

KHULNA UNIVERSITY

Course Title: Microprocessors and
Microcontrollers Laboratory/Project

Course No: CSE 3112
Coin Based Mobile Charging System Using Arduino UNO
Project Proposal



SUBMITTED BY :	SUBMITTED TO :
S M Musfikur Rahman Student ID: 1900224 Mobile: 01768-764096 Computer Science and Engineering Discipline Khulna University, Khulna	Atanu Shome Assistant Professor Computer Science and Engineering Discipline Khulna University, Khulna.
Masud Karim Omi Student ID: 200220 Mobile: 01911-294223 Computer Science and Engineering Discipline Khulna University, Khulna	
Utsa Debnath Student ID: 200242 Mobile: 01628-366325 Computer Science and Engineering Discipline Khulna University, Khulna	

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PROJECT DESCRIPTION

PROJECT TITLE:

Coin Based Mobile Charging System Using Arduino UNO

INTRODUCTION :

Mobile phones have become an essential part of our lives. However, with the increasing number of features on modern smartphones, keeping them charged has become a significant challenge. Such as sudden call disconnections due to the low battery can be frustrating and in travelling areas and emergencies, the situation becomes worse. To address this issue, a prototype for a coin-based mobile battery charging system has been developed, providing a practical solution for charging mobile phones.

FEATURE LIST :

- It can charge mobile phones for a particular amount of time on inserting a coin.
- It can charge the mobile phone at any place.
- Low power consumption.
- User-friendly and easy to operate.
- User-friendly and cost-effective.
- Only one device can be charged simultaneously.

WORKING PROCEDURE :

- First player has to plug in the switch. A welcome message is displayed to the user on startup " Welcome to coin-based mobile charging system."
- The display also shows "Please insert a coin".
- The user now has the option to insert as many coins as he wants but the coin acceptor only detects 5 taka coin.
- Coin acceptor detects the coin and sends the signal to the port selector through Arduino and shows the message in the display "Select port".
- There are 4 ports for selection with 4 respective charging modules.
- After selecting the port the charging will start.
- The mobile will charge for a predefined time. After the charging time has elapsed, the charging will automatically stop and tell the user to insert a coin.

USED SENSOR AND COMPONENTS :

SENSOR :

No sensor was used in this project.

HARDWARE :

The hardware required for the project is as follows:

- ❖ Arduino UNO
- ❖ 16x2 LCD Display
- ❖ I2C Module
- ❖ 4x1 Relay Module
- ❖ Limit Switch
- ❖ 12-volt Power Supply Adapter
- ❖ Push Button
- ❖ LM2596 Buck Converter
- ❖ Power Bank Circuit
- ❖ Jump Wires

SOFTWARE :

The software required for the project is as follows:

- ❖ Arduino IDE
- ❖ Proteus - designing software.
- ❖ Embedded C++

PROJECT WORKFLOW

- Component Setup
- Component Testing
- Environment Setup For Coding
- Burned The Code
- Final System Setup

FULL SETUP :



Fig: Coin based mobile charging system.

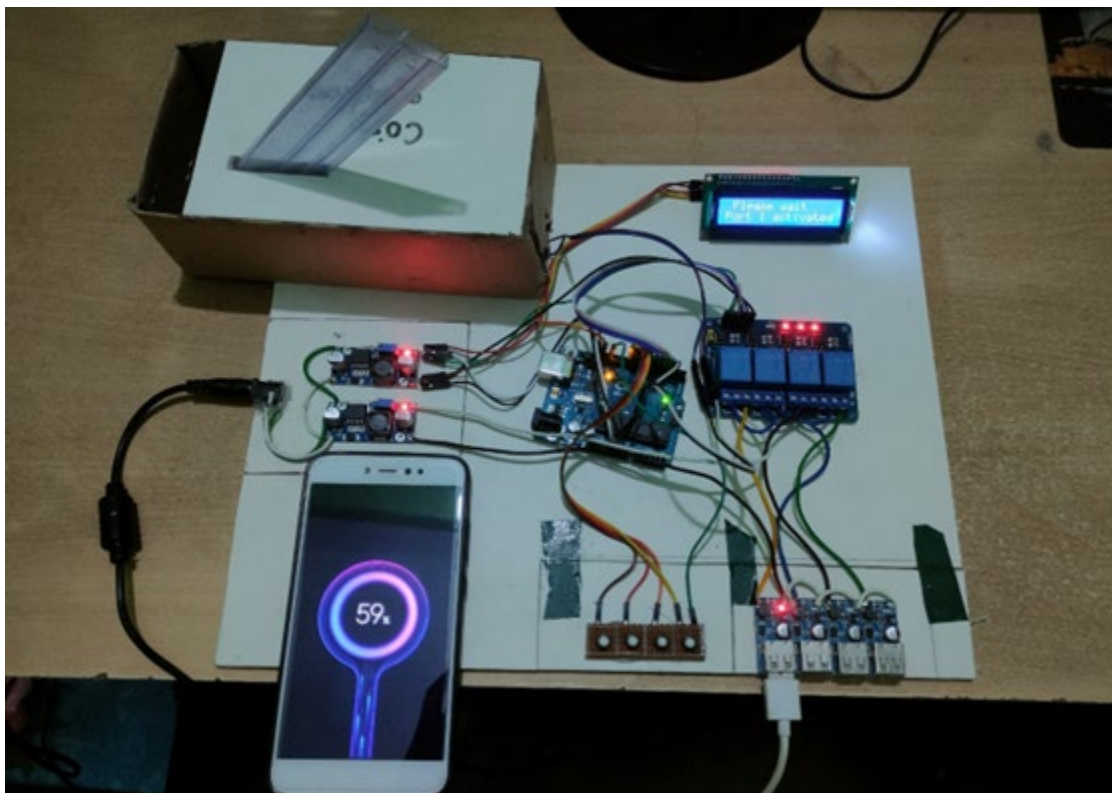


Fig: Coin based mobile charging system.