

ES-301

Introduction to iRite Programming



Monday, Day 1 Things We Will Accomplish:

- Programming concepts/logical thinking for beginners using Scratch online programming tool
- iRite Overview Powerpoint and review of vocabulary– see attached vocabulary cheat sheet
- 920i Demonstration and Code Review of events causing handler execution (HelloWorld.src)
- 920i Demonstration and Code Review of Customer Data Collection (EntryMode.src)
 - How to download iRite programs with iRev over RS232
 - How to ask a question and open a prompt
 - How EntryMode enumeration works to differentiate which answer is coming in
 - iRev overview of widget types (including text boxes)
 - iRev overview of print formats (including UserString tokens)

Monday Lab:

- Work alone or in groups of two to add the following functionality to EntryMode.src and test on your 920is:
 - Add two more prompts for Age and Salary
 - Add two more Text Boxes and store entered answers to prompts in text boxes (hint: rebuild .iri and make sure DataSource is Programmability)
 - Add the two new answers to the prompts to AuxFormat1 and print to Monitor Mode
- Extra credit:
 - Add a Settings key for User5Key that when pressed, changes to screen 2 (see SelectScreen()) and reset all five softkeys to be 1.Time/Date 2.Separate Prompt 3.Blank 4. Blank 5.Exit. For Time/Date, use KeyPress() API. For separate prompt, add a new question when pressing that key and display on Screen 2. For Exit user key, revert back to original keys and screen 1.
 - Add functionality to when Cancel is pressed in the prompt



Tuesday, Day 2 Things We Will Accomplish:

- 920i Demonstration and Code Review of Truck In/Out application:
 - Toggle Lights and SetDigout() API
 - Settings Menu and review of EntryModes
 - Rite Database Search (Truck ID to determine Weigh In or Weigh Out)
 - iRite Database Add/Edit for Product (including review of prompting)
 - Use of a Transaction Database
 - Review of Settings Menu and how to change settings or menu itself
 - Together add a procedure called WriteKeys

Tuesday Lab:

- Work alone or in groups of two to add the following functionality to TruckInOut.src:
 - Add Customer database with ID and Name fields to iRev file (hint: rebuild .iri)
 - Add Customer Add/Edit softkey to Settings menu
 - Add prompt for Customer ID lookup after Product Prompt (before Weigh Out)
 - Add Customer information to AuxFmt2 (Weigh Out Ticket) and print to Monitor Mode
 - Add Customer information to Transaction database
- Extra credit:
 - Add Product Delete and Customer Delete softkeys to Settings menu
 - Add softkey to Print Transaction report using iRite only (not iRev print formats) to send a comma-delimited file out Port 1.
 - Add option to clear Transaction Database after print and switch to Screen 2 (to show “Are you sure?”) and change softkeys to Yes and No.



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|  | <p><u>Wednesday, Day 3 Things We Will Accomplish:</u></p> <ul style="list-style-type: none"> • 1280 Demonstration and GAME TIME of Blackjack Program – 15 min winner takes all <ul style="list-style-type: none"> ○ Short look at 1280 Blackjack Revolution file and use of images ○ Short look at code to show communication with PC program • 1280 Demonstration of User Interface Demo application <ul style="list-style-type: none"> ○ Loading applications from SD card ○ Examples of how to use images, charts, URLs, Ethernet IP cameras ○ Demonstrate Wifi Direct with Webserver and connect laptop/phone to 1280 • Demo of user interface examples (load 1280 Slide Deck from SD card) • Overview of User Design guidelines • Demonstration and Differences with Truck In/Out program on 1280 <ul style="list-style-type: none"> ○ Revolution: Import .920 file into Revolution, and see what it looks like ○ Load 1280 Revolution file and 1280 program from SD Card to see differences ○ Learn about Clickable widgets vs. softkeys ○ Learn about Use of Images library in firmware ○ Review the Value Swapping setting in the Settings menu and how it toggles on/off <p><u>Wednesday Lab:</u></p> <ul style="list-style-type: none"> • Work alone or in groups of two to add the following functionality to TruckInOut1280.src: <ul style="list-style-type: none"> ○ Add a truck image (“logo.png” “already stored to SD card) to Screen 1 that shows up when weight is above threshold ○ Add your RLWS logo to Screen 1 (“logo.png” stored to SD card) ○ In Settings Menu: when Stored Tares = OFF is pressed, toggle setting from OFF to ON (reference Value Swapping example of toggling on/off) ○ During Weigh Out, check Stored Tares setting and if ON, delete the Inbound record after weighout • Extra credit: <ul style="list-style-type: none"> ○ |
|  | <p><u>Thursday, Day 4 Things We Will Accomplish:</u></p> <ul style="list-style-type: none"> • Overview of Revolution batching setpoints and demonstration without iRite • 1280 Demonstration and Code Review of Recipe Batching application (Recipe.src): <ul style="list-style-type: none"> ○ iRite Digital Input handlers with Start/Estop mushroom wired in ○ Different approach to Entry mode instead of enumerations ○ BatchMode steps and free running setpoints ○ iRite Digital Outputs and Test DIO ○ Display Lists of options and selecting one <p><u>Thursday Lab:</u></p> <ul style="list-style-type: none"> • Work alone or in groups of two to add the following functionality to Recipe.src: <ul style="list-style-type: none"> ○ Add symbols to the main display to show digital outputs ○ Add two more ingredients (up to six total) ○ Add a Subtotal Printout when the Print Key is pressed that keeps track of how many cycles it finishes and the total accumulated weight from those fills. • Extra credit: <ul style="list-style-type: none"> ○ Add a checkweigh after fill is complete. If total of any batch is over 500 lb, turn background of display red. If under 500 lb, turn it white. |
| | <p><u>Friday, Day 5 Things We Will Accomplish</u></p> <ul style="list-style-type: none"> • Plant Tour • How to communicate with a PLC with a 1280 and 920i • How to communicate with a PC program (review from Blackjack) • How to communicate with two indicators <p>Friday Lab: Choice to work on what you want, or pair up and transfer a serial message from 1280 to 1280 and display on screen</p> |