

GTU CSE 241 / 501 Quiz

Std Code: 224

Std Number:

2	1	0	1	0	4	0	0	4	0	3	9			
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```
template <class T>
class GTUSet {
    public:
        template<class T> // It works without this template line aswell
        GTUSet() {
            std::vector<T> emptySet;
            setElems = emptySet;
        }

        template<class T>
        void add (T data) {
            if (isIn(data))
            {
                throw std::invalid_argument;
            }
            else {
                setElems.push_back(data);
            }
        }

        template<class T>
        bool isIn(T data) const {
            for (const T& tmp: setElems) {
                if (tmp == data)
                    return true;
            }
            return false;
        }

    private:
        std::vector<T> setElems;
};
```

```

int main() {
    GTUSet<int> objInt;
    try{
        for (int i = 0; i < 8; ++i)
            objInt.add(i%2); //exception will be thrown
    }
    catch (const std::invalid_argument& e) {
        std::cout << e.what() << std::endl;
    }
    GTUSet<char> objChar;
    try {
        for (char = 'a' ; ch <= 'z'; ++ ch)
            if (isIn(ch) == false) //exc. wont throw
                objChar.add(ch);
    }
    catch (const std::invalid_argument& e) {
        std::cout << e.what() << std::endl;
    }
    return (0);
}

```