





▼ fourth Session

fourth Session (Advanced programming (Monday 16:30 (classes (Home



Vector class simulation

In this question, we are going to simulate the vector class.

We know that vector is actually a type of linear data structure that is presented in the c++ language in the form of a library with the same name and supports all types of basic data.

Now, according to the concept of template class, we want to design the vector class in such a way that it supports all the main data types.

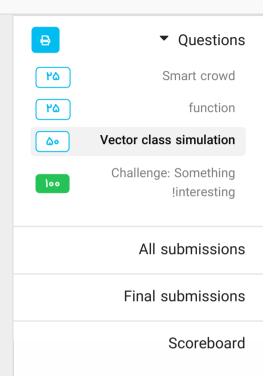
The class designed by you can use the array as a data member to support a linear data structure.

And this class must have the ability to copy (i.e. the full implementation of the copy constructor) so that it works correctly by placing the objects of this class equally in different conditions of the class and the existing capacity and elements are updated.

On the other hand, you must implement the following functions as function members:

void push_back(T data);

• The task of this data is to add data to the end of the vector.



```
void push_front(T data);
```

• The task of this function is to add data to the beginning of the vector.

```
void insert(int index, T data);
```

• This function adds the data element at the specified location (index).

```
void pop();
```

• This function deletes the last element in the vector if it exists.

```
void delete(int index);
```

• The task of this function is to remove the element from the given location (index).

```
int search(T data);
```

• The purpose of this function is to search for the data value in the vector and return the index of the first item found. (If the desired element is not found, the value -1 will be returned.)

```
int size();
```

• The task of this function is to return the vector size.

Note: Write a suitable user interface for your code.

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.The training period is over

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