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* Assignment 2 *

title:-

personal Information System using constructors, destructor static member function, friend class, this pointer, inline code and dynamic allocation.

problem statement:-

Develop an object oriented program in C++ to create a database of the personal information system containing the following information, DOB, Blood group, Height, weight, insurance policy, number, contact, address, telephone number, driving license no. etc. Construct the database with suitable member function for initializing and destroying the data viz constructor, default constructor, copy, destructor, static, member function, friend class, this pointer, inline code, dynamic memory allocation, process and delete as well as exception handling.

Prerequisites:-

object oriented programming.

Objectives:- To learn the concept of a constructor, default constructor, copy, destructor, static member function, friend class, this pointer, inline code and dynamic memory operator new and delete.

Theory:-

Constructor:- A special method of the class that will be automatically invoked when an instance of the class is created is called as constructor. Following are two the most useful features of constructor.

- ① It is used for initializing the value to the data member of class.
- ② It is that whose name is same as the name of class.
- ③ It gets automatically called when an object of class is created.
- ④ It never have a return type.
- ⑤ It is of
a) Default.
b) parameterized
c) Copy.

Destructor:-

As we know that constructor is that is used for assigning some values to data member and for assigning and some values this may also use some memory so that to free up this memory the destructor is used which gets automatically called at the end of programme.

We have to use ~ tilde symbol for declaring the destructor.

Static Members - A class can contain static member either data or functions.

- A static member variable has following properties:-
- ① It is initialized to zero when the first object of its class is created. No other initialization is permitted.
 - ② Only one copy of that member is created for the entire class and is shared by all the objects of class.
 - ③ It is visible only within the class but its lifetime is the entire program.

- A static member function has following properties:-
- ① A static function can have access to only other static member declared in the same class.
 - ② A static function can be called using the class name instead of its object name.

friend function:-

In principle, private and protected members of a class cannot be accessed from outside the same class in which they are declared. However, this rule does not affect friends. Friends are functions or classes declared as such and we do it by declaring a prototype of this external function within the class and preceding it with the keyword friend.

friend classes:-

Just as we have the possibility to define a friend function, we can also define a class as friend of another one, granting that second class access to the protected and private member

first one.

pointers:- A pointer is a derived data type that refers to another data variable by storing the variable memory address rather than data.

syntax:- Data type * ptr_var;

eg:- int * ptr;

this pointer:-

C++ uses a unique keyword called this to represent an object that invokes a member function. This is a pointer that points to the object for which this function is called. This unique pointer is automatically passed to a member function when it is called.

facilities:- linear operating system, C++

Algorithm:-

step 1 - start

Step 2: Read the personal information

Step 3: print all information from database

step 4: stop.

* Conclusion:- Hence we have successfully studied Concept of constructor default Constructor, copy constructor, destructor, static member function, friend class, this pointer, inline code and dynamic memory allocation, Operator new, delete.