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**a)** The most appropriate generic software process model used for the development of a complex real – time system whose requirements can be relatively easily identified and are stable is the classical waterfall model. This is because the project is a complex one and It is also used because of its formal transformation between the different development stages.

**b)** For the case of a web – site for a local library, the evolutionary model will be implemented because the user gets the chance to experiment the partially developed system.

**C)** An order processing system with a web – site for a local business will require anagile model because it reduces the total development time of the whole project since it has to deal with the handling change requests from customers during project development and high cost.

**2) The Classical Waterfall Model**

The classical waterfall model is basic software development life cycle model. It is very simple but idealistic. This model was popular in the early days but is no longer used nowadays. It is still important toady because all other software development life cycles are based on the classical waterfall model. The classical waterfall model is divided into various phases and one phase only goes into implementation after the previous phase has already been accomplished. The different sequential phases include; the feasibility phase, the requirement analysis and specification phase, the design phase, coding and unit testing phase, integration and system testing, and the maintenance phase.

**Advantages of the Classical Waterfall Model**

This is a very simple model and so can be considered as the basis for other software development life cycle models. Below are some major advantages of this model.

* This model is very simple and easy to understand.
* Phases in this model are processed one at a time.
* Each stage in the model is clearly defined.
* This model has very clear and well understood milestone.
* This project works well for smaller projects and projects where requirements are well understood.

**Drawbacks of the Classical Waterfall Model**

The classical waterfall model suffers from various shortcomings, basically we can’t use it in real projects, but we use other software development life cycles which are based on the waterfall model. Below are some of its drawbacks.

* **No overlapping of phases:**

This model recommends that the new phase can start only after the completion of the previous phase. But in real projects, this can’t be maintained. To increase the efficiency and reduce the cost, phases may overlap.

* **Difficult to accommodate change request:**

This model assumes that all the customer requirements can be completely and correctly defined at the beginning of the project, but customers’ requirements keep on changing with time. It is difficult to accommodate any change request after the requirements specification phase is complete.

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