

**PROJECT FILE**  
**On**  
**PRESENT SCENARIO OF ACADEMIC LABS**

Submitted in the partial fulfillment of the requirements for  
1<sup>st</sup>-semester curriculum of the degree of  
BACHELOR OF TECHNOLOGY  
in  
COMPUTER SCIENCE AND ENGINEERING DEPARTMENT  
Of  
CHANDIGARH UNIVERSITY  
GHARUAN, MOHALI, PUNJAB

**SUBMITTED TO**

Prabhjot kaur

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**SUBMITTED BY**

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1st semester

## **ACKNOWLEDGEMENT**

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

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My thanks and appreciations also go to my colleague in developing the project and people who have willingly helped me out with their abilities.

Deepak Shandilya

Yash Mahajan

Suvigya Yadav

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Discuss briefly related work (literature).
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Discuss the characteristics of the dataset that you have used to validate your proposed model.
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Discuss your proposed system with the help of pseudo-code and flow diagrams.
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Discuss the formulas of performance evaluation metrics that you have used to evaluate your model,
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5. Conclusion and future work
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It contains the project source code

# 1. Introduction

## 1.1 Motivation of the study

We further inspected the root cause for the poor LAB situations in India. Among various reasons, we found that the utmost reason is, Absence of a dedicated platform that provides lab equipment, not only in the urban area but also in rural areas.

India is a developing economy. The absence of a marketplace provides a chance to retailers to sell the product at high prices. The absence of a marketplace also limits the possibilities for retailers. They end up selling products in a particular region only. The majority of the schools can't afford labs at retailers' prices.

## 1.2 Problem Statement

75% of schools in India lack fully equipped science laboratories. In the survey of UDISE & NUEPA, out of 2.4 lakh schools, 58% of schools don't have requisite labs. The biggest drawback of the Indian education system is the lack of practical knowledge. This is the major cause that curbs interest in Research and developments for future innovations. Less than 0.5% of the total students of India enroll in R&D, this is where insight and inspiration are translated into creative and impactful solutions. India stands at 46th rank out of 132 economies in the Global Innovation Index (GII) 2021. Out of 138 crores Indians, 65.1% live in rural areas, where only 28% of schools have computer labs and 9% have an Internet connection. Only 0.7% of India's GDP is spent on R&D, which is very little compared to other countries.

## 1.3 Objectives

For a better education system, we are introducing a dedicated Web platform that will facilitate schools, colleges, and organizations to have labs at cheaper prices, and it will also allow retailers and lab equipment sellers to sell their products on a large scale on our e-commerce website. This web platform will connect retailers and sellers to consumers. Also, it will provide a marketplace for lab equipment.

## 1.4 Contributions

This project is a combined effort of Deepak, Yash, Suvigya. We have enlightened the omitted factor of the education system that is practical knowledge. This idea has the power to bring a revolutionary change to our country.

## **2. Background work**

Research has shown that students who engage in well-designed laboratory experiences develop problem-solving and critical-thinking skills, as well as gain exposure to reactions, materials, and equipment in a lab setting. Sustained investments in hands-on experiences help inspire students to further their education and prepare them for high-technology careers by fostering skills sought by potential employers.

For a better education system, we are introducing a dedicated Web platform that will facilitate schools, colleges, and organizations to have labs at cheaper prices, and it will also allow retailers and lab equipment sellers to sell their products on a large scale on our e-commerce website. This web platform will connect retailers and sellers to consumers. Also, it will provide a marketplace for lab equipment

Django will be considered for the framework. Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. The reason behind considering Django is- 1) ridiculously fast 2) reassuringly secure 3) exceedingly scalable

This platform will increase the availability of equipment and it will connect organizations, schools, colleges to sellers. These opportunities will guide students to be more skillful and innovative. It will shift the education system from mugging up the information to practical experiences. If executed correctly It will lead to a drastic change in our research and development field. The boom in practical knowledge will lead to innovation and eventually, India's Global Innovation Index will improve.

