

Assignment - 2

Name: Tanmay Karmarkar

Batch: F1

Roll No: 21143

Performance Date: 6/10/21

Submission Date: 6/10/21

Personal information system using constructor, destructor, static member functions, friend class, this pointer, inline code & dynamic memory allocation.

Learning Objectives:

To learn concept of constructor, default constructor, copy constructor, destructor, static member functions, friend class, this pointer, exception handling.

S/IW & H/W Requirements:

VS CODE, mingw compiler, 64 Bit Windows 10 OS.

Theory:

- **Static member function:** By declaring a function members as static you make it independent of any particular object of the class exists & are accessed by class name & (:) operator.
- **Friend class:** A friend class can access the private & protected members of a class.
- **This pointer:** Every object in C++ has access to its own address through 'this' pointer. It is an implicit parameter to all member functions.

Inline Code: C++ provides an inline function to reduce the function call overhead. It is a function that is expanded inline when called. The control of the program is not transferred.

Dynamic memory allocation: It refers to performing memory allocation manually by programmer. It is allocated on heap.

New operator: The new operator requests for the memory allocation in heap. If sufficient memory is available, it initializes the memory to the point variable & returns its address.

Delete operator: The delete operator is used to deallocate the memory. User has privilege to deallocate the created point etc.

Algorithm :

1. Create a class
2. Define default constructor, copy constructor, destructor.
3. Define friend class.
4. Use this pointer, inline code & dynamic memory allocation.
5. Read personal info such as name, year, mobile no, roll no, address, DOB, BG, licence number.
6. Define update function to update info.
7. Define display function for display.
8. Enter choice for required operation to be performed.
9. Perform the operation.

Test Case

Description	Input	Exp O/P	Actual O/P	Result
1. Taking full name as input	Tanmay Karmarkar	-	-	Pass
2. Roll no input	43	-	-	Pass
3. Roll no input	a	Invalid	Invalid	Pass
4. ph. no input	1234	Number must be 10 digit	Number must be 10 digit	Pass
5. Blood grp input	S+	Invalid BG	Invalid BG	Pass
6. Wrong input	g	Invalid choice	Invalid choice	Pass
7. Ph. no inp	abc	Must be integer	Must be integer	Pass
8. DOB	22/12/2002/06	invalid format	invalid format	Pass
9. Division Input	A1	\$ -	-	Pass

Conclusion:

Learned concept of static member function, friend class, this pointer, inline code, dynamic memory allocation, new & delete operations.