**Number of external inputs (Eis)**

registration(7)

login(2)

add product(10)

contact form(4)

checkout(3)

product review(3)

add discount(1)

filter/search(6)

36

**Number of external outputs (Eos)**

payment/order confirmation(2)

invoice(1)

search/filter results(1)

cart(1)

tracking messages(1)

system generated seller page(1)

7

**Number of external inquiries (EQs)**

cart updation

search/filter products

place order

3

**Number of internal logical files (ILFs)**

14

**Number of external interface files (EIFs)**

2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Information domain value | Count | Simple | Average | Complex |  |
| EIs | 36 | 3 | 4 | 6 | 108 |
| EOs | 7 | 4 | 5 | 7 | 35 |
| EQs | 3 | 3 | 4 | 6 | 12 |
| ILFs | 14 | 7 | 10 | 15 | 210 |
| EIFs | 2 | 5 | 7 | 10 | 20 |
| Count Total |  | | | | 385 |

**14 questions**

**1. Does the system require reliable back up plan & recovery ?– 5**

Ans. The database contains huge amount of data, which is essential for the system to function as expected. A backup will help the system to recover from a catastrophic failure.

**2. Are specialized data communications required to transfer information to or from the application? – 1**

Ans. There are no specialized data communications required to transfer information to or from the application

**3. Are there distributed processing functions? - 1**

Ans. All processes run on a central server

**4. Is performance critical? – 5**

Ans. E commerce websites need to be highly responsive and fast

**5. Will the system run in an existing heavily utilized operational environment? – 1**

Ans. An e commerce website needs a dedicated server to successfully manage the high incoming traffic

**6. Does the system require online data entry? – 5**

Ans. A major part of the information stored in the system comes from the users of the system.

**7. Does the online data entry require input transaction to be built over multiple screens or operations? – 3**

Ans. Some processes that input data from users require the data entry process to be spread over multiple pages

**8. Are the ILFs updated online? – 5**

Ans. All the ILFs are stored on an online database server

**9. Are the inputs, outputs, files or inquiries complex? – 1**

Ans. Simplicity of inputs/outputs/files/inquiries ensure the system performance stays acceptable

**10. Is the internal processing complex? - 3**

Ans. Certain functionalities require execution of complex data retrieval queries

**11. Is the code designed to be reusable? – 3**

Ans. The website has been developed keeping in mind the object oriented priniciples

**12. Are conversion and installation included in the design? -1**

Ans. No conversion is possible and installation is not required

**13. Is the system designed for multiple installations in different organizations? – 1**

Ans. No installation is required as it is a web based system

**14. Is application designed to facilitate change and for ease of use by the user? – 5**

Ans. The website has been developed keeping in mind the ease of use for the user

Total () = 40

Fpestimated = 404.25

Productivityassumed = 6.5

Effort = 62.1923 person-months.

COCOMO

|  |  |  |
| --- | --- | --- |
| Cost Driver | Description | Counterpart Combined Post- |
|  |  | **Architecture Cost Driver** |
|  |  |  |
| RCPX | Product reliability and complexity | RELY, DATA, CPLX, DOCU |
|  |  |  |
| RUSE | Required reuse | RUSE |
|  |  |  |
| PDIF | Platform difficulty | TIME, STOR, PVOL |
|  |  |  |
| PERS | Personnel capability | ACAP, PCAP, PCON |
|  |  |  |
| PREX | Personnel experience | AEXP, PEXP, LTEX |
|  |  |  |
| FCIL | Facilities | TOOL, SITE |
|  |  |  |
| SCED | Schedule | SCED |
|  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | | |  |
| Cost Driver | **Description** |  |  | **Rating** | | |  |
|  | | | | | | | |
|  |  | **Very Low** | **Low** | **Nominal** | **High** | **Very High** | **Extra High** |
|  |  |  |  |  |  |  |  |
| *Product* |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| RELY | Required software reliability | 0.75 | 0.88 | 1.00 | 1.15 | 1.39 | - |
|  |  |  |  |  |  |  |  |
| DATA | Database size | - | 0.93 | 1.00 | 1.09 | 1.19 | - |
|  |  |  |  |  |  |  |  |
| CPLX | Product complexity | 0.70 | 0.88 | 1.00 | 1.15 | 1.30 | 1.66 |
|  |  |  |  |  |  |  |  |
| RUSE | Required  reusability |  | 0.91 | 1.00 | 1.14 | 1.29 | 1.49 |
|  |  |  |  |  |  |  |  |
| DOCU | Documentation |  | 0.95 | 1.00 | 1.06 | 1.13 |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| *Platform* |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| TIME | Execution time | - | - | 1.00 | 1.11 | 1.31 | 1.67 |
|  | constraint |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| STOR | Main storage | - | - | 1.00 | 1.06 | 1.21 | 1.57 |
|  | constraint |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| PVOL | Platform volatility | - | 0.87 | 1.00 | 1.15 | 1.30 | - |
|  |  |  |  |  |  |  |  |
| *Personnel* |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| ACAP | Analyst capability | 1.50 | 1.22 | 1.00 | 0.83 | 0.67 | - |
|  |  |  |  |  |  |  |  |
| PCAP | Programmer capability | 1.37 | 1.16 | 1.00 | 0.87 | 0.74 | - |
|  |  |  |  |  |  |  |  |
| PCON | Personnel continuity | 1.24 | 1.10 | 1.00 | 0.92 | 0.84 | - |
|  |  |  |  |  |  |  |  |
| AEXP | Applications experience | 1.22 | 1.10 | 1.00 | 0.89 | 0.81 | - |
|  |  |  |  |  |  |  |  |
| PEXP | Platform experience | 1.25 | 1.12 | 1.00 | 0.88 | 0.81 | - |
|  |  |  |  |  |  |  |  |
| LTEX | Language and tool experience | 1.22 | 1.10 | 1.00 | 0.91 | 0.84 |  |
|  |  |  |  |  |  |  |  |
| *Project* |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| TOOL | Software Tools | 1.24 | 1.12 | 1.00 | 0.86 | 0.72 | - |
|  |  |  |  |  |  |  |  |
| SITE | Multisite Development | 1.25 | 1.10 | 1.00 | 0.92 | 0.84 | 0.78 |
|  |  |  |  |  |  |  |  |
| SCED | Development Schedule | 1.29 | 1.10 | 1.00 | 1.00 | 1.00 | - |

Fp = 404.25

Lines of code = 60\*404.25 = 24255

KLOC = 24.255

EAF = 0.6028

Effort = 2.45 \* 24.255 \* 0.6028 = 35.821