### 3. Proposed work

#### 3.1 Dataset

<b>STATE</b>	<b>Fully equipped Labs (schools)</b>
<b>Karnataka</b>	<b>6%</b>
<b>Andhra Pradesh</b>	<b>13%</b>
<b>Assam</b>	<b>4%</b>
<b>West Bengal</b>	<b>6%</b>
<b>Punjab</b>	<b>9%</b>

A laboratory is always considered as a relevant and essential part so far as the teaching of Science and Computer is concerned. A laboratory is not a contest whose object is to get the “right answer”, but the purpose is to learn how to gain knowledge, how to observe, and to learn the meaning of what happens. Laboratories are a significant part of accelerating scientific advances and innovations. Laboratories are the equipped places for the experiment and research. It is a great place for the students to enhance their learning by understanding and applying the learned concepts of sciences.

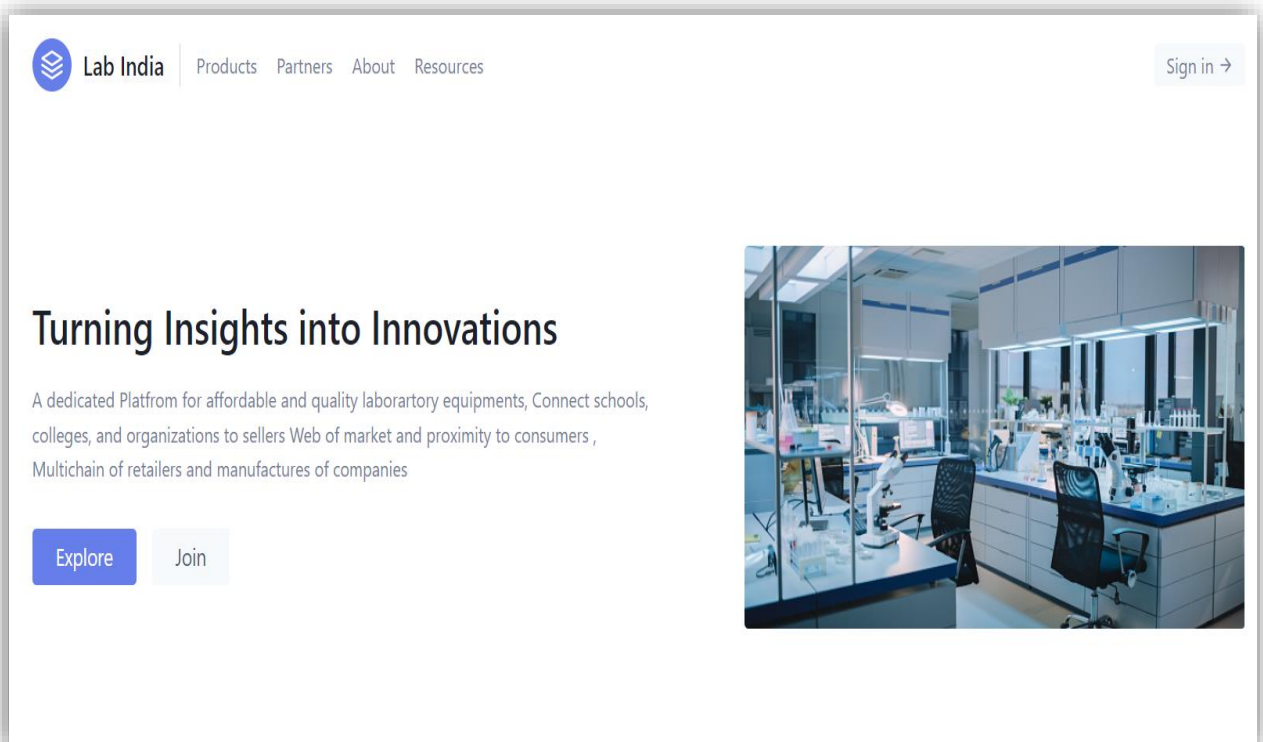
Well-designed laboratories not only make science experiments fun but also help students in achieving good academic results. Science experiments are vital for students as They are useful in understanding the theories and concepts of science that cannot be studied alone only by science textbooks. Every school should have physics chemistry biology and computer science laboratories to achieve the holistic development of students. Hands-on laboratory science

experiences are critical to the learning process across all areas of study, beginning with kindergarten and continuing through post-secondary education.

