

CS 586 - Project

Deliverable #1

MDA-EFSM model for GasPump components

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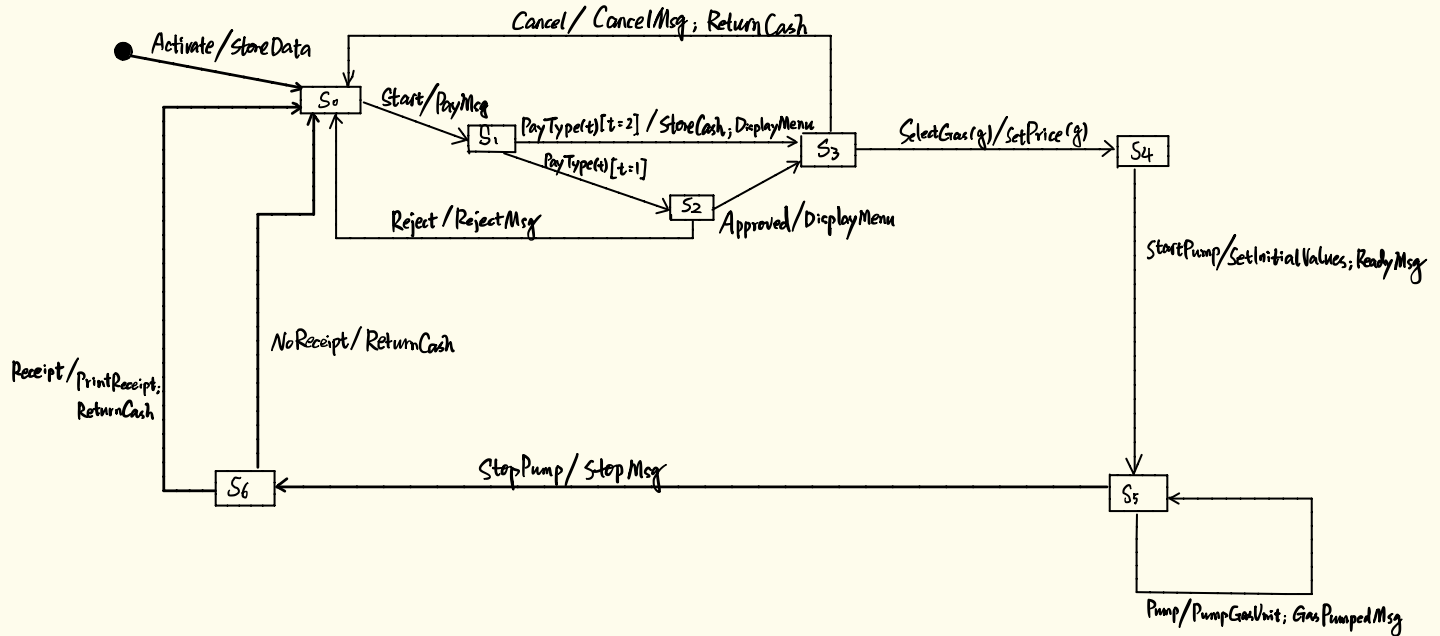
MDA-EFSM Events:

Activate()
Start()
PayType(int t) //credit: t=1; cash: t=2
Reject()
Cancel()
Approved()
StartPump()
Pump()
StopPump()
SelectGas(int g)
Receipt()
NoReceipt()

MDA-EFSM Actions:

StoreData // stores price(s) for the gas from the temporary data store
PayMsg // displays a type of payment method
StoreCash // stores cash from the temporary data store
DisplayMenu // display a menu with a list of selections
RejectMsg // displays credit card not approved message
SetPrice(int g) // set the price for the gas identified by g identifier
ReadyMsg // displays the ready for pumping message
SetInitialValues // set G (or L) and total to 0
PumpGasUnit // disposes unit of gas and counts # of units disposed
GasPumpedMsg // displays the amount of disposed gas
StopMsg // stop pump message and receipt
PrintReceipt // print a receipt
CancelMsg // displays a cancellation message
ReturnCash // returns the remaining cash

State Diagram of MDA-EFSM:



Pseudo-code for GasPump-1

m is a pointer to the MDA_EFSM object

d is a pointer to the Date Store object

```
activate(float a, float b){  
    if( (a>0) &&(b>0) ){  
        d->temp_a = a;  
        d->temp_b = b;  
        m->Activate();  
    }  
}
```

```
start(){  
    m->Start();  
}
```

```
payCredit(){  
    m->PayType(1);  
}
```

```
Approved(){  
    m->Approved();  
}
```

```
Reject(){  
    m->Reject();  
}
```

```
Cancel(){  
    m->Cancel();  
}
```

```
Regular(){  
    m->SelectGas(1);  
}
```

```
Super(){  
    m->SelectGas(2);  
}
```

```
StartPump(){  
    m->StartPump();  
}
```

```

PumpGallon(){
    m->Pump();
}
stopPump(){
    m->StopPump();
    m->Receipt();
}

```

Pseudo-code for GasPump-2

m is a pointer to the MDA_EFSM object

d is a pointer to the Data Store object

cash, price, L are in the data store

cash contains the value of cash deposited

price contains the price of the selected gas

L contains the number of liters already

```

activate(int a, int b, int c){
    if( (a>0) &&(b>0)&&(c>0) ){
        d->temp_a = a;
        d->temp_b = b;
        d->temp_c = c;
        m->activate();
    }
}

```

```

start(){
    m->start();
}

```

```

payCash( float c){
    if( c > 0 ){
        d->temp_cash = c;
        m->PayType(2);
    }
}

```

```

Cancel(){
    m->Cancel();
}

```

```
Regular(){
    m->SelectGas(1);
}

Super(){
    m->SelectGas(2);
}

Premium(){
    m->SelectGas(3);
}

StartPump(){
    m->StartPump();
}

PumpLiter(){
    if ( d->cash < ( d->L +1)* d->price ){
        m->StopPump();
    } else{
        m->Pump();
    }
}

stop(){
    m->StopPump();
}

Receipt(){
    m->Receipt();
}

NoReceipt(){
    m->Receipt();
}
```