

DESIGN OF AN AIR CONDITIONING SYSTEM  
FOR A GYM CENTER

by  
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Project Report

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## INTRODUCTION

In nowadays different forms of heating in Winter, and by opening windows or using fans in Summer, are now capable of almost satisfying human needs for living in comfortable conditions. Air conditioning systems are now increasingly popular, systems that are capable of modifying indoor weather in order to meet efficiently comfort demand.

An air conditioning system produces a duct free flow of air whose temperature and humidity are controlled.

Air conditioning systems are not only necessary for keeping comfortable conditions for human beings but it helps other electronic equipment to operate properly.

A full air conditioning system provides :

1. Controlling of temperature
2. Humidity control
3. Ventilation
4. Air cleaning
5. Air movement

Air conditioning systems can be classified according to the season of the year that are operated :

### Winter air conditioning systems

This type of air conditioning systems operates during winter and provides to the space to be conditioned higher temperature than room temperature, air movement and humidity control. Heat is supplied through ducts by furnaces or boilers fired with gas or oil, or even by electric resistance heaters. Humidity can be controlled by using the simple spray type or by using washers.

### Summer air conditioning systems

This type of air conditioning systems provide cool air in the room to be conditioned. Cooling is done by mechanical refrigeration and dehumidification is accomplished as condensation of water vapour in the air occurs on cold coil surfaces.

### Year round air conditioning systems

This systems are composed of both heating and cooling equipment and produce also the five basic atmospheric  
Another classification that can be done to air conditioning

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