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**ASSIGNMENT NO: 4**

**PROBLEM STATEMENT:**

Write a function template and class template selection sort. Write a program that inputs, sorts and outputs an integer array and a float array.

**AIM OF ASSIGNMENT:**

C++ Program to implement and understand the concepts of Class Template and Function Template. Using these, sorting the array of integer and float elements by selection sort.

**DESCRIPTION:**

In this program, we have created a class template to declare two variables in private access specifier and three functions in public access specifier. We have created a function template and defined the three functions. Using the template facility, the user can input array elements of integer or float type. The input elements will then be sorted using the selection sort and displayed accordingly. To access the class template variables, there are two objects created (one for integer, the other for float).

**ALGORITHM**:

Step1: Start

Step2: Create a template.

Step3: Get an array from the user.

Step4: The array can be either a float or int array.

Step5: Sort the array, using selection sort.

Step6: Print the sorted array.

Step7: End.

**OOP CONCEPT USED:**

* Template Class : Function templates are special functions that can operate with generic types. This allows us to create a function template whose functionality can be adapted to more than one type or class without repeating the entire code for each type.  
    
  In C++ this can be achieved using template parameters. A template parameter is a special kind of parameter that can be used to pass a type as argument: just like regular function parameters can be used to pass values to a function, template parameters allow to pass also types to a function. These function templates can use these parameters as if they were any other regular type.  
  The format for declaring function templates with type parameters is:

template <class identifier> function\_declaration;⁷  
template <typename identifier> function\_declaration;

* Template Function
* do while loop
* Menu driven statements

**CONCLUSION:**

Hence, we learnt the concept of class template and function template. We also learnt the selection sort technique.