Tutorial 2

1. Incremental model and Prototyping model are two commonly used process models in software projects.

   a. Discuss a scenario that is suitable or useful to adopt the prototyping model.

   - Unclear requirement
   - Client/user facing difficulty to express what they actually want
   - Prototype can be quickly developed and present to user in graphical form to elicit the requirement gathering process

   b. Explain the process involved in incremental software process model.

   - System can be divided and developed increment-by-increment.
   - Core function of the system developed within a short time span and deliver to user to use
   - Sub function to be develop in second increment and so on

   c. Why the incremental process model is considered by many IT professionals to be the best approach to software development in the current software industry?

   - Useful if less staff
   - Can be planned to manage technical risks (hardware for wireless ordering, eg. Tablets, can be prepared on the latter increment)
   - Useful components (functions/features) can be developed in short time and used by the customer in the first version (customer satisfaction

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2. You as an IT manager of Cozzway Direct Selling Sdn. Bhd. are required to develop an online system which will provide services for its distributors and customers. Among other services, the system should allow users to view product and promotion details, register as a distributor, make orders and payments, track order status, check on distributor's points accumulated and perform redemption based on points entitlement.

    The distributors and customers of this company basically come from all parts of Malaysia with different education backgrounds, level of computer knowledge as well as preference of language. Currently, the IT department consists of three staff under your supervision, i.e. one systems analyst and two programmers. This could be a challenging project as it concerns a new area that your team has not ventured into before. The requirements gathered were clear and could be modularized easily. The top management requires that the new online system be completed within three months.

    Recommend, with explanation, an appropriate software process model to complete the project. Justify your recommendation. You may state any relevant assumptions to support your answer.

Incremental
- Requirements gathered were clear
- Could be modularized easily
- Three staff under

Assumption - top management increase project duration

RAD
- Requirements gathered were clear
- Could be modularized easily
- New online system be completed within three months

Assumption - top management increase staff (manpower)

3. Highlight the distinct feature(s) and suggest a scenario where **Spiral** model is suitable to be adopted.

Spiral
- high risk project
- lost of human life / big amount of money if the project failure

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4.   JC grocery is a mid-sized family business that operates since 30 years ago. The main operations in the grocery store, i.e., stock in and stock out, are still performed manually. To ease the daily operations, the owner of JC grocery wants to computerize the stock in and stock out operations in the stores. In addition, he also wants to enable online-ordering services to the clients. Nevertheless, the owner does not have any background or knowledge in computerized and online systems.

If you are the project manager of a software solution company, analyze the description above and suggest the most suitable process model to be used in case study above. Justify your suggestion. You may state any assumptions in supporting your justifications.

Prototype
- Owner does not have any background or knowledge in computerized and online systems, he may find it difficult to express the requirements. Therefore, the prototype will elicit the requirement gathering process.

5.   Discuss 3 main differences between Plan-Driven Development and Agile Software Development.

Agile Approach	Plan-Driven Approach
Consider design and implementation to be the central activities. Requirements elicitation and testing into design and implementation.	Identifies separate stages in the software process with outputs associated with each stage.
Iteration occurs across activities	Iteration occurs within activities
Might produce some design documentation.	Support incremental development and delivery. Thus, documents are produced in each stage.

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6.   Delicious restaurant is a new restaurant in town. The restaurant is having a soft-launch in less than a month time. To further increase the popularity of the restaurant, Delicious restaurant has decided to have a website which introduces the menu and soft-launch promotion to the customers. After that, Delicious restaurant also wants to have an online system to enable table-booking services to the customers. In the future, Delicious restaurant also wishes to extend their online system to provide wireless ordering and delivering services.

If you are the project manager of a software solution company, analyze the description above and suggest the most suitable process model to be used in the above case study. Justify your answer. You may state any assumptions in supporting your justifications.

Incremental

- **Core function** of the system to be developed within a short time span and delivered to users to use. Website which introduces the menu and soft-launch promotion to the customers to be developed and delivered in less than a month's time.

- **Second instrumental develop** an online system to enable table-booking services to the customers

- **Later third incremental** online system to provide wireless ordering and delivering services. Hardware risk could be managed if any.

7.   With the aid of examples, discuss any 5 principles of Agile Software Development.

1. Customer satisfaction by rapid delivery of useful software

2. Welcome changing requirements, even late in development

3. Working software is delivered frequently (weeks rather than months)

4. Working software is the principal measure of progress

5. Sustainable development, able to maintain a constant pace

6. Self-organizing teams

7. Regular adaptation to changing circumstances