



Appendix

Below is the generated **Source Code** that was derived from our **Business Rule Model** by Enterprise Architect. The Business Rules in natural language are generated as comments. This makes the code easy to read and helps to identify which code segments correspond to a given rule.

```
////////////////////////////////////
// RentalSystem.cs
// Implementation of the Class RentalSystem
// Generated by Enterprise Architect
// Created on:      29-Nov-2010 4:05:40 PM
////////////////////////////////////

public class RentalSystem {

    public Customer m_Customer;
    public Car m_Car;
    public Rent m_Rent;

    public RentalSystem(){

    }

    ~RentalSystem(){

    }
    public virtual void Dispose(){
    }

    /* Begin - EA generated code for Activities and Interactions */

    public bool ProcessApplication(Rent m_rent,Application m_application)
    {
        // behavior is a Activity

        //CAR MUST NOT BE RENTED TO CUSTOMERS WITHOUT A VALID LICENSE
        //NUMBER
        if (m_Customer.ValidLicenseNumber == "FALSE")
        {
            m_application.Status = "Reject";
            m_Customer.Eligibile = false;
        }

        //CAR MUST NOT BE RENTED TO CUSTOMERS OF AGE LESS THAN 18
        else if (m_Customer.Age < 18)
        {
            m_application.Status = "Reject";
            m_Customer.Eligibile = false;
        }

        //CAR MUST NOT BE RENTED TO CUSTOMERS WITH BAD HISTORY LEVEL 3
        else if (m_Customer.BadHistoryLevel == 3)
        {
            m_application.Status = "Reject";
            m_Customer.Eligibile = false;
        }

        if (Customer.Eligibile == true)
        {
            //RENT FOR SMALL CARS IS 80 AUD PER DAY
        }
    }
}
```



```
        if (m_Car.Type == Small)
        {
            m_rent.RentPerDay = 80;
        }

        //RENT FOR AWD CARS IS 100 AUD PER DAY
        else if (m_Car.Type == AWD)
        {
            m_rent.RentPerDay = 100;
        }

        //RENT FOR LUXURY CARS IS 150 AUD PER DAY
        else if (m_Car.Type == Luxury)
        {
            m_rent.RentPerDay = 150;
        }

        //RENT PAYABLE IS CALCULATED AS THE PRODUCT OF RENTPERDAY AND
        //RENTALPERIOD IN DAYS
        m_rent.RentPayable = m_rent.RentPerDay * m_rent.No_of_rent_days;

        if (CustomerBadHistoryLevel > 0)
        {

            //PENALTY OF 20 % OF RENT MUST BE APPLIED FOR CUSTOMERS WITH
            //BAD HISTORY LEVEL 2
            if (m_Customer.BadHistoryLevel == 2)
            {
                m_rent.PenaltyFee = m_rent.RentPayable * 0.2;
            }

            //PENALTY OF 10 % OF RENT MUST BE APPLIED FOR CUSTOMERS WITH
            //BAD HISTORY LEVEL 1
            else if (m_Customer.BadHistoryLevel == 1)
            {
                m_rent.PenaltyFee = m_rent.RentPayable * 0.1;
            }

        }
        else
        {
        }

        //TOTAL AMOUNT PAYABLE IS CALCULATED AS THE SUM OF RENT
        //PAYABLE AND PENALTY IF ANY.
        m_rent.TotalAmountPayable = m_rent.RentPerDay + m_rent.PenaltyFee;
    }
    else
    {
    }

    return m_application.Status;
}

/* End - EA generated code for Activities and Interactions */
} //end RentalSystem
```