More than 15 Lakhs schools have become the hub of 25 crore students to attain knowledge, not only theoretical but practical. Applied subjective knowledge has magnified the overall development of the human brain. It provides better understanding, grasping, and longer retention of the concepts.

### 3.2 Proposed system

➤ *A glance at the Homepage of*  
**labindia.com**



## ➤ *A glance at the shopping page*



optics

**Microscope**

Rs. 5,999



measurement

**Screw Gauge**

Rs. 399



measurement

**Vernier Caliper**

Rs. 159



electrical

**Potentiometer**

Rs. 40



shutterstock.com - 423029450

vessels

**Beakers Set**

Rs. 299



mechanical

**Pendulum**

Rs. 599



electrical

**Breadboard KIT**

Rs. 899



electrical

**Van-de-graaf generator**

Rs. 5,999



optics

**Microscope**

Rs. 5,999



## *A glance at the Feedback page*

### Contact Us

We are here to help you.

Name

Email





Message

Submit

---

[labindia.com](http://labindia.com)

Chandigarh University  
Gharaun 144013



## **4. Results and Discussions**

We have been working on your project for the best results. we have developed a simple e-commerce website that is yet to be hosted on a server after we will complete most of our thought ideas. Our website is still progressing and we are designing it user-friendly, easy to access, and use.

We will be comparing different rates of equipment all around India to give the best affordable prices of lab equipment on labindia. we will assure to provide best quality products from trusted retailers and manufacturers product.

We have also made a section to get in contact with our la India team for the product deal, getting information from the school, colleges as well as manufactures and retailers. this is a good way to get feedback directly from the users. it will also help us to expand our network. we will be working hard on improving through the suggestion given by the user. this can be beneficial if in case some products are not available on our website we can immediately rectify and add that specific item.

## **5. Conclusion and Future work**

This project holds the potential to bring a bright change to the education system. This platform will increase the availability of equipment and it will connect organizations, schools, colleges to sellers. These opportunities will guide students to be more skillful and innovative. It will shift the education system from mugging up the information to practical experiences. If executed correctly It will lead to a drastic change in our research and development field. The boom in practical knowledge will lead to innovation and eventually, India's Global Innovation Index will improve.

## 6. References

<https://cen.acs.org/articles/96/web/2018/03/Scientists-Indias-government-labs-struggle.html>

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[https://www.thehindubusinessline.com/business-tech/boosting-indias-science-budget/article64557824.ece#:~:text=India's%20Gross%20expenditure%20on%20R%26D,b\)%20in%202018%2D19.](https://www.thehindubusinessline.com/business-tech/boosting-indias-science-budget/article64557824.ece#:~:text=India's%20Gross%20expenditure%20on%20R%26D,b)%20in%202018%2D19.)

[www.google.com](http://www.google.com)

## 7. Appendix

Source link: <http://127.0.0.1:5500/index.html>

Source code:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link href="https://unpkg.com/tailwindcss@^1.0/dist/tailwind.min.css"
rel="stylesheet"
    <title>Document</title>
  </head>
  <body><header class="text-gray-600 body-font">
```

