAMIT/1700/07 | 0926655722 | Analysis |
| 4 | BereketMengistu | RAMIT/1665/07 | 0966896108 | Designer |
| 5 | EkramMensur | RAMIT/1709/07 | 0935967618 | Data collector |
|  | 6 | Abezash Amen | RAMIT/1553/06 | 09 | Database analyzer |
| **Date** | **Tuesday, December 5, 2017** | | | | |
| **Advisor** | **Mr. Jay Abaleta** | | | | |
| **Examiner** | **Mr.AbelAdane.** | | | | |

Table 1.1 Team Composition

# 1.4 Statement of the problem.

Currently the AMU gym work flow is done manually in its day to day activities which has many problems. These problems are lists as follows:-

❖Loss of document:-Since registration is handled manually there is chance loss of document.

❖ Lack of security**:**-Since its manual system, the mechanism of data handling is unsecured.

* Difficult to search traineedata.
* Difficult to update traineedata.
* The notification and announcement is based on notices board.
* The manual system takes time.
* The trainee are difficult to give any kind of feedback, comment, suggestion to the receptionist.
* Payment is done manually.
* There is no way practices to exercise if they miss, they wait for second round.
* Thetraineedoesn’t have enough knowledge about what eat before and after the gym exercise.
* Records: - information is done paper based there are a lot of documents in the office it’s hard to manage such huge data manually.
* Data redundancy**:-**Since there is no organized database there is problem duplication of data occur.
* Maintenance request:-difficult to announce maintenance request.
* Difficult to know the schedule.

# 1.5 Objective of the project

In this project we can specify the objective of the project as general objective and specific objective.

## 1.5.1 General objective

The general objective of this project is to develop **web based Gym Management System for Arba Minch University.**

## 1.5.2 Specific objective

The specific objectives of this project are: -

* To create database system for the record management system.
* To secured the system by encryption algorithm.
* To design the system that will solve the current problems and provide reliable functionalities.
* To analysis the manual existing system.
* To notify the gym shift schedule post news and event on the websites.
* To provide better graphical user interface.
* To take attendance of the trainers and trainee.
* To give guidance about eating food types before and after training.
* Torun the system on any windows operating system.
* To develop an accurate and flexible system, it will eliminate data redundancy.
* To advice the trainee about the type of gym training they has work and advantage of that.

**1.6 Feasibility study**

Once the problem is clearly understood, the next step is to conduct feasibility study which is high-level capsule version of the entered systems and design process. The objective is to determine whether or not the proposed system is feasible. The five tests of feasibility have been carried out:-

* Operational feasibility.
* Technical feasibility.
* Economic feasibility.
* Behavioral/political feasibility.
* Schedule feasibility.

**1.6.1 Operational feasibility**

The system which we will develop is also compatible to all operating systems and web browsers. By conducting operational feasibility study we examined whether the new project will attain its desired objective, we also understand the degree to which the proposed system will likely solve the problems, so in this study we identify that operational feasible that the system is user friendly, easy to access. It can be run in any operating system. So our proposed system is operationally feasible.

**1.6.2 Technical feasibility**

Our proposed system was evaluated from the technical point of view. It is planned to implement the proposed project using PHP programming language. It is evident that the necessary hardware and software are available for development and implementation of the proposed project and hopefully we will develop successfully by using our academic knowledge in this case these project is technically feasible.

**1.6.3Economic feasibility**

As part of this, the costs and benefits associated with the proposed project compared and the project is economically feasible only if tangible or intangible benefits outweigh costs. The system development costs will be significant because only one pc enough and also the software are we can get freely, so the proposed project will be economically feasible.

**1.6.4 Political feasibility**

Our system either directly or indirectly it is not related with politics of the country. The main goal of the system is to be cost benefit, get satisfaction from Gym trainee and provided quality service. Our proposed project is totally does not have contact with political view.

**1.6.5. Schedule feasibility**

There might be many constraints that enforce the project schedule to unexpected way. The system development team at the beginning could not foresee any reason as to why a successful system will not be delivered within the time frame that is limited before. However, there were some obstacles. The occurrence of some obstacles was unavoidable but, we undertook them efficiently as they appear. Generally we divided the time according to the below grant chart.

