

MICROAPPS

EVENT OBJECTIVE:

The theme of this event is “**Smart City**”, a program launched by our *Prime Minister Narendra Modi* and further adding to it and making “**Smart & Green City**”. The objective of this event is to test the knowledge of the students about microcontrollers, to think innovatively for realizing “**Smart & Green City**” and to explain and design an optimized product using **Texas Instruments’ MSP430G2553** as the microcontroller and implementation of that design practically considering real life constraints.

EVENT STRUCTURE:

Round 1: Written Test consisting of subjective as well as objective questions based on the basic theory of 8051, ADC, Timer IC etc. Other details like marking scheme, time will be disclosed at the time of event.

Round 2: The top teams from Round 1 will advance to this round. Before this round starts, a brief description of MSP430G2553 microcontroller will be given. In this round the ‘**C**’ coding skills of the teams will be tested along with the IDE i.e. CCS which will be introduced before. Teams will have access to internet facilities. More details of the problem statement and pattern of the evaluation will be disclosed at the time event.

Round 3: Finalists selected from Round 2 will be offered a problem statement related to “**Smart City**” initiative. Finalists are required to analyze this statement and come up with an innovative and optimized design solution within the stipulated time. The design should include both hardware and software components. Once the teams have designed their products, the Implementation Round will commence. All the material required for implementation will be provided by us. After the implementation, teams will be interviewed and asked for how their design is green or how can it further be made green. Evaluation procedure will be disclosed at the beginning of the round.

RULES:

1. The event is open to all undergraduate students.
2. Participants are expected to give their correct contact details, so as to inform them about the event updates.

3. Participants have to bring their College ID cards and the receipt of registration during reporting.
4. Only “**C**” language can be used. The IDE to be used is “**CCS**” which will be taught prior to the round in which it is required.
5. Decisions of the judges and organizers will be final and binding to all.
6. Rules may be changed without prior intimation. Participants are requested to check the website (www.mind-spark.org) regularly for updates.

TEAM AND FEE STRUCTURE:

- Team size : Maximum 2 participants per team.
Registration Fee : ₹50/- per team.

FAQs:

- Q. Which micro-controller can be used for designing?
A. One out of TI’s MSP430 families’ will be used for designing.
- Q. Which languages can be used for programming the microcontroller?
A. The microcontroller can be programmed with “**C**” language.
- Q. Which IDE can be used to program the microcontroller?
A. IDE to be used is “**CCS**”.
- Q. On which interface will the implementation take place?
A. The participants can be asked to implement the system either on breadboard or on a General Purpose PCB. In any case, adequate time and materials shall be provided to the participants.
- Q. How many participants can a team comprise of?
A. A team can comprise of a maximum 3 participants. A single participant can compete in the event but we suggest that a team of at least two will have a better chance of winning the event.
- Q. Will the teams have access to MSP430 datasheet and user guide during design?
A. The teams shall have access to MSP430 datasheet during design. The teams shall also have an access to datasheets of other required components upon request.
- Q. On what basis will a team win the event?
A. The team with correct, optimized and most importantly **innovative** designs, completed in a time, less as compared to that taken by their competitors, would qualify for further rounds.
- Q. What is the level of basic knowledge required to compete in the event?

A. The basic objective of the event is to design and implement a microcontroller based product. It therefore follows that the participant needs to have a basic understanding of microcontrollers. Also, several other components such as ADCs, 7-segment displays are generally interfaced with a controller and the participant needs to have basic knowledge of the same.

Q. Is it possible to participate in other events of MindSpark?

A. You are free to participate in as many events as you want. However, you have to manage your own schedule.

EVENT HEADS:

Bhavesh Rathod	:	+91 84110 21777
Soniya Malwadkar	:	+91 77091 11586
Email ID	:	microapps@mind-spark.org