NAME: ahmed sattar

ROLL NO: 19P-1672

SECTION: BSE-4A

Task # 12

Evaluate your architecture of (HMS) quantitatively with architectural

design metrics.

Use the following metrics:

Reusability Metrics

Maintainability Metrics

Try to improve your architecture design in terms of complexity,

reusability, and maintainability.

Revise your architectural decisions and then observe the results of metrics.

REUSABILITY METRICS

1. **Reusability Metric:**

   In HMS, reusability plays an important role because it causes the system to be used again and again to gain access of the facilities for the patients.

   Res = TotalCoupling = DC (p) + IC (p)

- Direct calls includes login or registration of account, book an appointment, view doctors list, view treatment records.
- Indirect calls includes entering patient's treatment records, test results, generating the bills.

So,

Res = 34

2. **Reusability Factor:**

ResF = CM (sys)/ Tcoup (sys)

ResF = 16/34

ResF = 0.470

Maintainability Metrics

1. **Cohesion:**

Cohesion positively impacts maintainability of s system. As in HMS cohesion is less then the maintainability will be less improve rather than high cohesion.

2. **Coupling:**

   As coupling negatively impacts maintainability metric. In HMS coupling is high which means maintainability will be low or less.

3. **No of Complex Components:**

   It also negatively impacts the maintainability metric, but as complex components are less in HMS system maintainability metric will not be effected.

4. **Complexity:**

Complexity has negative impact on the maintainability metric, as HMS is less complex it does not affect maintainability of the system.