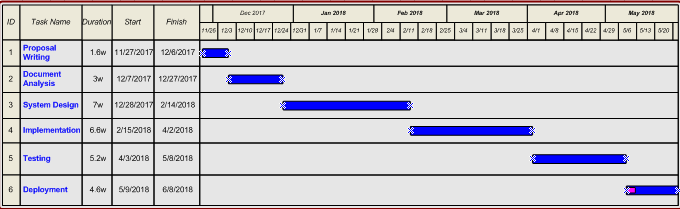
**Task and Schedule.**

Table1.2 Task and schedule.

Cost of the project

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***No.*** | ***Type*** | ***Quantity*** | ***Unit Price(in Birr)*** | ***Total price (in Birr)*** |
| **1** | **Paper** | **1 packet** | **100** | **100** |
| **2** | **Pen** | **5** | **5** | **25** |
| **3** | **Flash** | **1** | **200** | **200** |
| **CD-R** | **2** | **8** | **16** |
| **4** | **Copy** | **100** | **0.5** | **50** |
| **5** | **Desktop computer** | **1** | **6000** | **6000** |
| **Laptop** | **1** | **12500** | **12500** |
| **6** | **Print** | **100** | **1.25** | **125** |
| **Total** | | | | **19016** |

Table 1.3Cost estimation of the project

**Software tools**

|  |  |  |
| --- | --- | --- |
| **No.** | **Type of software** | **Prices(in Birr)** |
| **1** | **Notepad++** | **Free available** |
| **2** | **Dreamweaver** | **Free available** |
| **3** | **Microsoft windows** | **By university** |
| **4** | **MySQL and XAMP** | **Free available** |
| **5** | **Microsoft Visio** | **Free available** |
| **6** | **Microsoft offices** | **By university** |
| **Total** | | **0.00 Birr** |

**Table 1.4 cost of software tools**

# 1.7 Significant of the Project

This proposed document aims to give a brief description about the AMU gym management system. Timeliness, reliable, secured, relevant and valuable data are needed for gym trainee in all dimensions. This proposed project will improve

* Make the work environment favorable.
* Our proposed system will helps thegym master by handling the data organized.
* The system increase document preservation without need of large area.
* Fast accessibility of stored data and saving of resource.

**1.7.1 Scope of the project**

Our proposed system focus on gym management system which only cover in Arba Minch University and will perform the following activities:

* **Registrationtrainer:** the proposed system will register full information of trainer in order to help trainee of that gym.
* **Register trainee:-**the proposed system will register trainer.
* **Register equipment**:-The proposed system will registers all the equipment information.
* **Update trainer and trainee data:** It updates the trainer and trainee information when needed.
* **Search trainee data**: To search trainee data within short period of time.
* **Delete trainer data:-**our proposed system will delete customer data.
* **Notification:**-our proposed system will notify the schedule of the gym.
* **Control payment status**:-our proposed system control the payment status of the trainer.
* **Post Training**:-our proposed system will post training by video and text for member
* **Generate report:**-our system will generate report of the trainer.
* **Give guidance**:-our proposed system give full information about nutrition what to be eat before and after the training.
* The gym receptionist take attendance for trainers.
* The admin Post notification for payment and related works.
* The admin View details of the attendance.
* Maintains request.

1.7.2 Target beneficiaries of the system

After the development of this project the gym office directly beneficial from this system because it can reduce cost, time workload of the employee and increase security.

## 1.9Methodology

## 1.9.1 Data source

In order to gather the relevant data, we use both primary and secondary data sources way of data collection so that it will help us to study the system.

## 1.9.1 Fact finding techniques

* *Primary data collection:*

**1. Observation**: -Observation is common methods of scientific research to collect the data. Enables us to list out the existing system problems and, since it is what we see or observe in reality.

**2**. **Interview**:-Interview is particularly useful for getting the history behind the participant’s experiences. We used interview to get information about the existing system for developing our project. The interview was conducted on the head of gym office.

**3. Document Analysis**:-Document analysis is used to understand how the system is working. We used this method to know all about the offices overall of their work in short and brief.

* *Secondary data collection:*

We will also use different forms and relate documents used by the officesin processing their work flow.

