

# Mobile Banking with PayPal

- Author: Ndlamlenze NS, Mr
- Supervisor: Professor Isabella M Venter

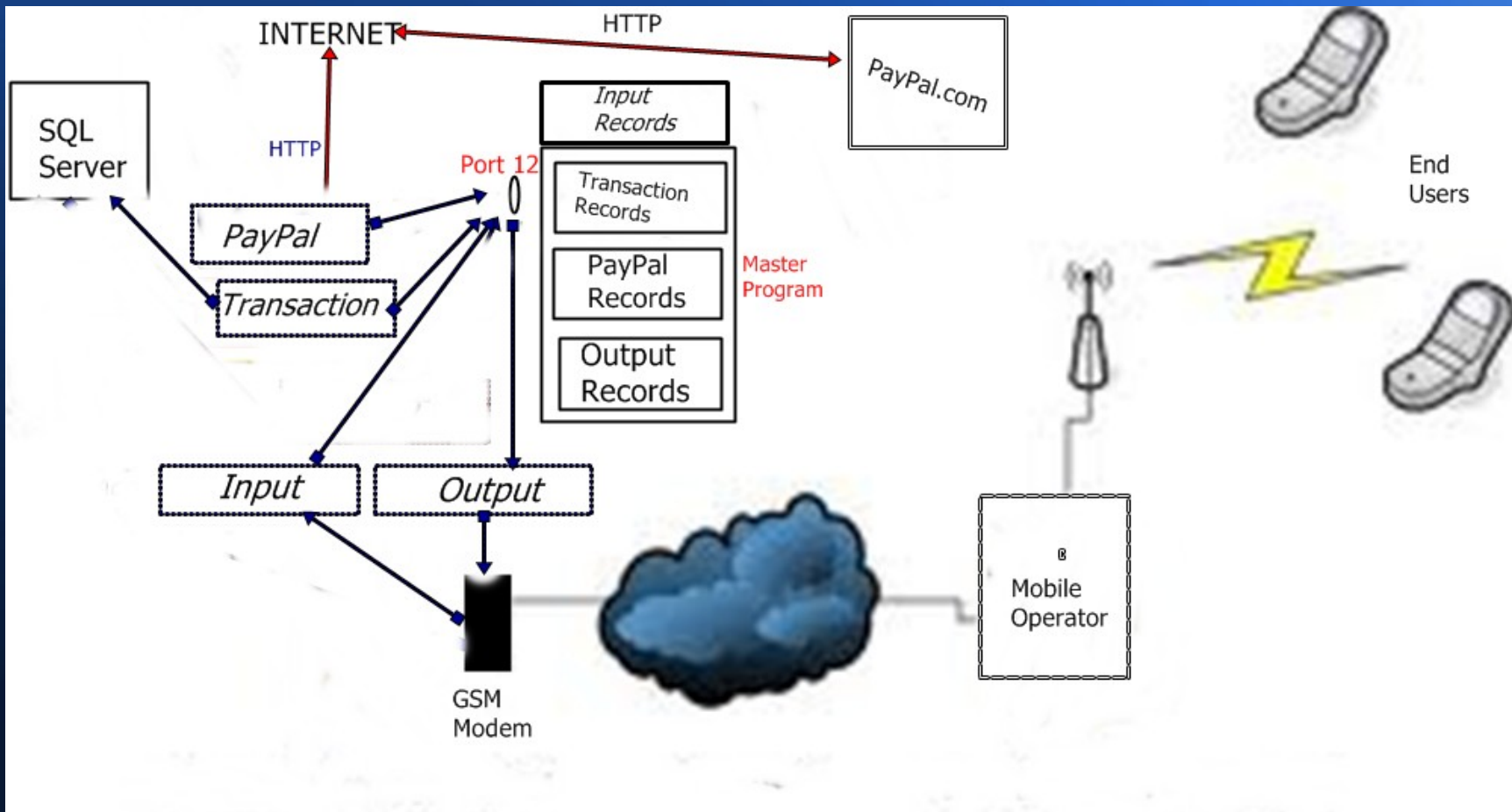
# Contents

- Background
- System
- Processing Data
- Server Inputs
- Transaction Commands
- Output Command
- Paypal Command
- Challenges
- Demo

