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Practical 2

AIM:- Exploring and understanding TinyOS computational concepts :- Events, Commands & Component and Task.

1) nesC model
2) nesC Components

★ TinyOS :-

- TinyOS is an open-source, flexible and Application-Specific Operating System for Wireless Sensor Networks (WSN).
- WSNs consists of large number of tiny and low-power nodes, each of which executes simultaneous and reactive programs that must work with strict memory and power constraints. TinyOS meets these challenges.
- TinyOS was designed specifically for WSNs. It introduces a structured event-driven execution model and a component-based software design.

* Sailent features of TinyOS are :-

1) Has Event-based concurrency model.
2) Component-based Architecture.
3) Main components of TinyOS are tasks, events, commands & data.
4) Event-driven execution model.
5) Selected components are linked into program at compile time.
6) Written in nesC and C.

★ TinyOS with nesC :-

- TinyOS is written in nesC and C.
- Basic unit of code is component, which ~~consist of~~ does the following :-
  1) Process Commands
  2) Throws Events
  3) Has Frames for storing state
  4) Performs Tasks

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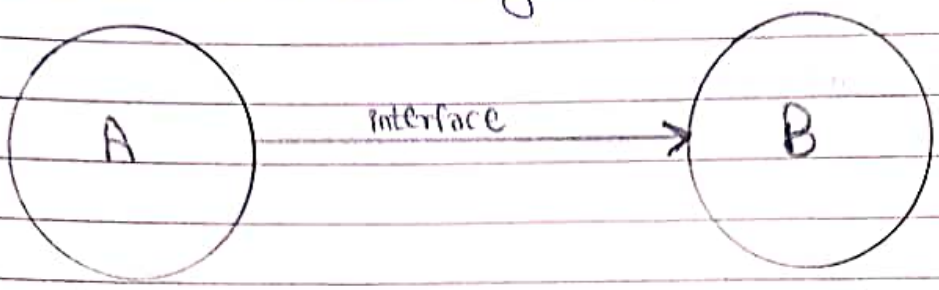
- Components are wired by interfaces.
- The basic unit to wiring components are configurations.



- Components define two scopes:-
  1) Their specification which contains the names of their interfaces.
  2) Scope for their implementation.
  3) ~~A comp~~
- A component Provides and Uses Interfaces.
- Interfaces are set of commands, which are functions to be implemented by interface provider, and a set of events, which are functions to be implemented by interface's user.