POLITECNICO DI MILANO

Software Engineering 2 Project

myTaxiService

Project Plan Document

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Contents

1 Function Point Estimation **3**
- 1.1 Internal Logic Files . . . 3
- 1.2 External Logic Files . . . 3
- 1.3 External Inputs . . . 3
  - 1.3.1 External Inquiries . . . 4
  - 1.3.2 External Outputs . . . 4
- 1.4 Resuming . . . 4
- 1.5 COCOMO Estimation . . . 4

2 Task Scheduling **6**

3 Resources Allocation **6**

4 Risk Management **6**

1 Function Point Estimation

1.1 Internal Logic Files

The system includes a number of ILFs that will be used to store the information about users, reservations and taxi requests. The system stores information about users, it saves: an username, email, password, name, surname, phone number and date of birth as a String. Taxi Drivers also have availability time and status which are also String. To manage the taxis, the system stores their position. Reservation are composed of a start position, end position and a scheduled time and a reference to a taxi. Taxi requests are composed of a start position and a reference to a taxi. The system also stores a data structure for the queue management.

ILF	Complexity	FP
User	Average	10
Reservation	Average	10
Request	Low	7
Queue management	High	15
Total:		42

1.2 External Logic Files

The system has to manage the conversion between GPS coordinate and addresses using the data obtained from external geo-map APIs.

ELF	Complexity	FP
Coordinates	Low	5
Total:		5

1.3 External Inputs

The client application allows the user to perform the following interactions with the system:

EI	Complexity	FP
Login/Logout	Low	2 x 3
Register/Edit	Average	2 x 4
Request Taxi	High	6
Reserve Taxi	High	6
Set Availability	Low	3
Accept Taxi Request	Low	3
Total:		32

1.3.1 External Inquiries

EQ	Complexity	FP
Uer Profile	Low	3
Incoming Taxi	Average	4
Reservation status	Low	3
Total:		10

1.3.2 External Outputs

EO	Complexity	FP
Notifications	Low	3
Total:		3

1.4 Resuming

Function Type	Value
Internal Logic Files	42
External Logic Files	5
External Inputs	32
External Inquiries	10
External Outputs	3
Total:	92

1.5 COCOMO Estimation

To evaluate the COCOMO II and determine the effort required to complete the software project we also use an online tool that helps us to do some calculus (http://csse.usc.edu/tools/COCOMOII.php). We add the report of that site and the choice made about the Scale Driver to obtain that result.

COCOMO II - Constructive Cost Model

Software Size Sizing Method: Function Points

Unadjusted Function Points: 92 Language: Java

Software Scale Drivers

Precedentedness	Low	Architecture / Risk Resolution	Nominal	Process Maturity	High
Development Flexibility	Low	Team Cohesion	Very High		

Software Cost Drivers

Product		Personnel		Platform	
Required Software Reliability	High	Analyst Capability	Nominal	Time Constraint	Nominal
Data Base Size	High	Programmer Capability	High	Storage Constraint	Nominal
Product Complexity	Nominal	Personnel Continuity	Low	Platform Volatility	Low
Developed for Reusability	Low	Application Experience	Nominal	**Project**	
Documentation Match to Lifecycle Needs	Nominal	Platform Experience	Nominal	Use of Software Tools	Nominal
		Language and Toolset Experience	Nominal	Multisite Development	High
				Required Development Schedule	Nominal

Maintenance Off

Software Labor Rates

Cost per Person-Month (Dollars): 2000

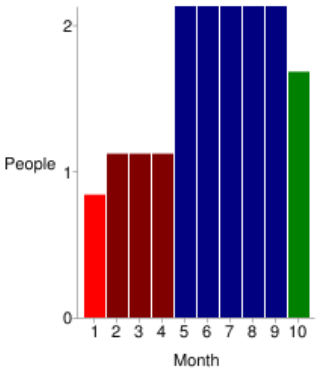
Results

Software Development (Elaboration and Construction)

Effort = 16.1 Person-months
Schedule = 9.2 Months
Cost = $32132

Total Equivalent Size = 4876 SLOC

Staffing Profile



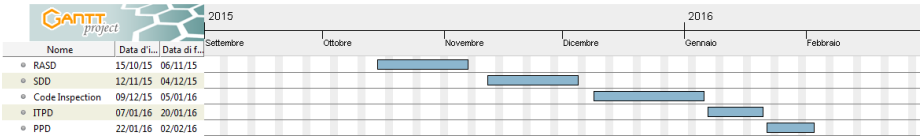
Acquisition Phase Distribution

Phase	Effort (Person-months)	Schedule (Months)	Average Staff	Cost (Dollars)
Inception	1.0	1.1	0.8	$1928
Elaboration	3.9	3.4	1.1	$7712
Construction	12.2	5.7	2.1	$24421
Transition	1.9	1.1	1.7	$3856

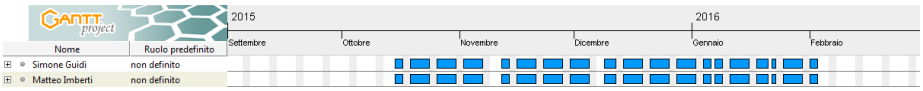
Software Effort Distribution for RUP/MBASE (Person-Months)

Phase/Activity	Inception	Elaboration	Construction	Transition
Management	0.1	0.5	1.2	0.3
Environment/CM	0.1	0.3	0.6	0.1
Requirements	0.4	0.7	1.0	0.1
Design	0.2	1.4	2.0	0.1
Implementation	0.1	0.5	4.2	0.4
Assessment	0.1	0.4	2.9	0.5
Deployment	0.0	0.1	0.4	0.6

2 Task Scheduling



3 Resources Allocation



4 Risk Management

Potential Risk:

Risk	Probability	Effects	Solution
Loss of data	Low	Catastrophic	Avoided by uploading project data on github platform
Resources illness	Moderate	Serious	Partially avoided by allowing working at home