IT314: Software Engineering
Project: Speed Detection
Group: G3

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Project Scope

This product can be used in the following ways/domains:

A. Calculating speed of pedestrians/moving humans (Ex. Athletes)
B. Calculating speed of moving vehicles
C. Calculating speed of balls in sports (Ex. Cricket, Tennis etc.)

Estimating the effort of project

Calculating TCF

The technical factor, TCF, = .6 + (.01*S1..13Tn*Weight).

Factor	Description	Weight	Assigned Value	Weight x Assigned Value
T1	Distributed System	2.0	4	8
T2	Response time performance objectives	1	3	3
T3	End user efficiency	1	4	4
T4	Internal processing complexity	1	3	3
T5	Code readability	1	2	2
T6	Easy to install	0.5	2	1
T7	Easy to use	0.5	2	1

T8	Portability to other platforms	2	1	2
T9	System maintenance	1	3	3
T10	Concurrent/parallel processing	1	1	1
T11	Security features	1	0	0
T12	Access for third parties	1	0	0
T13	End user training	1	1	1
Total				29
TCF				**0.89**

CALCULATING EF

The environmental factor, EF, = 1.4 + (-.03* S1..8Fn*Weightn).

Factors	Description	Weight	Assigned value	Weight X assigned value
E1	Familiarity with development process used	1.5	3	4.5

E2	Application expertise	0.5	2	1
E3	Object oriented experience of team	1	4	4
E4	Lead analyst capability	0.5	0	0
E5	Motivation of the team	1	0	0
E6	Stability of requirements	2	2	4
E7	Part-time staff	-1	0	0
E8	Difficult programming language	-1	0	0
	Total			13.5
	EF			**0.995**

Use Case Classification	No. of Transactions	Weight
Simple	1 to 3 transactions	5
Average	4 to 7 transactions	10
Complex	8 or more transactions	15

UUCW = (Total No. of Simple Use Cases x 5) + (Total No. Average Use Case x 10) + (Total No. Complex Use Cases x 15)

Actor Classification	Type of Actor	Weight
Simple	External system that must interact with the system using a well-defined API	1
Average	External system that must interact with the system using standard communication protocols (e.g. TCP/IP, FTP, HTTP, database)	2
Complex	Human actor using a GUI application interface	3

UAW = (Total No. of Simple actors x 1) + (Total No. Average actors x 2) + (Total No. Complex actors x 3)

- The unadjusted use case points, UUCP, = UAW + UUCW.
- UUCW = Number of use cases * Weight according to transactions
  = 8*5 = 40
- UAW = Number of simple actors*1 + number of average actors*2 + number of complex actors*3
  = 1*3 = 3
- UUCP = 40+3 = 43
- UCP = UUCP*TCF*EF = 43*0.995*0.89= 38.07865
- Estimate = UCP * Productivity factor(40) = 1523 hrs
- Therefore , total estimated time is 8-9 weeks.