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CREATE OR REPLACE FUNCTION mail.read_message(IN _owner character varying, IN _message_id int8,
IN _system_label_folder labels.folders, IN _system_label_status int2, IN _user_label character
varying)
  RETURNS TABLE(id int8,
                sender jsonb,
                subject text,
                body text,
                recipient jsonb,
                system_folder labels.folders,
                system_label jsonb,
                sent_at timestamptz,
                created_at timestamptz,
                updated_at timestamptz) AS
$BODY$
begin
    IF coalesce(TRIM(_owner), '') = '' THEN
        RAISE EXCEPTION '_owner is required.';
    END IF;
    RETURN QUERY
    SELECT mail.message.id,
                jsonb_build_object('email_address', mail.message.sender_email_address,
'display_name', mail.message.sender_display_name) AS sender,
                mail.message.subject,
                mail.message.body,
                jsonb_object_agg(type, s.recipient ORDER BY type) AS recipient,
                labels.system_label.folder AS system_folder,
                --jsonb_build_array(CASE WHEN labels.system_label.done THEN 'done' END, CASE
WHEN labels.system_label.unread THEN 'unread' END) AS system_label,
                to_jsonb(array_remove(ARRAY[CASE WHEN labels.system_label.done THEN 'done'
END,
                                            CASE WHEN labels.system_label.archived THEN
'archived' END,
                                            CASE WHEN labels.system_label.starred THEN
'starred' END,
                                            CASE WHEN labels.system_label.important THEN
'important' END,
                                            CASE WHEN labels.system_label.chats THEN 'chats'
END,
                                            CASE WHEN labels.system_label.spam THEN 'spam'
END,
                                            CASE WHEN labels.system_label.trash THEN 'trash'
END,
                                            CASE WHEN labels.system_label.unread THEN 'unread'
END], NULL)) AS system_label,
                mail.message.sent_at,
                mail.message.created_at,
                mail.message.updated_at
    FROM mail.message LEFT JOIN (SELECT
            mail.envelope.message_id AS message_id,
            mail.envelope.type AS type,
        jsonb_agg(jsonb_build_object('email_address', mail.envelope.recipient_email_address,
'display_name', mail.envelope.recipient_display_name) ORDER BY mail.envelope.id)
             AS recipient
    FROM
        mail.envelope
    GROUP BY
        mail.envelope.message_id, mail.envelope.type) s
    ON mail.message.id = s.message_id
    LEFT JOIN labels.system_label
    ON mail.message.id = labels.system_label.message_id
    WHERE (_message_id IS NULL OR mail.message.id = _message_id) AND
          (mail.message.sender_email_address = _owner OR (mail.message.sent_at IS NOT NULL AND
s.recipient @> ('[{"email_address":"' || _owner || '"}]')::jsonb)) AND
          (_system_label_folder IS NULL OR (labels.system_label.folder = _system_label_folder
AND labels.system_label.owner = _owner))
    GROUP BY
        mail.message.id, labels.system_label.folder,
                         labels.system_label.done,
                         labels.system_label.archived,
                         labels.system_label.starred,
                         labels.system_label.important,
                         labels.system_label.chats,
                         labels.system_label.spam,
                         labels.system_label.trash,
                         labels.system_label.unread;
END;
$BODY$
LANGUAGE plpgsql VOLATILE;

/*SELECT * from mail.read_message(
    :_owner,    -- put the _owner parameter value instead of '_owner' (varchar)
    :_message_id,   -- put the _message_id parameter value instead of '_message_id' (int8)
    :_system_label_folder,  -- put the _system_label_folder parameter value instead of
'_system_label_folder' (folders)
    :_system_label_status,  -- put the _system_label_status parameter value instead of
'_system_label_status' (int2)
    :_user_label    -- put the _user_label parameter value instead of '_user_label' (varchar)
);*/
```