**Assignment 3**

**C# Threading**

**Report**

**Introduction**

Our task was to build an ATM constructed out of Windows forms built in Visual C#, but crucially this would demonstrate an interesting and potentially very dangerous computing concept known as a data race, whereby two concurrent programs or processes in a computer try to change the same data value at the same time. In the context of an Automated Teller Machine, i.e. two ATM machines making a cash withdrawal from the same account at the same time, this would result in the balance on the account after the withdrawal to be incorrect, possibly to a very great extent, which would have catastrophic consequences for the bank and economy. Thankfully, software nowadays, including ATMs, is restricted in the sense that critical code can only be accessed by one process, or thread, at the same time. The software we have written demonstrates both scenarios and uses threads to create different concurrent ATMs that both access the same account at the same time.

**Design**