Special Constraints and Requirements of Mobile O/S

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Special Constraints and Requirements of Mobile O/S

❖ **What we need to consider?**
  ➢ Power
  ➢ Frequent low power sleep mode.
  ➢ Mobile need to be booted much faster.
  ➢ Small size kernel.

Special Constraints and Requirements of Mobile O/S

❖ **Special Constraints**
  ➢ Limited Memory.
  ➢ Limited Screen Size.
  ➢ Miniature keyboard.
  ➢ Limited processing power.
  ➢ Limited battery power.
  ➢ Limited and fluctuating bandwidth of the wireless medium.

Special Constraints and Requirements of Mobile O/S

❖ **Limited memory**
  ➢ Less amount and both storage and volatile memory.
  ➢ OS must small as much as possible.
  ➢ Provide rich user functionalities when user demands.
  ➢ Size of the kernel plays very vital role in this.
❖ **Limited Screen Size**
  ➢ Size of mobile must be small and portable screen size is important.
  ➢ New innovative user interface is needed.
  ➢ Switching between menu and iconic display.

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- ❖ **Miniature KeyBoard**
  - ➢ Use of small size keyboard and stylus.
  - ➢ Typing is too difficult for large document creation
    - ■ We need auto completion option.
    - ■ Free form writing and handwriting recognition.
- ❖ **Limited Processing Power**
  - ➢ ARM - Based processor.
  - ➢ It is energy efficient, cheaper, powerful.
  - ➢ It is slower processor.
  - ➢ Size of on-chip memory is restricted.
  - ➢ So the development is carried out outside.

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❖ **Limited Battery Power**
  ➢ Mobile need to lightweight and portable so we need to use slim batteries.
  ➢ No frequent recharges.
  ➢ OS needs to be computationally efficient and minimum power consumption.
  ➢ Putting processor and display into sleep mode when it is not needed.

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❖ **Limited and Fluctuating bandwidth of the wireless medium**
  ➢ Mobile need to run complex protocols caused by mobility and wireless medium.
  ➢ Medium is directly prone to noise leads to bit-errors rates.
  ➢ Bandwidth may fluctuate due to noise, mobility of the node and obstacles.
  ➢ This show up with short-term fades.
  ➢ Longer disconnections due to handoffs.
  ➢ Uninterrupted communication requires special support like data caching, pre-fetching and integration.

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❖ **Special Requirements**
  - ➢ Support for specific communication protocols.
  - ➢ Support for variety of input mechanisms.
  - ➢ Compliance with open standards.
  - ➢ Extensive library support.