* To develop this project the team member will use an incremental model because the incremental model is a method of software development where the product is designed, implemented and tested **incrementally** (a little more is added each time) until the product is finished. It involves both development and maintenance.

## 1.9.3 System Analysis and Design

In this project the team will use object oriented system development methodology (OOSD) .which mean the iterative methodology and it has two phases.

### 1.9.3.1 Object Oriented Analysis (OOA)

During this phase the team used to model the function of the system (use case modeling), find and identify the business objects, organize the objects and identify the relationship between them and finally model the behavior of the objects.

### 1.9.3.2 Object Oriented Design (OOD)

During this phase the team will reflect the implementation environment, model object interactions and behavior that support the use case scenario and finally update object model to reflect the implementation environment. We used OOSAD because of the following important features: -

***Increase reusability***:-The object oriented provides opportunities for reuse through the concepts of inheritance, polymorphism, encapsulation and modularity.

***Increased extensibility****:*-When we want to add new feature to the system we don’t need to change the entire application class.

***Improved quality****:-*Quality of our system must be on time, on budget and meet the expectation of the users of our system improved quality comes from increasing participation of users in the system development.

***Financial benefits****:*-Reusability, extensibility and improved quality are all the financial benefits, because they led to the business benefits of the object- oriented from the point of view of the users, the real benefits are if we can build system faster and cheaper.

***Reduced maintenance cost****:* Software organizations currently spend significant resources maintain operating system so the object oriented development methods help us to overcome these problems.

### 1.9.3.3 Overview of the project phase

Our system can have the following system development life cycle which helps to develop our system step by step. The diagram below show the software development life cycle and brief description of each phase.

### Figure 1. Software development life cycle

***1. Proposal****-* in this stage the project contains the facts that shows how the existing system works and other information’s such as the background of the organization and the problem of existing system. This stage also shows the needs that the new system wants to solve the problem. The proposal stage is the main stage that contains the plane to complete the project effectively.

***2. Analysis-***in the analysis stage requirements will be determined. This means the new system should do from as many sources as possible (user of the existing system, forms and procedures). In the analysis stage requirements that we determined will be represented diagrammatically in order to make them easier to translate into technical system specification.

***3. Design*-**in this stage that we will make the layout that shows how the new system will do at its implementation stage. These are user interface, sequence diagram, etc.

***4. implementation-*** we will run the new system according to the layout in the design phase and requirements specified in the analysis stage.

**5. Testing:**-this is the last stage we will develop new system that is functional whether it work right or not. We will test our system using two way of testing black box testing and white box testing.

### 1.9.4 Development Tools

For implementation of this system, we follow the common project development Processes Requirement elicitation, Designing, implementation, verification and maintenance. We will use generic designing tools such as Microsoft Visio 2003.The software tools which is freely available We use the following software tools for implementation of the system.

|  |  |
| --- | --- |
| **Activities** | **Tools/programs to be used** |
| Platform | Microsoft windows |
| Editors | Notepad ++,Dreamweaver |
| Browsers | Chrome , Mozilla Firefox |
| Client side coding | HTML/XML |
| Client side scripting | Java scripting |
| Server-side scripting | Php |
| Database server | Mysql |
| Web server | Apache |
| Documentation | Microsoft word |
| Presentation | Microsoft power point |
| Scheduling | Microsoft Visio |

## Table 1.4Development Tools

## 1.9.5 Testing Procedures

The team will perform two types of testing procedures for its functionality and meeting our aim. These techniques are black box testing and white box testing.

#### 1.9.5.1 Black box testing

To test our project, the tester may use black box testing, if he/she has not enough time to check internal modules or codes. By looking only input /output or user interface, the tester can test our systems functionalities without looking the internal code.

#### White box testing

In this type of testing, skilled man in different programming languages tries to test the logic of our project. If the person who tests the system is not skilled, it is difficult to understand our systems functionality. If any failures occur while testing the project in all of the above testing methods, the team will take immediate correction where this fault occurred before jumping to next work. So, that it will meet the goal.

**1.9.7 Limitation of the project**

* Our proposed system is limited only in the process AMU gym management system.
* Our systemneeds network connectivity.
* Our system needs electric power.
* Our system only support English language.
* Our system cannot give online tutorial.

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