Vending Machine Program Report

The keyboard has keys:

- Lower case letter a – z
- Space, Enter
- Numbers 1-10
- Buttons: ‘continue’, ‘continue to buy’, ‘restart’ and ‘cancel’.

Object oriented programming:

I have applied object-oriented programming in this vending machine program design to organise different types of objects, functions they can perform with their respective attributes and the way they should interact each other.

Classes and functions defined in my program:

Classes	Functions
Products	• Show product availability • Reset availability (admin function) • Choose items (user) • Set quantity (user) • Add sugar to coffee
Coins	• Show coin storage (admin) • Dispense refund with available coins • Reset coin storage (admin)
Admin	• Set password • Show error message
Transaction	• Show selected items and quantity chosen • Calculate price based on items and respective quantity chosen • Make payment and calculate refund • Show transaction record
Account	• Find user with entered user name (to access past credit)

Using loops

‘For’ loops were used in my program when iteration over a list, dictionary or other finite type of data collection. For example, I used ‘for’ loop when I needed to iterate over every product in user shopping cart to deduct the purchased amount from item availability.

‘While’ loops were used mainly when needing to repeat a process under a certain condition. For example, user is asked repeatedly to insert coin until total inserted coin value (plus any previous user credit) reaches total cost.

Exception handling:

I handled exceptions in my program:

1. By set certain error messages. For example, when user enters a product number outside product range, the user is reminded that they needed to enter a number between 1-6. The loop then continues and the user has chance to enter again.
2. By ‘try and except’ method. I used ‘except ValueError’ statement to display a message to remind the customer when they enter a value other than a number for resetting product quantity.