**Suryadatta Institutes of Management, Pune -21**

**Assignment No 6.**

**(Problems on Function Point & COCOMO)**

**Class: MCA I Year II Semester Academic Year 2023-2024**

**Subject: IT 22 Software Project Management**

**1**. Consider a Project with the following functional units

i) Number of User Inputs = 20

ii) Number of User outputs = 25

iii) Number of User enquiries = 15

iv) Number of User files = 10

v) Number of external Interfaces = 05

In addition to above, System requires

• System Requires reliable backup and recovery (5)

• System requires significant online data entry (4)

• Master files moderately updated online (2)

• System is designed for multiple installations (5)

• Internal Processing Complex (5)

Other complexity adjustment factors are treated as Significant. Compute the function point for the Project.

**2**.Consider project with following functional units

a) Number of user Inputs = 50

b) Number of user Inquiries= 35

c)Number of Logical Files = 06

d)Number of Outputs= 40

e) Number of external Interfaces= 06

In addition to above, system requires

i)Performance is very critical (5)

ii)Significant data communication (4)

iii)Designed code may be moderately reusable (2)

iv)System is not designed for multiple installations (0)

Other complexity factors are treated as Average. Compute Function Point for the project.

**3**. Calculate Function Point Value for a software project from the given information as follows:

* Data Entry Screens: 12
* Reports: 15
* Enquires: 10
* No. of Programs: 25
* Algorithms: 25
* Files: 16

**4**. EI- 55, EO- 43, EQ- 37, ILF- 21, EIF- 9

In addition to above, system requires

Incidental data communication, performance is not critical, design code is significantly reusable & system is designed for multiple installations.

Calculate function point.

**5.** EI- 50, EO- 40, EQ- 35, ILF- 31, EIF- 14

In addition to above, system requires

Significant data communication, performance is very critical, design code is moderately reusable & system is not designed for multiple installations.

Calculate function point.

**6.**A Project size of 301 KLOC is to be developed. Software programmers have high experience & they used nominal TOOLS for development Process & vice versa. Calculate the effort, development time period; staff size & productivity in both cases & conclude results.

**7**.A Project size of 299 KLOC is to be developed. Software programmers have nominal experience & they used very high TOOLS for development Process & vice versa. Calculate the effort, development time period; staff size & productivity in both cases & conclude results.

**8**. What is COCOMO technique? Explain the all models of COCOMO in detail? What is the time required to develop a complete Project of 25,000 lines of code?

**9**.You are required to give cost estimation for the project of size 32000 LOC. Explain COCOMO in detail.

**10.** A project estimated for 371 KLOC has to be developed. While developing the project following cost drivers needs to be considered.

1. Size of application database (1.08)

2. Volatility of the virtual machine environment (1.30)

3. Programming language experience (0.95)

4. Use of software tools (0.83)

and remaining drivers are treated as nominal. For development of the project average salary will be Rs. 15,000/-. Calculate effort, development time, productivity and number of people required to complete the project. Also calculate total cost of the project.

**11**.Suppose that a project was estimated to be 400000 LOC. calculate effort and development time for each mode of the COCOMO-I.

**12**. A project estimated for 500 KLOC has to be developed. For development Project also requires

• Execution time constraint is High – 1.11

• Database Size is high – 1.08

• Programmer Capability is very high – 0.70

• Modern Programming Practices very low – 1.10

Calculate Effort, Development Time Period, Staff Size and Productivity.