SIMPLE LOW COST AIR CONDITIONER

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Abstract

Heat as always been a problem in every country such as Malaysia. Doing work in a hot summer day can be tiring and are prone to make silly and unwanted mistakes. A proper air conditioner would be good item to have during these times. When doing work or event, the place could become stuffy and uncomfortable for technician or engineer. However, air conditioners are mostly marketed as fix and hard to change places portable air conditioners are dime a dozen but somehow are very expensive to have. In this project, we aim to make a portable air conditioner that is affordable and reliably cool small confined for a limited amount of time and space.

1. INTRODUCTION

Air-conditioning System consists of a group of components or equipment connected in series to control the environmental parameters. An air-conditioning system, by ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) definition is a system that must accomplish four objectives simultaneously. These objectives are to: control air temperature; control air humidity; control air circulation; and control air quality. The cooling is typically done using a simple refrigeration cycle, but sometimes evaporation is used, commonly for comfort cooling in buildings and motor vehicles. In construction, a complete system of heating, ventilation and air conditioning is referred to as "HVAC". Air conditioning is needed in different sections and units for efficiently cool room air during Operating Room ,Delivery Rooms, Treatment Rooms, Patient Care Rooms, Nurseries Intensive Care Units, Diagnostic and related areas, laboratories and Sterile Storage. Air conditionings used in hospital for efficiently remove from the air microorganisms, dust, soot, and other foreign bodies

2. RELATED WORK

Window Air Conditioner This system is technically called a "unitary" air conditioning system and consists of a self contained air conditioning unit that is placed in a window or through a hole in an exterior wall. Since adding holes in your homes outside walls are not a really good idea, these units are almost always placed in a window. The unitary system has all the refrigeration components on one compact box. It ejects heat out one end and blows cooled air out the other end. **Split Air Conditioner** In a split-system, an outdoor metal cabinet contains the condenser and compressor, and an indoor cabinet contains the evaporator. In many split-system air conditioners, this indoor cabinet also contains a furnace or the indoor part of a heat pump. The air conditioner’s evaporator coil is installed in

the cabinet or main supply duct of this furnace or heat pump. If your home already has a furnace but no air conditioner, a split-system is the most economical central air conditioner to install, **Central Air Conditioner -** In a central air conditioner, the evaporator, condenser, and compressor are all located in one cabinet, which usually is placed on a roof or on a concrete slab next to the house's foundation. This type of air conditioner also is used in small commercial buildings.Air supply and return ducts come from indoors through the home's exterior wall or roof to connect with the packaged air conditioner, which is usually located outdoors. Packaged air conditioners often include electric heating coils or a natural gas furnace. This combination of air conditioner and central heater eliminates the need for a separate furnace indoors, **Portable Air Conditioner** This system is another flavor of the unitary air conditioning system. The portable air conditioner consists of a mobile self contained air conditioning unit that is placed on the floor inside a room and discharges exhaust heat using a hose vent through an exterior wall. Portable air conditioning units are a bit noisier than other types of units and can typically cool rooms under 500 Sq.ft. These units are a solution to those stubborn hot rooms that may exist even with central air conditioning.

3. IMPLEMENTATION

Now-a-days we are seeing many air conditioners in our localities like in homes, hospitals ,offices, colleges etc. The cost of the air conditioner is too high, poor people can't buy. So we are taking this as a problem and we have developed an air conditioner with low cost and easy portable.so that poor people can buy the air conditioner with low cost. The main objective of air conditioner is to create a room climate comfortable for humans. Some special type of conditioning system is used to cool the temperature of electric devices. It controls the humidity of a room as 30 to 65% is permitted while the temperature should be between 20 to 26 degrees Celsius, The methodology for simple low cost air conditioner is to reduce the cost of air conditioner for the poor people. So that they can buy the air conditioner with low cost. This project is very useful for poor people with less cost. This air conditioner can be done at your home also. Mainly in summer season we can use this air conditioner using cardboard.An air conditioning system is an electrical device that is purposely installed for the removal

of heat and moisture from the interior of an occupied space. It is a process that is commonly usedto achieve a more comfortable environment, basically for human and other animals.

Air conditioning system is also used to cool and dehumidify rooms that contain heat-producing

electronic devices, such as computer server, power amplifiers. It also used in space that containsdelicate products like artwork.Cooling is generally achieved in the air conditioning system through a refrigeration cycle, butsometimes evaporation or free cooling is employed. The system can also be made based ondesiccants (chemicals that eliminate moisture from the air). Most AC system stores and rejectsheat in pipes called subterranean.

4. EXPERIMENTAL RESULTS

The working of portable air conditioning units is similar to any other air conditioner. The primary function is to pull in the rooms air, condition it to your set temperature by extracting the heat, and releasing the cooled air back to your room. The basic components involved in working a portable air conditioner include: FAN:12v DC Fan and it is used for moving the air around as needed.: DC FEMALE POWER CONNECTOR :It is used to connect the 12v dc adapter to give the power. SWITCH: It is used to ON/OFF the switch. DIGITAL THERMOMETER SENSOR: It is used to sense the temperature of the air conditioner.12V DC ADAPTER: It is used to give the charge to portable air conditioner. The fan pulls in hot, humid air from room into the portable air conditioner. The ice cubes present in the air conditioner will convert the hot, humid air bring down the air temperature to cool the air present in the air conditioner. The cooled air is transferred back indoors. The hot air is converted into cooled air by using fan and ice cubes which is placed in the bottle in the air conditioner

Prototype

5. CONCLUSION

Portable A.C.is generally cheaper to introduce additional energy-saving measures when retrofitting work is already being carried out on a building than at

other times when the hospital is operating normally. Its installation is very easy.we reduced the cost of centralized air conditioning system.

6. REFERENCE

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