جامعة القاهرة
كلية الحاسبات و المعلومات
Quiz #1 Spring2022

تاريخ:		قسم: Software Engineering
المدة: min		اسم المقرر: SC359
إجمالى الدرجات:		د. حسين محمد شرف

Software Security
SCS359
Task 1

Implemented by

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The estimated time for each part is indicated by E.T.

Question (1) MCQ Write the letter of the most correct answer
[E.T. =30][30 marks]

Part A: Lec1 Product Quality:

1) Which SQF is concerned with how easily bugs can be found and fixed?

A) Correctness	B) Maintainability
C) Reliability	D) Testability

2) Which SQF determines how well the data is secured?

A) Efficiency	B) Usability
C) Integrity	D) Reliability

3) Which SQF determines how easily the system can be used on another machine or platform?

A) Portability	B) Maintainability
C) Interoperability	D) Reusability

4) Which is not of the primary SQFs?

A) Portability	B) Correctness
C) Usability	D) Integrity

5) Which of the following is not a part of unit testing for a particular class?

A) Stress Testing	B) Interface Testing
C) Boundary-condition Testing	D) None

6) Which of the following is the purpose of system testing?

A) To test individual classes or modules	B) To test the entire software system
C) To find and fix bugs in the code	D) To ensure that the user interface is user-friendly

7) Which of the following is tested in stress testing during system testing?

A) The system's ability to be started in a working hardware/software configuration	B) The system's ability to operate reliably at the limits of each of its resources
C) The system's security features	D) The system's speed and number of concurrent users permitted

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8) What is the difference between system testing and acceptance testing in terms of customer involvement?

A) Both are in-house activities and the customer is not involved	B) Only system testing involves the customer
C) Only acceptance testing involves the customer	D) System testing is an in-house activity and the customer is not involved, while acceptance testing is conducted with much more at stake as the customer can accept or reject the system based on his performance

Part B: Lec2 Measuring System Complexity:

The following table shows suitable data to calculate the area

Length	Width	Expected Result
0	5	0
5	0	0
10	10	100
100	100	10000
1000	1	1000

9) Which values are considered the extreme values for testing the "calculate area" function in this example?

A) 0 and 10	B) 5 and 100
C) 10 and 1000	D) 0 and 1000

10) What are the values for which correct processing is tested when testing the "calculate area" function, based on the given example?

A) 0, 1000, 5, 100, and 10	B) 0 and 1000
C) 5 and 100	D) 10

11) Which value is in the middle of the subdomain for testing the "calculate area" function in this example?

A) 0	B) 5
C) 10	D) 100

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12) What is the main problem with white-box testing alone?

A) Poor coverage levels	B) Difficulty in identifying customer requirements
C) Inability to test internal state of an object	D) Inability to test implementation code

13) What is the solution to the problems of black-box and white-box testing?

A) Combining black-box and white-box testing	B) Using only white-box testing
C) Using only black-box testing	

14) Which of the following is **not** a way of measuring complexity in Object Oriented?

A) Coupling-between-objects	B) Number-of-children
C) McCabe's-cyclomatic	D) None

15)
```
def print_fibonacci(n):
    a,b = 0,1
    if n<0:
        print("Incorrect input")
    elif n==0
        print(a)
    elif n==1:
        print(b)
    else:
        for i in range(2,n):
            c=a+b
            a=b
            b=c
        print(b)
```
The provided code has a cyclomatic complexity of ….:

A) 1	B) 2
C) 3	D) 4

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16) **def function isEven(num) {**
if (num % 2 == 0) {
return true;
} else {
return false;
}
}

The provided code has a cyclomatic complexity of ….:

A) 1	B) 2
C) 3	D) 4

17) **def function getGrade(score) {**
let grade;
if (score >= 90) {
grade = 'A';
} else if (score >= 80) {
grade = 'B';
} else if (score >= 70) {
grade = 'C';
} else if (score >= 60) {
grade = 'D';
} else {
grade = 'F';
}
return grade;
}

The provided code has a cyclomatic complexity of ….:

A) 3	B) 4
C) 5	D) 6

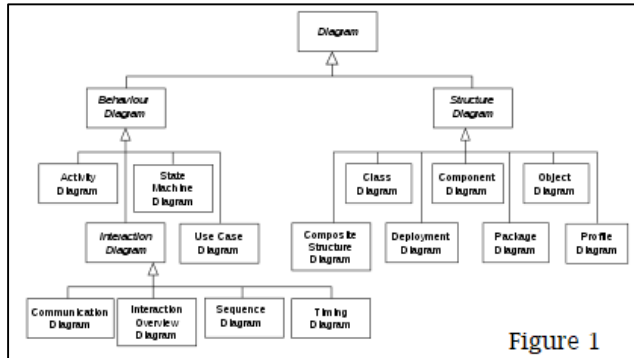| تاريخ:		قسم: Software Engineering
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Figure 1
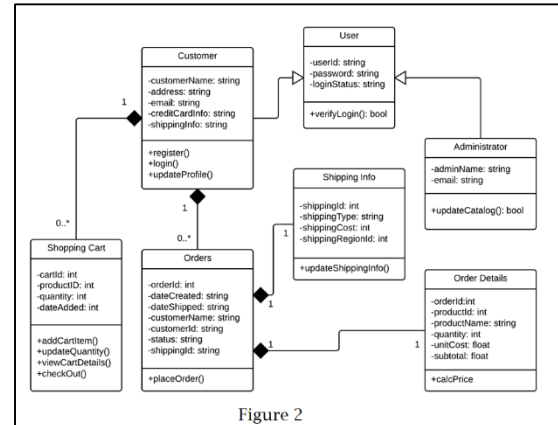

Figure 2

18)   In Figure 1, the Depth of Inheritance is equal to ….:

A) 4	B) 3
C) 2	D) 1

19)   In Figure 1, the Number of Children is equal to ….:

A) 2	B) 4
C) 7	D) 15

20)   In Figure 2, the Number of Children is equal to ….:

A) 0	B) 1
C) 2	D) 3

21)   In Figure 2, Coupling between Objects is equal to ….:

A) 0	B) 2
C) 4	D) 5

22)   Coupling between Objects is ….:

A) Higher in Figure 1	B) Higher in Figure 2
C) Equal in Figure 1&2	D) Immeasurable

Part C: Lec3 Securing Architecture:

23)   What are design patterns?

A) Patterns for the skeleton and abstract view of the software	B) Patterns for solving specific code scenarios

24)   What are architecture patterns?

A) Patterns for the skeleton and abstract view of the software	B) Patterns for solving specific code scenarios

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25)   What are two styles (flavors) of Layers pattern?

A) Three Layer pattern and Five Layer pattern	B) Three Layer pattern and Eight Layer pattern
C) Five Layer pattern and Eight Layer pattern	D) Eight Layer pattern and Four Layer pattern

26)   What are the three principal layers in The Basic Layers pattern?

A) Application, Technical and Presentation layers	B) Presentation, Domain and Technical layers
C) Application, Technical and Data source layers	D) Presentation, Domain and Data source layers

27)   What are the two extra mediating layers between the principal layers?

A) Application and Presentation layers	B) Presentation and Domain layers
C) Application and Technical layers	D) Presentation and Domain layers

28)   What are the main issues addressed by the Layers pattern?

A) Ease of usage and maintainability	B) Achieving low coupling between functionalities and separating concerns
C) Replication and Performance	D) Securing and increase safety in the application

29)   What is the intent of the MVC model?

A) Increase the layer architecture effect	B) Split user interface interaction into three distinct roles
C) To use the M component as the front end	D) Defining four roles

30)   When is an SOA implementation most appropriate?

A) An immediate return of investment is required	B) A real-time performance is critical
C) Application interface requires high degree of customization	D) Business functionality is required by many parts of the organization

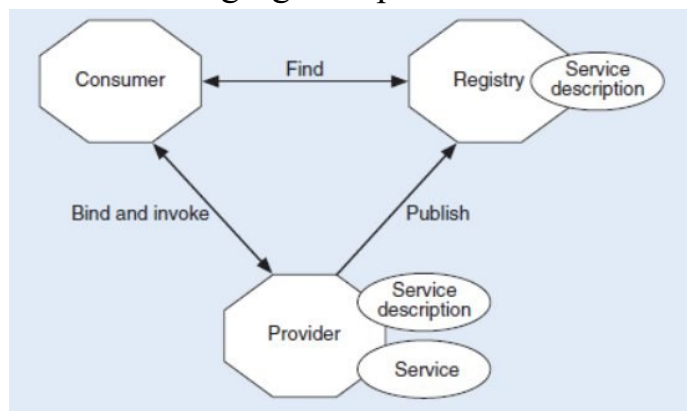| تاريخ:		قسم: Software Engineering
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31)   What is a web service?

