Presentation Script

Emilio will control mouse and keyboard.

BEFORE POWERPOINT

Emilio: *Launch the .exe. Right click the top of the window and click "Properties>>Layout". Set "Screen Buffer Size" to 1000, so that scrolling is enabled.*
If the window is too large, "Properties>>Font" and set the font size to a smaller value.
Open powerpoint presentation.

Olivier: Hello everyone, today we are presenting our Inventory Management program, Instaventory. First, let us introduce ourselves - my name is Olivier,

Emilio: I'm Emilio.

Hiren: I'm Hiren.

Yue: And I'm Yue.

BEGIN POWERPOINT

Hiren: *Read first slide, "What is Inventory Management Software?"*

Yue: *Read second slide, "Instaventory"*

Emilio: *Read third slide, "User Interface"*

Olivier: *Read fourth slide, "How Products/Items are stored in File"*

Yue: *Read fifth slide, "Data Structures"*

Hiren: *Read sixth slide, “Hash Table”*

Olivier: *Explain seventh slide, “Data Structure Diagram”*

<u>END POWERPOINT</u>

Emilio: *Switch to program.*
Don’t demonstrate add or delete yet - we are required to show deleting the root node of the BST and show collision resolution for the hash table.

Emilio: *[3] Search by UID*
Hiren: When we search by item UID, we use a hash table. As you can see near the bottom of the screen, it takes a very small amount of operations to find items this way.

Emilio: *[4] List Data Sorted by UID*
Yue: To sort the data, we use a BST using UID as a key, and traverse it using an inorder algorithm.

Emilio: *[5] Print Hash Table*
Hiren: This feature simply prints out the contents of each bucket of the hash table. As you can see, there are empty buckets, and there are also a few buckets that have more than one element inside them - a collision. Take a look at index 100 - there is only one item, Peeled Mango Strips. If we add a new item with UID 100 -

Emilio: *[1] Add Item*
UID: ***100***
UPC: ***123456789012***
Name: ***My Product***
Size: ***1ct***
Category: ***1***
Wholesale: ***10***
Retail: ***20***
Quantity: ***1***
[5] Print Hash Table
Hiren: As you can see, now there are two Items in index 100 - they are both contained in a linked list, which is how we resolve collisions.

Emilio: *[6] Print Binary Tree*
Yue: Similar to “Print Hash Table”, this just prints out the binary trees used by our program.
Emilio: *Scroll to the top of the screen, where the “UID BST” is displayed. Find the root node,* ***3000***
Yue: Notice that node 3000 is the root of the BST. If we delete the root -
Emilio: *[2] Delete Item [1] By UID*
Delete UID ***3000****.*
[6] Print Binary Tree
Yue: Now, 3001 is the new root of the BST. The inorder successor gets swapped with the root, and then the old root is deleted.

Emilio: *[7] Efficiency*
Olivier: You might have noticed that the number of operations each option took was displayed at the bottom - in this menu, you can see the total amount of operations since launch, and other information such as the number of collisions or the load factor of the hash table.

Emilio: *[8] Margins and Profitability*
Yue: One special feature of our program is that we calculate which items have the best profit margin, and we use a binary search tree to quickly get an ordered list of Items by profit margin, also displaying the actual profit made from each item.

Emilio: *[9] Save to File*
Olivier: You can choose to save manually using this option. If you quit the program using the QUIT option, it will automatically save for you as well.

Emilio: *[0] Quit*
Olivier: And that's our program, Instaventory. Thank you! Now, we will take any questions from the audience.