Politecnico Di Milano

Engineering of computing systems

Software Engineering II

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MeteoCal

Project Reporting

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1 Function Points

For an estimation of the effort required to complete the application we will use the Function Points method. Every part of the application is considered and the FP computed with the weights in the table below.

Functions	Weights		
	Simple	Medium	Complex
Inputs	3	4	6
Outputs	4	5	7
Inquiry	3	4	6
Internal logic files	7	10	15
External logic files	5	7	10

1.1 Internal logic files(ILFs)

The application uses some entities and the simple one are *Calendar*,*Contact*,*Usernotification*,*Notification*. More complex are *User* and *Event* that will be counted as medium complexity.
FP=4*7+2*10=48

1.2 External logic files(ELFs)

The external logic files are obtained from *Yahoo APIs* and are stored in *Location* and *Forecast*. The queries are not very complex: in location only latitude and longitude are stored. Instead all the data of the forecast query are stored. So the first queries are simple and the second of medium complexity.
FP=1*5+1*7=12

1.3 Inputs

The inputs that the users can send to the application are:

- *Login/Logout:* these are simple operations. 2*3=6
- *Create/Edit an event:* this is a average complex operation because involves many fields and asks also the weather and geo services for the coordinates of the place of the event and the forecasts. 2*4=8
- *Add/Delete contact from address list:* these are simple operations. 2*3=6
- *Register/Modify profile:* medium complexity operations, with some fields to update. 2*4=8
- *Send invites:* simple complexity. 1*3=3
- *Accept/Decline invitation:* easy operations. 2*3=6
- *Import calendar:* complex operations that involve a lot of tables. 1*6=6

Total FP=43

1.4 Inquiry

Our application allows the users to see their own data and the data of another user, this is done with only a query and has simple complexity. Also show the notifications, the address list and the participants to an event is simple. The web app, of course, allows the user to see his calendar with his events. When he clicks on a event the details are shown. These operations are of average complexity.
FP=4*3+2*4=20

1.5 Outputs

The system sends emails to the user for every notification he gets, to accomplish the registration and also for password recovery. The implemetation of this feature is simple. The application allows also to export the calendar and to this the app should take all the events in the calendar of a user and generate the .ics file and this is a complex operation.
FP=1*3+7*1=10
The total of the FPs is 133 so the estimated LOC for a java project is 133*53=7049

Real lines of code: 5408

2 COCOMO

Now we calculate the effort with the COCOMO method. The values that we are going to use are shown in the table below.

Application	a	b	c	d
Organic Mode	2,4	1,05	2,5	0,38
Semi-detached Mode	3	1,12	2,5	0,35
Embedded mode	3,6	1,2	2,5	0,32

We are going to calculate the *Effort* M (Month/Person) the *Development time* T (Months) and the number of people needed for the project N. The dimension of the application S computed before with the Function Points is 7 KLOC. We can use the values for a Semi-detached application because we already knew Java but not the environment of the Enterprise Edition and neither css and xhtml. We had used only for a couple of components Primefaces but the rest of the application has been developed from scratch. So the effort is:

$$M = a*S^b=3*7^{1,12}=26,52$$

and the time spent:

$$T = c*S^d=2,5*7^{0,35}=4,94$$

From these values the number of people is:

$$N= M/T=26,53/4,94=5,37$$

The estimate with Function Points and COCOMO is in excess also for lines of code and people involved in fact the people involved in the project are only 3 and not 5 or 6.

3 Division of the roles

	Rossotti	Pasina	Rubiu	Total hours
Total hours for RASD document:	23	23	23	69
Total hours for DD document:	26	26	26	78
Total hours for Implementation:	152	152	152	456
Total hours for Testing:	3	3	3	9
Hours for other documentation:	2	2	2	6
Total hours for the project:	206	206	206	618