Assaignment-5

Question 1

Write the function for insertion sort.

```
void insertionSort(int arr[], int n)
{
int i, key, j;
for (i = 1; i < n; i++)
{
key = arr[i];
j = i - 1;
while (j >= 0 && arr[j] > key)
{
arr[j + 1] = arr[j];
j = j - 1;
}
arr[j + 1] = key;
}
}
```

Question 2

Write a function to find the maximum element in the stack.

```
std::stack<int> input;
int maxVal = maxFromStack(input);
int maxFromStack( const std::stack<int> &input )
{
std::stack<int> temp = input;
int maxVal = temp.top();
while( !temp.empty() )
{
temp.pop()
if(temp.top() > max)
max = temp.top();
}
return maxVal;
}
```

Question 3

Write a function to find the minimum element in the stack.

```
struct StackGetMin {
void push(int x) {
elements.push(x);
if (minStack.empty() || x <= minStack.top())
minStack.push(x);
}
bool pop() {
if (elements.empty()) return false;
if (elements.top() == minStack.top())
minStack.pop();
elements.pop();
return true;
}
bool getMin(int &min) {
if (minStack.empty()) {
return false;
} else {
min = minStack.top();
return true;
}
}
stack<int> elements;
stack<int> minStack;
};
```