Online Store and Warehouse

**Overview**:

Represents the SQL database of a online store and it’s warehouse. The program will create bots to represent buyers and warehouse workers. The intention of this program is show how to create database

Program also has historical data. Company has merged with garden supply shops, book stores, sporting goods store and a retail finance company. The historical data from these stores is cleaned transferred and stored in a data warehouse.

#!/usr/bin/python

import time; # This is required to include time module.

from datetime import datetime

# The number of seconds since 1-1-1970 12am to current time.

ticks = time.time()

ticks = ticks + 10000

a\_timeAsString = time.ctime(ticks)

print(ticks)

print (datetime.fromtimestamp(ticks))

**Company Parts**

Online Store

customers can make purchases from online store. Sporting goods, books, electronics, gardening and home goods.

Warehouse

Company has a warehouse for shipping orders to customers.

retail financing

Customers can finance their purchases via inhouse financing.

**Program Parts**

**MySQL Database**

Stores information on customers, orders, warehouse activies, products, suppliers, customer financing.

**Main Program**

keeps track of time (tick). updates the bots, and database and visualisations as necessary.

**Customer and worker bots**

Basic AI bots to represent action of customers and warehouse workers sending relevant SQL queries.

**Datawarehouse**

Stores information from companies that have been taken over and merged. (customers, suppliers, products workersetc.)

Datawarehouse organises the data into clear views for marketing etc.

Datawarehouse has the ability cross check records against MySQL database.

**Data Visualisation**

Tableau - links into datawarehouse.

product sales over time

Most productive worker

Breakdown of customer purchases

**MySQL Database**

data schematic

**Bots**

**Basic Bot**

Has three states

Inactive

Send query and print output

Send query that inputs info

All states return to inactive after completing

Bot can move from inactive to another state due to random input

Bot has a list of queries it can send

**Customer Bot**

extends basic bot

has percentage of prefernece for different products

when buy function is is called will select product based on chance and make purchase. the customer bot will either always finance or always buy with full payment. when a customer's order is shipped the bot can check if the shipment is correct or incorrect and will update the database accordinly. Some customers have the ability to be fraudulent and incorrectly report missing items.

functions

Buy

selects item to buy

create query

based on selection

send query to database

**Warehouse Worker Bot**

extends basic bot.

Bots have different efficiency rates

Bots have the ability to make mistakes. ship orders with missing products or incorrect product. this is based on percentage chance.

uses query to retrieve order from database and creates a pallet.

fufills order

**Visualisation**

put in mock ups of visualisations.

**Iterations**

Iteration 1:

Draw out schema by hand - done

Iteration 2:

Create data in csv - done

Create dummy data orders and customers etc. - done

Write sql code to create data - done

Create basic sql queries to get data - done

Iteration 3.

Set up python program - done

Get python to connect to mysql - done

Send basic query to retrieve data - done

Send query to update data - done

Iteration 4.

Write out description of bots - done

Create super basic bot that can put in an order - done

Create basic customer bot

create basic warehouse bot

main program can run on time and update database and bots.

Iteration 5.

Update database complexity (financing, pallets etc.)

update complexity of customer bot (cheat and steal)

update complexity of worker bot (makes mistakes)

main program can detect customer theft

review and clean database code.

Iteration 6:

Create historic data of previous stores

Book shop

Sportsware store

Home goods

Financing

Social media

Iteration 7:

Set up code to merge data from multiple sources

Write out differnt data views

Iteration 8.

put different views here

Interaction 8.

Connect tableau to mysql or python

Create basic visualisations