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Course Title: Object Oriented Programming using C++

inline Function

➢ One of the major objectives of using functions in a program is to save memory space, which becomes appreciable when a function is likely to be called many times.

➢ However, every time a function is called, it takes a lot of extra time in executing tasks such as jumping to the calling function.

➢ When a function is small, a substantial percentage of execution time may be spent in such overheads and sometimes maybe the time taken for jumping to the calling function will be greater than the time taken to execute that function.

➢ One solution to this problem is to use macro definitions, commonly known as macros.

➢ Preprocessor macros are popular in C, but the major drawback with macros is that they are not really functions and therefore, the usual error checking process does not occur during compilation.

➢ C++ has a different solution to this problem.

➢ To eliminate the time of calls to small functions, C++ proposes a new function called **inline function**.

➢ An inline function is a function that is expanded in line when it is invoked thus saving time.

➢ The compiler replaces the function call with the corresponding function code that reduces the overhead of function calls.

➢ We should note that inlining is only a **request to the compiler, not a command.**

➢ The compiler can ignore and skip the request

When to use Inline function?

We can use Inline function as per our needs. Some useful recommendation are mentioned below-

➢ We can use the inline function when performance is needed.

➢ We can use the inline function over macros.

➢ We prefer to use the inline keyword outside the class with the function definition to hide implementation details of the function.

Program: C++ program to perform arithmetic operations using inline function.

```
void main()
{
    int a,b, res=0;
    cout<<"\n Enter two numbers:";
    cin>>a>>b;
    res=add(a,b);
    cout<<"\n Addition= " <<res;
     res=sub(a,b);
     cout<<"\n Subtraction ="<<res;
     res=mul(a,b);
     cout<<"\n Multiplication ="<<res;
     res=div(a,b);
     cout<<"\n Division="<<res;
     getch();
}
```

```
inline int add(int  a,int  b)
{
    return(a+b);
}

inline int sub(int  a,int  b)
{
    return(a-b);
}

inline int mul(int  a,int  b)
{
    return(a*b);
}

inline int div(int  a,int  b)
{
    return(a/b);
}
```

- Assignments on inline function

1. Write a C++ program to find square and cube value of a number using inline function

2. Write a C++ program to deposit and withdraw the amount in and from balance and display using inline function.

3. Write a C++ program to find largest number among two umbers using inline function.

THANK YOU...