Project 3 Script:

Slide 1: OPENING SLIDE

Slide 2: The code provides a function called set-member that returns T if an item is a member of the set, and NIL otherwise. The set is a list. The function takes two arguments: set and item. If set is null, NIL is returned. If item is found in set, T is returned. Otherwise, the function is called recursively on the rest of the list.

Slide 3: The set-union function returns the union of two sets set-1 and set-2. The result contains no duplicates. It is assumed that set-1 and set-2 contain no duplicates. If set-1 is null, the function returns set-2. If the first element of set-1 is a member of set-2, the function is called recursively on the rest of the list. Otherwise, the function returns the first element of set-1 followed by a recursive call on the rest of the list.

Slide 4: The set-intersection function returns the intersection of two sets set-1 and set-2. The result contains no duplicates. It is assumed that set-1 and set-2 contain no duplicates. If set-1 is null, NIL is returned. If the first element of set-1 is a member of set-2, the function returns the first element of set-1 followed by a recursive call on the rest of the list. Otherwise, the function is called recursively on the rest of the list.

Slide 5: The set-diff function returns the difference of two sets set-1 and set-2. The result contains no duplicates. It is assumed that set-1 and set-2 contain no duplicates. If set-1 is null, NIL is returned. If the first element of set-1 is a member of set-2, the function is called recursively on the rest of the list. Otherwise, the function returns the first element of set-1 followed by a recursive call on the rest of the list.

Slide 6: The boolean-xor function returns the exclusive or of two arguments a and b. If a and b are the same, NIL is returned; otherwise, T is returned.

Slide 7: The boolean-implies function returns the implication of two arguments a and b. If a is true, the function returns b. Otherwise, the function returns T.

Slide 8: The boolean-iff function returns the bi-implication (if and only if) of two arguments a and b. If a and b are equal, the function returns T; otherwise, it returns NIL.

Slide 9: The boolean-eval function evaluates a boolean expression. It handles NOT, AND, OR, XOR, IMPLIES, and IFF. If the expression is null, T is returned. If the expression is an atom, it is returned. If the first element of the expression is not, the function is called recursively on the second element, and its result is negated. If the first element of the expression is and, the function checks if all the elements are true, and returns T if so. If the first element of the expression is or, the function checks if any of the elements are true, and returns T if so.

Slide 10: DEMO THE CODE

Slide 11: