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Class BS SE

Course Title: Software Engineering

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Program: BS CS (Software Engineering)

Section “A”

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Iqra National University, Peshawar

Department of Computer Science

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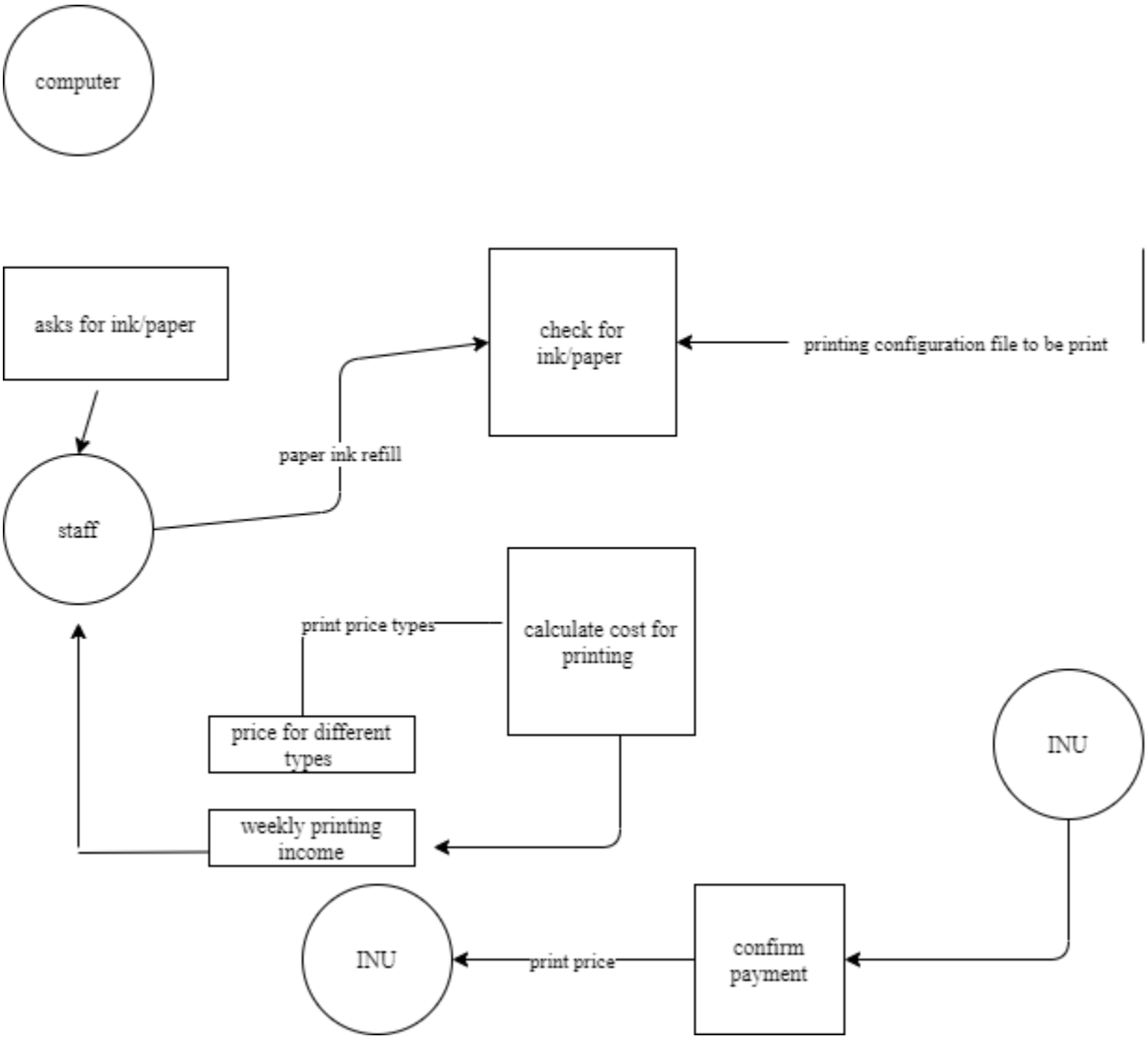
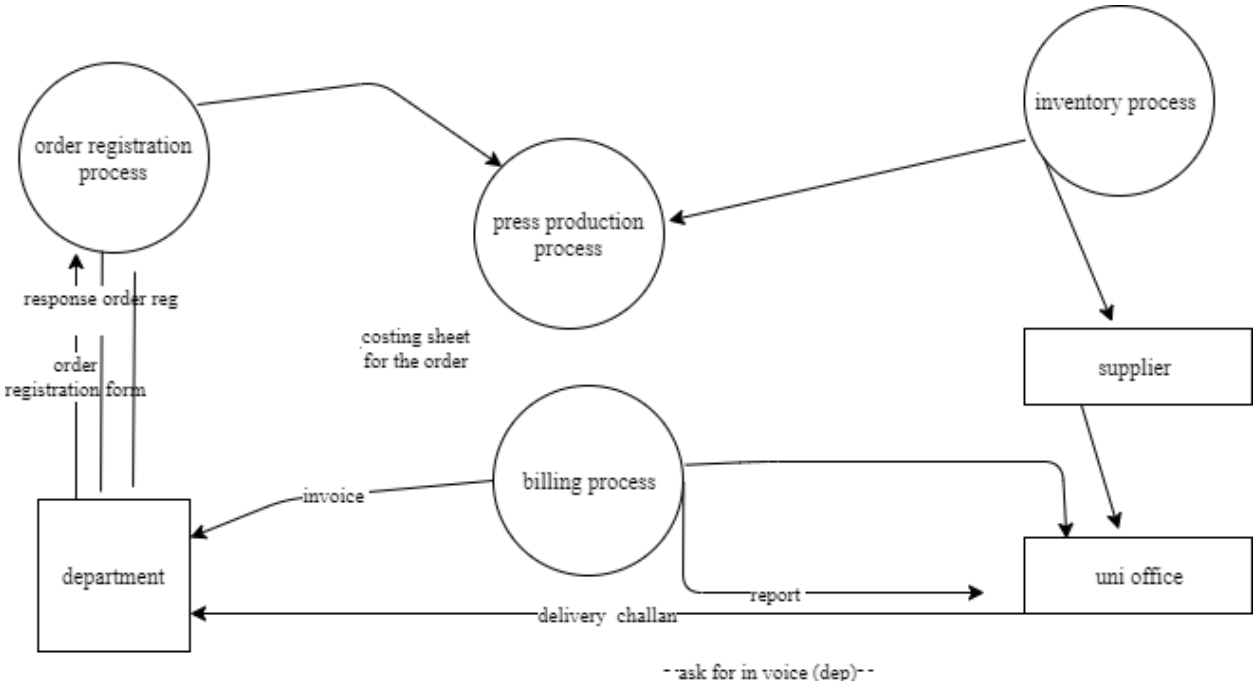
Q.1.1: Draw a Context diagram for INU Printing Press?

Ans:



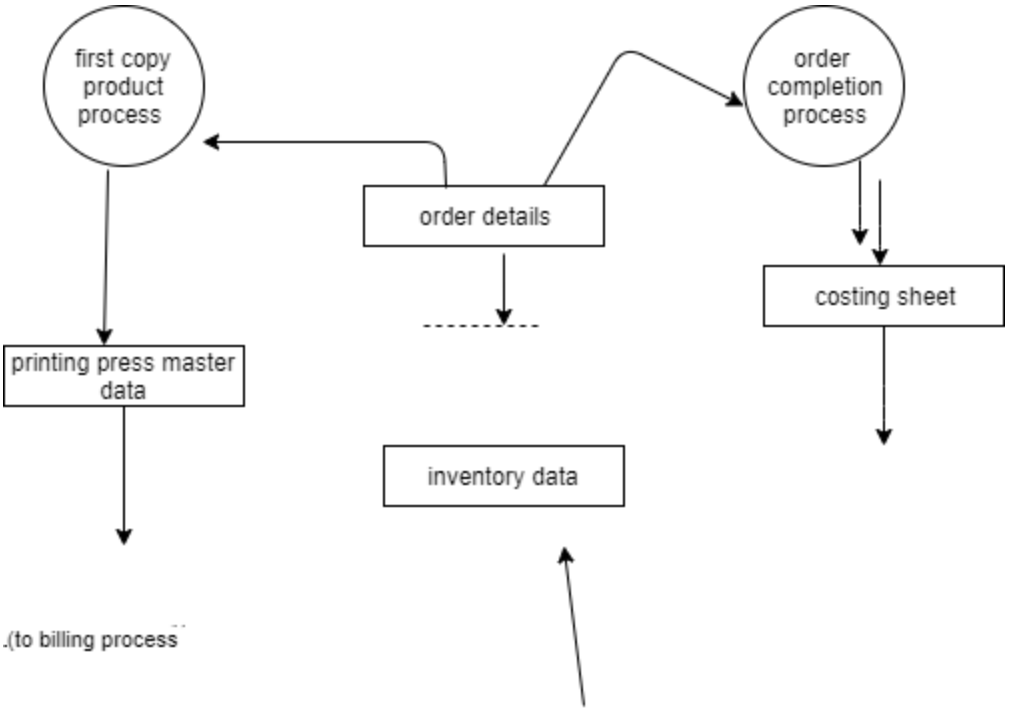
Q.1.2: Draw a Level 1 Data Flow Diagram (DFD) for the above case study?

Ans:



Q.1.3: Draw a Level 2 DFD for the Order Registration Process, Press Production Process, Inventory Process, and Billing Process?

Ans:



Q2 **:** Explain why testing can only detect the presence of errors, not their absence?

Answer:

Testing Can detect only the presence of errors, not their absence because the main goal of the testing is to observe the behavior of the particular software and to check whether it meets its requirements expectation or not. Testing is a part of broader process of Testing is software verification and validation. It consists of a set of activities, where the testes how to make the software behave anomalous in order to select or anomaly to be later fix Testing cannot demonstrate the faults other than specified in every circustone it is always possible that a test have overlooked could discuss further problem with the system

Q2 part 2: Define the following terms:

1. Unit Testing
2. System Testing
3. Black Box Testing
4. White Box Testing

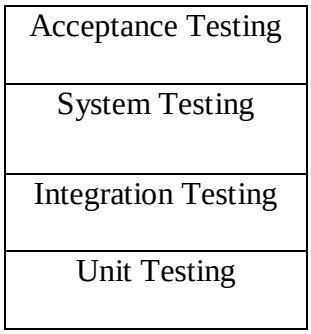
Ans:

1 Unit Testing:

Unit testing is defined as a type of software testing where Individual components of a software are tested. Unit testing of software Products carried out during the development of an application. An Individual component may be either individual function a procedure.

2 System Testing

System testing level of software complete and integrated software is tested.The purpose of this test is to evaluate the system's compliance with the Specified requirements.



3 Black Box Testing:

Black box testing is a method of software testing that examines the functionality of an application without peering Into Hs internal Structures or workings. This method of test be applied virtually to every level of Software testing, unit, integration, system and acceptance.

4 White Box Testing:

White box testing Also known as clear box testing glass box testing transparent box testing Code based testing or Structural testing) Is a software testing method in which the internal Structure design implementation of item being tested s known to the tester.

Question 3:

Q.3.1: Briefly describe the three main types of software maintenance. Why is it sometimes difficult to distinguish between them?

Ans:

1 Fault Repairs:

Coding errors are usually relatively cheap to correct designs errors are more expensive as they may involve rewriting several program components Requirements Errors are the most expensive to repair because of the expensive System redesign which be necessary

2 Environmental Adaptations:

This type of maintaince is required when someone aspects of the system's environment such as hardware , the platform operating system or other support software changes the application System must be modified it adopt to cope with the environmental changes.

3 Functionality Additions:

This type of maintenance is necessary when the System requirements change in response to organizational business change. The scale of the changes required to the software often much greater than for the other types of maintenance.

Why is difficult to distinguish between the types of maintenance.

In practice, there is not clear cut distinction between these types of maintenance, when the system adapt to new environment then add functionality to take advantage of new environment is functionality to take advantage of new environmental features Of software faults are often exposed because user use the system in unanticipated ways. These types of reorganized but gives them different person names.

“Corrective maintenance” is universally used to refer to maintaince for “Fault Repair”

"Adaptive maintenance “Sometimes mean of adopting to new environment and sometime mean adopting the software to new requirement.

“Perfective maintenance “sometime means Perfect the software by implementing new requirements, in other cases it means maintaining the functional of the system but improving its structure and performance.

Q.3.2: What are the principal factors that affect the costs of system reengineering? Also briefly explain the reengineering process with the help of diagram?

Ans:

System Reengineering:

Software re-engineering is the examination of a System to reconstitute it in new form. The principles of Re-Engineering when applied to the software development process is called software re-engineering or System re-engineering it affects positive at software cost quality service to the customer and speed of delivery In System Re-Engineering are improving the software to make it more efficient and effective

Re Engineering Cast factors:

1. The quality of the software to be re-engineered
2 The tool support availability for engineering.
3 The availability of expert staff for Re-engineering.