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// Coda-C JSON serialization example

#include <coda-c.h> // jsonout.c

Dictionary sample_employee() { // lets structure data in a Dictionary,
    Dict empl=new0(Dict); // a generic structure.
    Dict_set(empl,"name",Os("Jane Doe"));
    Dict_set(empl,"email",Os("jane.doe@example.com"));

    Array roles=new0(Array);
    Array_add(roles,Os("Admin"));
    Array_add(roles,Os("User"));
    Dict_take(empl,"roles",roles);

    Dict address=new0(Dict);
    Dict_set(address,"city",Os("Atlanta"));
    Dict_set(address,"zipcode",Os("30301"));
    Dict_take(empl,"address",address);
    return(empl);
}

typedef void OSig$(JSON_out,FILE* os,int indent); // virtual signature

int main() {
    Dict empl=sample_employee();
    obj_(JSON_out,empl,stdout,0); // lets just output the data for now as JSON
    printf("\n");
}

// implement methods for the three classes we used
#define class Dictionary
    method$(void,JSON_out,FILE* os,int indent) {
        clean0Pointer keys=Dictionary_AllKeys(self);
        indent+=4; printf("{\n%s",indent,"");
        int nel=Pointer_count(keys);
        for(int j=0;j<nel;++j) {
            char* key=keys[j];
            printf("\n%s" : " ",key);
            obj_(JSON_out,Dict_sub(self,key),stdout,indent);
            if(j<nel-1) printf(",");
            printf("\n%s",indent,"");
        }
        printf("}"); // indent-=4;
    }
#undef class // Dictionary

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#define class Array
    method$(void,JSON_out,FILE* os,intindent) {
        intnel=Array_count(self);
        printf("[ ");
        for(intj=0;j<nel;++j) {
            if(j) printf(", ");
            obj_(JSON_out,Array_sub(self,j),stdout,indent);
        }
        printf(" ]");
    }
#undef class // Array

#define class Char
    method$(void,JSON_out,FILE* os,intindent) {
        printf("\"%s\"",self); // simple strings only
        // does not handle: " \\ or (cc<32) or (cc>127) etc.
    }
#undef class // Char

/* OUTPUT
{
    "name":"Jane Doe",
    "email":"jane.doe@example.com",
    "roles": [ "Admin","User"],
    "address": {
        "city":"Atlanta",
        "zipcode":"30301"
    }
}
*/

```