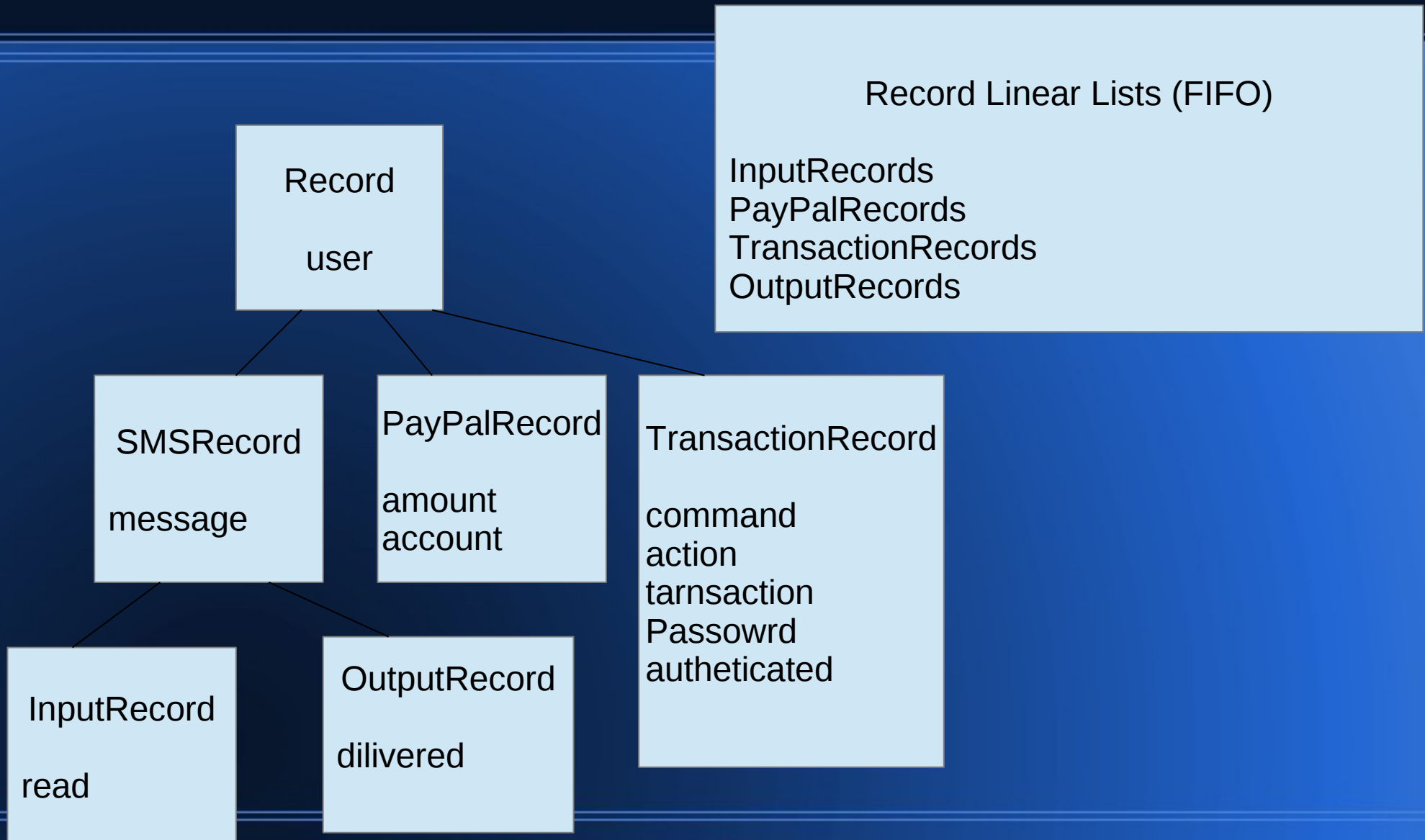
# Background

- **The system will allow the mobile phone users, without any bank accounts, to pay a third party by means of short message service (SMS).**

