Time Estimation:

Features	Customer App		WEB API	Order management
Login Management	8	8	4	12
User Sign up / Registration	16	16	4	
Manage Profile	12	12	3	
Product Search	6	6	2	
Featured Product	4	4	3	
Checkout	60	60	12	
Online Payment Processing	40	40	6	
Order Overview	8	8	2	
Order History	8	8	2	
Review Rating / Feedback	12	12	4	32
Push Notification	20	20		20
New Order Notifications			8	
Order Assignment			6	
View Order Details	12	12	2	
Multiple Orders			10	
Order Status			4	
Manage Customer				20
Store Management	14	14		20
Manage Products				60
Manage Categories				30
Order Management				32
Inventory Management				32
Payment Processing				30
Total	220	220	72	288
Grand Total		**800**		

Cost Estimation Using COCOMO

APPLYING COCOMO I

Sub-model Used: Basic COCOMO I

Model Used: Organic

Estimation of Effort: Calculations :-

Formulas Used:

$$E = a(\text{KLOC})^b$$

$$time = c(Effort)^d$$

$$Person\ required = Effort/time$$

The above formula is used for the cost estimation of for the basic COCOMO model, and also is used in the subsequent models. The constant values a,b,c and d for the Basic Model for the different categories of system:

Software Projects	a	b	c	d
Organic	2.4	1.05	2.5	0.38
Semi Detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

According To Use Of Organic Model We Can Modify Formula or Reconstruct it as Follow:

Effort (Man/Month) = 2.4 * (KLOC)$^{1.05}$ **…..(1)**

Time = 2.5 * (Effort)$^{.38}$ **…..(2)**

Calculating Total LOC :

Web Page	No of Lines Of Code
About Us	101 LOC
Medicine Details	119 LOC
Categories	376 LOC
Home	120 LOC
Contact Us	115 LOC
Feed Back/Review/Rating	250 LOC
Profile	450 LOC
Payment	250 LOC
Search Results	330 LOC
Cart	180 LOC
Sign IN	118 LOC
Sign UP	190 LOC
Verification	146 LOC
Orders	350 LOC
Store Management	450 LOC
Total= 3545 LOC, 3.545 KLOC	

Estimating Effort :

Effort (Man/Month) = 2.4 * (KLOC) $^{1.05}$ 　　　　.....(1)

Effort = 2.4 * (3.545) $^{1.05}$

Effort = 9.063 MM

.

Estimating Time :

Time = 2.5 * (Effort) $^{.38}$ 　　　　　.....(2)

Time = 2.5 * (9.063) $^{.38}$

Time = 5.777 Months

Sub-model Used: Intermediate COCOMO I

Mode Used: Organic

Formula Used:

$$E = (a(KLOC)^b) * EAF$$

$$time = c(Effort)^d$$

Software Projects	a	b	c	d
Organic	2.4	1.05	2.5	0.38
Semi Detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

According To Use Of Organic Model We Can Modify Formula or Reconstruct it as Follow:

Effort (Man/Month) = 2.4 * (KLOC)$^{1.05}$*EAF   …..(3)

Time = 2.5 * (Effort)$^{.38}$ …..(2)

Cost Drivers:

- **Product Attributes:**
  1. RELY – Required Software Reliability.
  2. DATA – Data Base Size.
  3. CPLX - Product Complexity.
- **Computer Attributes:**
  4. TIME - Execution Time.
  5. STOR - Main Storage.
  6. VIRT- Virtual Machine Volatility.
  7. TURN- Computer Turn Around Time
- **Personal Attributes:**
  8 ACAP - Analyst Capability.
  9 AEXP-Application Experience.
  10 PCAP- Programmer Capability.
  11 VEXP- Virtual Machine Experience.
  12 LEXP- Programming Language Experience.
- **Project Attributes:**
  13 MODP- Use of Modern Programming Practices.
  14 TOOL- Use of Software Tool.
  15 SCED- Required Development Schedule

<p align="center">Table: <u>Estimation Cost Drivers:</u></p>

	Very Low	Low	Normal	High	Very High
RELY				1.15	
DATA					1.16
CPLX					1.30
TIME		0.85			
STOR				1.21	
VIRT				1.30	
TURN				1.15	
ACAP				0.86	
AEXP		0.80			
DCAP			1.0		
VEXP				0.90	
LEXP				0.95	
MODP			1.0		
TOOL					0.83
SCED		0.85			

Calculating Effort Adjustment Factor (EAF):

Here all assessment values are multiplied together to determine the EAF:

EAF=

1.15×1.16×1.30×0.85×1.21×1.30×1.15×0.86×0.80×1.0×0.90×
0.95×1.0×0.83×0.85

EAF= 1.1

Estimating Effort :

Effort (Man/Month) = 2.4 * (KLOC)$^{1.05}$*EAF .....(3)

Effort = 2.4 * (3.545)$^{1.05}$ *1.1

Effort = 9.970 MM

Estimating Time :

Time = 2.5 * (Effort) $^{.38}$ .....(2)

Time = 2.5 *(9.970)$^{.38}$

Time = 5.99 Months