

# Lead Entity Formula Scripts - Phase 1

## Copy and Paste These Into EspoCRM

**Location:** Administration → Entity Manager → Lead → Formula (Before-Save Script)

### Instructions:

1. Navigate to Administration → Entity Manager
2. Click on "Lead" entity
3. Click "Formula" tab
4. Copy the COMPLETE FORMULA below
5. Paste into the formula editor
6. Click "Save"
7. Test with a lead record

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## COMPLETE LEAD FORMULA (Copy Everything Below This Line)

JavaScript

```
// =====  
// SIYAPATHA FINANCE - LEAD AUTO-CALCULATION FORMULAS  
// Phase 1: EMI, FOIR/DTI, Lead Scoring, Auto-Qualification  
// =====  
  
// =====  
// 1. EMI CALCULATOR  
// Calculate monthly installment based on loan amount and tenure  
// =====  
  
ifThen(  
    cDesiredLoanAmount && cPreferredTenure,  
  
    // Variables  
    $P = cDesiredLoanAmount;  
    $annualRate = 18; // 18% p.a. default  
    $r = $annualRate / 12 / 100;  
    $n = cPreferredTenure;  
  
    // EMI = P × r × (1+r)^n / ((1+r)^n - 1)  
    $numerator = $P * $r * math\power(1 + $r, $n);
```

```

$denominator = math\power(1 + $r, $n) - 1;
$semi = $numerator / $denominator;

// Store calculated EMI
cCCalculatedEMI = math\round($semi, 2);
cProposedEMI = cCCalculatedEMI;
);

// _____
// 2. FOIR & DTI CALCULATOR
// Financial ratios for qualification assessment
// _____

ifThen(
    cProposedEMI && cCMonthlyIncome && cExistingMonthlyObligations >= 0,

    // FOIR = New EMI / Income × 100
    cCFOIR = math\round((cProposedEMI / cCMonthlyIncome) * 100, 2);

    // DTI = Total Obligations / Income × 100
    $totalObligations = cExistingMonthlyObligations + cProposedEMI;
    cCDTI = math\round(($totalObligations / cCMonthlyIncome) * 100, 2);

    // Auto-qualification check
    ifThen(
        cCFOIR < 60 && cCDTI < 50,

        // PASS - Customer qualifies
        cCFinancialQualification = 'Pass';

        // Calculate maximum eligible amount
        $maxEMI = cCMonthlyIncome * 0.50; // 50% DTI limit
        $availableEMI = $maxEMI - cExistingMonthlyObligations;

        // Reverse EMI calculation for max loan amount
        // P = EMI × ((1+r)^n - 1) / (r × (1+r)^n)
        $r = 18 / 12 / 100;
        $n = cPreferredTenure;

        ifThen(
            $n > 0,
            $denom = $r * math\power(1 + $r, $n);
            $numer = math\power(1 + $r, $n) - 1;
            cCMaxEligibleAmount = math\round($availableEMI * $numer / $denom,
0);
        );
    ),

```

```

        // FAIL - Customer does not qualify
        cCFinancialQualification = 'Fail';
        cCMaxEligibleAmount = 0;
    );
);

// -----
// 3. LEAD SCORING ALGORITHM
// Scores lead from 0-100 based on data completeness & quality
// -----

$score = 0;

// CONTACT INFORMATION (30 points)
ifThen(phoneNumber, $score = $score + 15);
ifThen(emailAddress, $score = $score + 10);
ifThen(addressCity && addressState, $score = $score + 5);

// FINANCIAL INFORMATION (40 points)
ifThen(cDesiredLoanAmount, $score = $score + 10);
ifThen(cCMonthlyIncome, $score = $score + 15);
ifThen(cEmployeeType, $score = $score + 10);
ifThen(cExistingMonthlyObligations >= 0, $score = $score + 5);

// DOCUMENTATION (15 points)
ifThen(cNICNo, $score = $score + 10);
ifThen(cDateOfBirth, $score = $score + 5);

// SOURCE QUALITY (15 points)
ifThen(source == 'Web Site', $score = $score + 5);
ifThen(source == 'Existing Customer', $score = $score + 15);
ifThen(source == 'Partner', $score = $score + 10);
ifThen(source == 'Call', $score = $score + 3);

// BONUS: Good CRIB score
ifThen(cCreditScore >= 700, $score = $score + 10);

// Cap at 100
ifThen($score > 100, $score = 100);

// Store score
cLeadScore = $score;
cScoreLastUpdated = datetime\now();

// -----
// 4. AUTO-QUALIFICATION LOGIC
// Automatically set status to Qualified when criteria met