# System



# Processing Data



# Server Inputs

## ***Request Command***

*paypal*

*output*

*transaction*

*input(sms data)*

## ***Client Program***

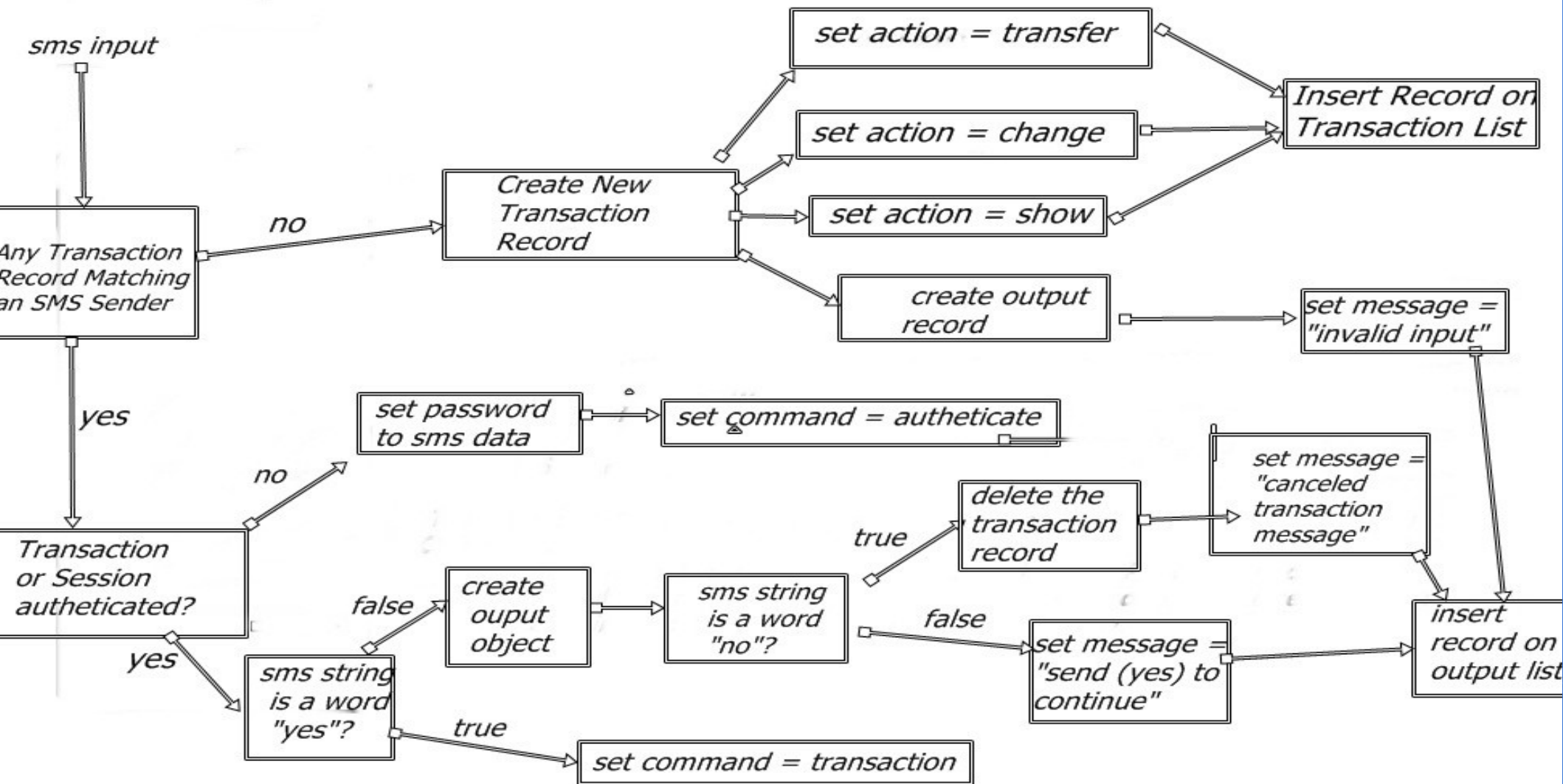
*PayPal.php*

*Output.php*

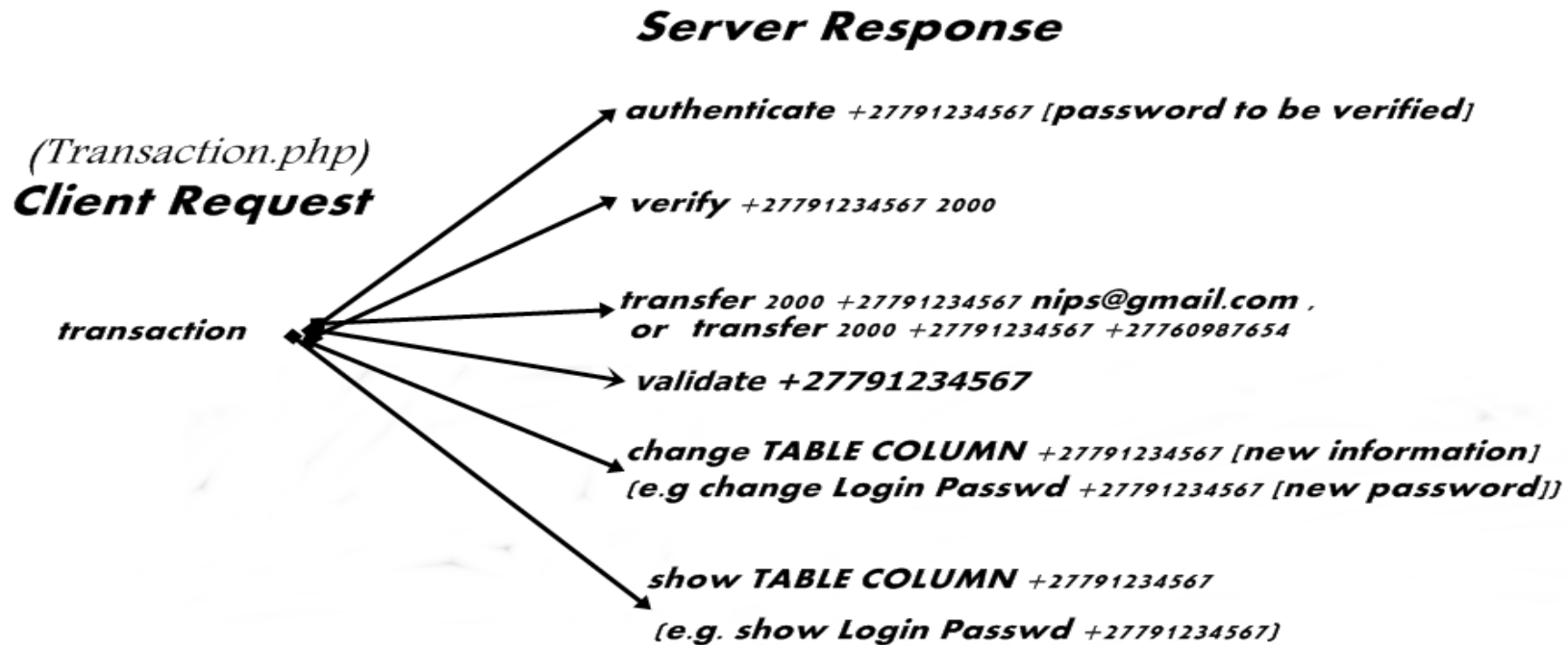
*Transactionin.php*

*Input.php*

# New SMS Input



# Transactions Commands





# Output Command

<i>command</i>	<i>Action</i>
<b>output</b>	<p><b>Sent by an L3 client socket program, Output.php to the Master server port no.12</b></p> <p><b>Master</b></p> <p><b>s Return a string null through the socket when the OutputRecord FIFO list is empty.</b> <b>Or else,</b> <b># Create a string line using the values from the variables mobile number and message, from the top node of the list.</b> <b># Pass the string through the client socket and then delete top node from the list.</b></p> <p><b>Slave</b></p> <p><b>s The client program will terminate if the the returned string is null.</b> <b>Otherwise,</b> <b># Construct an sms message to foward to the specified mobile number</b></p>

# PayPal Command

<i>command</i>	<i>Action</i>
<b>paypal</b>	<p><b>Sent by an L3 client program, PayPal.php, to the Master server port no.12</b></p> <p><b>Master</b></p> <p><b>s Get the top record node from PayPal records list. Return null through the socket when the PayPalRecord is empty Or else,</b></p> <ul style="list-style-type: none"><li><b># Create a string line using the values from the variables mobile number, amount and the third party's account, from the top node of the list.</b></li><li><b># Pass the string through the client socket and then delete the top record.</b></li></ul> <p><b>Slave</b></p> <p><b>s The client program will terminate if the the returned string is null. Otherwise,</b></p> <ul style="list-style-type: none"><li><b># Construct a form to post through NVP API to paypal.com.</b></li><li><b># That will transfer the specified amount from a shared PayPal account to a third party's account on paypal.com.</b></li></ul>

# Main Program

- Start the Server program : `java -jar system.tar`
- Repeat forever:
  - execute `Input.php`
  - execute `Transaction.php`
  - execute `PayPal.php`
  - execute `Output.php`

# Challenges

- The Bluetooth Stack installation under the Linux environment is complex and time consuming as a result, we chose to use the USB cable to connect the modem to the Server.
- The shortage of SMS bundles to test the SMS input /output, through the GSM Modem, made it hard to finish the system's I/O programs on time.

# Demo

- Demonstration of the transactions for an entire session:
  - Paying a third party
  - Requesting an account balance