A) A service that improves coding	B) An approach to build enterprise systems that deliver application functionality either as services to end-user applications or to build other services
C) A software module designed to support interoperable machine-to-machine interaction over a network	D) Business functionality is required by many parts of the organization

32)   What is SOA?

| A) A service that improves coding	B) An approach to build enterprise systems that deliver application functionality either as services to end-user applications or to build other services
C) A software module designed to support interoperable machine-to-machine interaction over a network	D) Business functionality is required by many parts of the organization

33)   What does the following figure represent?

A) Service collaboration in SOA	B) Layered architecture
C) Web service	D) Customized architecture

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34) What does the following Clock system represent?
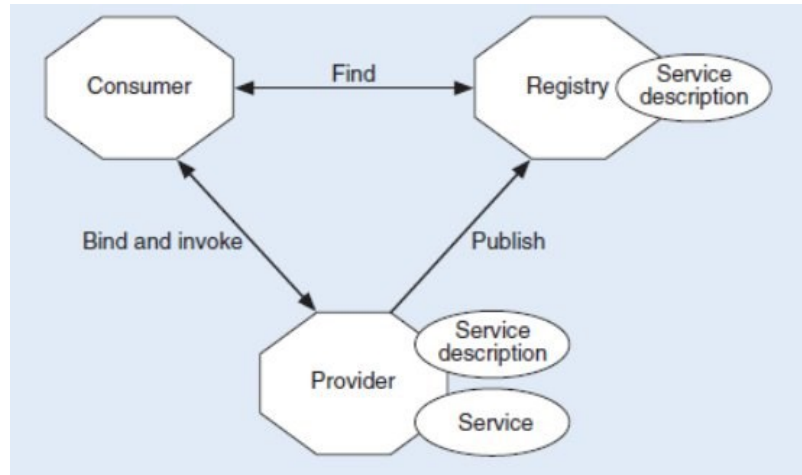
A) MVC	B) Layered architecture
C) Web service	D) SOA

Part D: Lec4 Securing Architecture:

35) Both are ways for passing values in form of key pair allowing recursive data structures:

A) Message passing, XML	B) HTML, CSS
C) JSON, JavaScript	D) JSON, XML

36) What is not true about customized architecture:

A) Each entity has one stored procedure	B) Collection of static procedures.
C) Can rebuild their behavior during runtime	D) Stored procedure gather all its operation

37) What does not belong to SOA architecture infrastructure:

A) Database	B) Provider
C) Service	D) Registry

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38)   **@app.route('/helloAgain')**
def hello_again():
What does these lines do?

A) Change path to ('/helloAgain')	B) Define a new function called hello_again()
C) trigger ('/helloAgain') function and then the function is given a name to generate URLs, return messages.	D) trigger ('/helloAgain') and display returned message to the user

39)   **1.from flask import Flask**
    2.app = Flask(MyName)
    3.@app.route('/Name')
    4.def name():
    5.   return 'My name is Ahmed'
    6.   hello again

What is the output of this program?

A) My name is Ahmed hello again	B) Name
C) My name is Ahmed	D) MyName

40)   What does this line do?

[query = conn.execute("select * from employees")]

A) Connect to database	B) Select all rows from employees table
C) Perform query and return JSON result	D) Return first column

41)   What does this line do?

{latitude = data['results'][0]['geometry']['location']['lat']}

A) Set latitude in specific location	B) Return first row latitude
C) Extracting latitude of the first matching locating	D) Put a value for latitude in first row

42)   What is the purpose of (@app.GET("/"))

A) Replace all current representations of the target resource with uploaded content	B) Used to send HTML form data to the server
C) Forward your target URL	D) Server returns data

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43)   What is a Secret Key?

A) Key in the database we work with	B) Used to sign session cookies for protection against cookie data tampering
C) Attacker mustn't know the secret key	D) B & C