

# **Appliance Scheduling in Solar Decathlon Home**

## **CS 620 Course Project**

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# Goal of the Project

- Control the peak power consumption (below 3KW).
- Try to shift power consumption from penalty zone (4 P.M. to 10 P.M.).
- Provide implementation of algorithm which can run on Portable device (Sending and receiving on/off signal from/to different appliances).
- Using multiple run of simulation based on probabilistic modal, provide expected optimal schedule according to tolerance level of user.
- Evaluate proposed system/algorithm based on maximum delay, total power consumption in penalty zone etc.

# Technical problems solved

- Schedule low priority home appliances to reduce the peak power consumption.
- Implementation of reversible fair scheduling algorithm.
- Add appliance phase level scheduling to utilize complete available power in non penalty zone.
- Shift appliances from penalty zone according to tolerance level of user set by himself.
- Use pull logic between 4 to 7 P.M. for shift the appliance before 4 P.M.
- Use push logic between 7 to 10 P.M. for shift the appliance after 10 P.M.

## Work promised originally and work achieved so far

Work	Promised	Delivered
Scheduling of appliance to reduce peak power	Y	Y
Handling of change of consumption due to appliance mode change.	N	Y
Propose a good schedule to user	Y	Y
Algorithm implementation that is deployable on Portable device	Y	WIP
Receive/send on/off/pause/resume/warning signal from/to different appliances using TCP-IP.	Y	Y
Verification of algorithm with probabilistic simulation model	N	Y

## **Given more time what more can you accomplish**

- Written user guide for solar decathlon group.
- Handover of the system.
- Complete deployment of the system on Portable device.  
(Dependent on solar decathlon team)



THANK YOU