



MYMETEOCAL: COST ESTIMATION

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1 Introduction

In this document we are going to perform an estimation of the effort that our project requires. We are going to use the following tables:

Function types	Weights		
	Simple	Medium	Complex
N. Inputs	3	4	6
N. Outputs	4	5	7
N. Inquiry	3	4	6
N. Internal Files	7	10	15
N External Files	5	7	10

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Organic	2.4	1.05	2.5	0.38
Semi-detached	3	1.12	2.5	0.35
Embedded	3.6	1.2	2.5	0.32

2 Function Points

2.1 Internal Logical Files (ILFs)

1. **User:** simple structure to model users information
2. **Event:** medium structure to model events information
3. **Invitation:** simple structure to manage invitations
4. **Notification:** simple structure to manage participations

Using the weights from the given table we get:

$$ILFs = 4 \times 7 + 1 \times 10 = 38 \text{ FPs}$$

2.2 External Logical Files (ELFs)

1. **WeatherNotification:** medium structure, retrieved from the weather provider, to manage weather information

Using the weights from the given table we get:

$$ELFs = 1 \times 7 = 7 \text{ FPs}$$

2.3 External Inputs (EIs)

1. **Login/Logout:** simple operations to sign in/out the system
2. **Registration:** simple operation to sign up to the system
3. **Edit Profile:** simple operation to modify user's profile
4. **Create Event:** complex operation to create an event and invite other users (includes participations and notifications creation)
5. **Edit Event:** complex operation to modify an event
6. **Respond to Invitation:** simple operation to accept or decline an invitation to an event
7. **Import Calendar:** complex operation to import a calendar as XML file

Using the weights from the given table we get:

$$EIs = 5 \times 3 + 3 \times 6 = 33 \text{ FPs}$$

2.4 External Outputs (EOs)

1. **Invitation Notification:** simple operation that creates the notification of an invitation
2. **Invitation Mail:** simple operation to send an email to notify of an invitation
3. **Weather Notification:** simple operation that creates a weather notification
4. **Weather Mail:** simple operation to send an email to notify of the weather
5. **Export:** medium operation to export a calendar as XML file

Using the weights from the given table we get:

$$EOs = 4 \times 4 + 1 \times 5 = 21 \text{ FPs}$$

2.5 External Inquiries (ExIs)

1. **View Event:** simple operation to get event information
2. **View User:** simple operation to get user information
3. **View Notifications:** simple operation to get notifications
4. **Search User:** simple operation to find other users by username

Using the weights from the given table we get:

$$ExIs = 4 \times 3 = 12 \text{ FPs}$$

2.6 Total

The total function points are:

$$38 + 7 + 33 + 21 + 12 = 111 \text{ FPs}$$

Using a conversion factor of 46, for J2EE language, that means a total SLOCs of:

$$111 \times 46 = 5106 \text{ SLOCs}$$

The lines of code of our project are 5200, which means a quite good estimation.

3 COCOMO

Since we consider our application as a *Semi-Detached* application, the COCOMO values are:

$$E = a \times K SLOC^b$$

$$D = c \times E^d$$

$$P = E/D$$

Hence:

$$M = 3 \times (5.106)^{1.12} = 18.63 \text{ men - month}$$

$$M = 2.5 \times (18.63)^{0.35} = 6.96 \text{ month}$$

$$M = 18.63/6.96 = 2.67 = 3 \text{ men}$$