```

```
// =====  
  
ifThen(  
    status == 'Verified' &&  
    cCreditScore >= 650 &&  
    cCFinancialQualification == 'Pass' &&  
    cCFOIR < 60 &&  
    cCDTI < 50,  
  
    // Set status to Qualified  
    status = 'Qualified';  
);  
  
// =====  
// END OF FORMULAS  
// =====
```

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## What These Formulas Do

### 1. EMI Calculator

**Triggers:** When loan amount and tenure are entered

**Calculates:** Monthly installment using standard EMI formula

**Result:** Stores in **cCCalculatedEMI** and **cProposedEMI**

**Example:**

- Loan: Rs. 500,000
  - Tenure: 36 months
  - Rate: 18% p.a.
  - **EMI: Rs. 18,076**
-

## 2. FOIR & DTI Calculator

**Triggers:** When EMI, income, and existing obligations are present

**Calculates:**

- $FOIR = (Proposed\ EMI \div Income) \times 100$
- $DTI = (All\ Obligations \div Income) \times 100$
- Max eligible loan amount

**Thresholds:**

- FOIR must be  $< 60\%$
- DTI must be  $< 50\%$
- If both pass  $\rightarrow$  Qualification = Pass
- If either fails  $\rightarrow$  Qualification = Fail

**Example (Journey 1):**

- Income: Rs. 75,000
  - Existing: Rs. 15,000
  - Proposed EMI: Rs. 18,076
  - **FOIR: 24.1% ✓**
  - **DTI: 44.1% ✓**
  - **Status: PASS**
- 

## 3. Lead Scoring (Nice to have feature)

**Triggers:** On every save

**Calculates:** Score from 0-100 based on:

Category	Points	Criteria
Contact Info	30	Phone, email, address
Financial Info	40	Loan amount, income, employment
Documentation	15	NIC, DOB
Source Quality	15	Web, existing customer, partner

Category	Points	Criteria
CRIB Bonus	+10	Score $\geq$ 700

**Example:**

- New lead with basic contact: ~30 points
- After first call with financials: ~65 points
- After CRIB check (good score): ~75 points

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#### 4. Auto-Qualification

**Triggers:** When status = Verified

**Checks:**

- CRIB score  $\geq$  650
- Financial qualification = Pass
- FOIR < 60%
- DTI < 50%

**Action:** Automatically sets status to "Qualified"

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## Testing the Formulas

### Test Case 1: Journey 1 (Happy Path)

Create/update a lead with these values:

None

First Name: Test

Last Name: Customer

Phone: +94771234567

Email: test@example.lk

Address City: Colombo

Address State: Western Province

Loan Amount (cDesiredLoanAmount): 500000

Tenure (cPreferredTenure): 36

```
Monthly Income (cMonthlyIncome): 75000  
Existing Obligations (cExistingMonthlyObligations): 15000  
CRIB Score (cCreditScore): 720  
Status: Verified
```

#### Expected Results After Save:

- ✓ cCCalculatedEMI = 18,076
  - ✓ cCFOIR = 24.1
  - ✓ cCDTI = 44.1
  - ✓ cCFinancialQualification = Pass
  - ✓ cCMaxEligibleAmount = ~600,000
  - ✓ cLeadScore = 75+
  - ✓ Status automatically changes to "Qualified"
- 

#### Test Case 2: Disqualified (High DTI)

```
None  
Monthly Income: 50000  
Existing Obligations: 20000  
Proposed Loan: 500000 (36 months)  
CRIB Score: 720
```

#### Expected Results:

- ✓ cCCalculatedEMI = 18,076
  - ✓ cCFOIR = 36.2% (Pass)
  - ✓ cCDTI = 76.2% (Fail - over 50% limit)
  - ✓ cCFinancialQualification = Fail
  - ✓ Status remains "Verified" (not auto-qualified)
-

## Test Case 3: Poor CRIB Score

None

Monthly Income: 75000

Existing Obligations: 10000

Proposed Loan: 300000

CRIB Score: 550 (below 650 threshold)

### Expected Results:

- ✓ Financial calculations complete
- ✓ cCFinancialQualification may be Pass
- ✓ But status does NOT change to Qualified (CRIB too low)

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## Next Steps After Formula Installation

Once formulas are saved and tested:

1. ✓ Create status progression workflows
2. ✓ Update Lead layouts to show calculated fields
3. ✓ Test with Journey 1 sample data
4. ✓ Proceed to Phase 2 (Conversion automation)