Exercise 9

1. Max

- Implement function `Max`

- Main code is implemented as below

- You should submit your `Max` function with the main code below

- `Max` function gets 2 input with same type : int, float, char, char*

- `Max` function returns the value bigger than the other

Main code

```cpp
int main() {
cout << Max(20, 50) << endl;
cout << Max('A', 'Z') << endl;
cout << Max(2.2, 9.9) << endl;
cout << Max(string("Programming"), string("Computer")) << endl;
string str1 = "computer";
string str2 = "programming";
cout << Max(str1, str2) << endl;
return 0;
}
```

Output

```
50
Z
9.9
Programming
programming
```

2.DB

- Implement class for simple database

```
Database<T> data;
```

- You can use `vector` to contain data

- Your database can insert, select, delete data

- The output order in `select` is the same as the input order

```cpp
void insert_data(T input) {
}

// (*checker) is function pointer. You can use it same as normal function inside the implementation of select
void select_data(bool (*checker)(const T)) {
//If the checker is null, print every element inside the database


//T input;
//boolean cmp = checker(input);
}

// (*checker) is function pointer. You can use it same as normal function inside the implementation of delete
void delete_data(bool (*checker)(const T)) {

//If the checker is null, delete every element inside the database
//T input;
//boolean cmp = checker(input);
}
```

- Main code is implemented as below

- You have to implement class Database with template

Main code

```cpp
bool checker_function_1(const int x) {
  return x > 10;
}

bool checker_function_2(const int x) {
  return x < 5;
}

int main() {
  const string menu = "1. insert\n2. select\n3. delete\n4. Quit\nChoose action : ";
  const string checker_menu = "1. All\n2. function1(select/delete bigger than 10)\n"
    "3. function2(select/delete smaller than 5)\nChoose checker function : ";

  Database<int> data_int;
  int input_int;
  int argument_int;

  while (true) {
    cout << menu;

    cin >> input_int;

    switch (input_int) {
    case 1:
      cout << "Enter the value : ";
      cin >> argument_int;

      data_int.insert_data(argument_int);
      break;

    case 2:
      cout << checker_menu;
      cin >> input_int;

      if (input_int == 1) {
        data_int.select_data(nullptr);
      }
      else if (input_int == 2) {
        data_int.select_data(checker_function_1);
      }
      else if (input_int == 3) {
        data_int.select_data(checker_function_2);
      }
      break;

    case 3:
      cout << checker_menu;
      cin >> input_int;

      if (input_int == 1) {
        data_int.delete_data(nullptr);
      }
      else if (input_int == 2) {
        data_int.delete_data(checker_function_1);
      }
      else if (input_int == 3) {
        data_int.delete_data(checker_function_2);
      }
      break;

    case 4:
      return 0;
    }
  }
}
```

Input

```
1 5
1 4
1 3
1 2
1 1
2 1
2 2
2 3
3 3
2 1
3 1
2 1
4
```

Output(ignoring printed strings)

```
5
4
3
2
1
4
3
2
1
5
```