```

        <div class="container mx-auto flex flex-wrap p-5 flex-col md:flex-row
items-center">
            <a class="flex title-font font-medium items-center text-gray-900 mb-
4 md:mb-0">
                <svg xmlns="http://www.w3.org/2000/svg" fill="none"
stroke="currentColor" stroke-linecap="round" stroke-linejoin="round" stroke-
width="2" class="w-10 h-10 text-white p-2 bg-indigo-500 rounded-full"
viewBox="0 0 24 24">
                    <path d="M12 2L2 7 10 5 10 5-10-5zM2 17 10 15 10 15-2 17"
5"></path>
                </svg>
                <span class="ml-3 text-xl">Lab India</span>
            </a>
            <nav class="md:mr-auto md:ml-4 md:py-1 md:pl-4 md:border-l
md:border-gray-400 flex flex-wrap items-center text-base justify-center">
                <a class="mr-5 hover:text-gray-900">Products</a>
                <a class="mr-5 hover:text-gray-900">Partners</a>
                <a class="mr-5 hover:text-gray-900">About</a>
                <a class="mr-5 hover:text-gray-900">Resources</a>
            </nav>
            <button class="inline-flex items-center bg-gray-100 border-0 py-1
px-3 focus:outline-none hover:bg-gray-200 rounded text-base mt-4 md:mt-0">Sign
in
                <svg fill="none" stroke="currentColor" stroke-linecap="round"
stroke-linejoin="round" stroke-width="2" class="w-4 h-4 ml-1" viewBox="0 0 24
24">
                    <path d="M5 12h14M12 5l7 7 7-7" ></path>
                </svg>
            </button>
        </div>
    </header>
    <section class="text-gray-600 body-font">
        <div class="container mx-auto flex px-5 py-24 md:flex-row flex-col
items-center">
            <div class="lg:flex-grow md:w-1/2 lg:pr-24 md:pr-16 flex flex-col
md:items-start md:text-left mb-16 md:mb-0 items-center text-center">
                <h1 class="title-font sm:text-4xl text-3xl mb-4 font-medium text-
gray-900">Turning Insights into Innovations

                <br class="hidden lg:inline-block">
                </h1>
                <p class="mb-8 leading-relaxed">A dedicated Platfrom for
affordable and quality laborartory equipments, Connect schools, colleges, and
organizations to sellers
                Web of market and proximity to consumers , Multichain of
retailers and manufactures of companies

```

```

    </p>
    <div class="flex justify-center">
      <button class="inline-flex text-white bg-indigo-500 border-0 py-
2 px-6 focus:outline-none hover:bg-indigo-600 rounded text-
lg">Explore</button>
      <button class="ml-4 inline-flex text-gray-700 bg-gray-100
border-0 py-2 px-6 focus:outline-none hover:bg-gray-200 rounded text-lg">Join
</button>
    </div>
  </div>
  <div class="lg:max-w-lg lg:w-full md:w-1/2 w-5/6">
    
  </div>
</div>
</section>
<hr>
<section class="text-gray-600 body-font">
  <div class="container px-5 py-24 mx-auto">
    <div class="flex flex-wrap -m-4">
      <div class="lg:w-1/4 md:w-1/2 p-4 w-full">
        <a class="block relative h-48 rounded overflow-hidden">
          
        </a>
        <div class="mt-4">
          <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">optics</h3>
          <h2 class="text-gray-900 title-font text-lg font-
medium">Microscope</h2>
          <p class="mt-1">Rs. 5,999</p>
        </div>
      </div>
      <div class="lg:w-1/4 md:w-1/2 p-4 w-full">
        <a class="block relative h-48 rounded overflow-hidden">
          
        </a>
        <div class="mt-4">
          <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">measurement</h3>
          <h2 class="text-gray-900 title-font text-lg font-medium">Screw
Gauge</h2>

```

```

        <p class="mt-1">Rs. 399</p>
    </div>
</div>
<div class="lg:w-1/4 md:w-1/2 p-4 w-full">
    <a class="block relative h-48 rounded overflow-hidden">
        
    </a>
    <div class="mt-4">
        <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">measurement</h3>
        <h2 class="text-gray-900 title-font text-lg font-
medium">Vernier Caliper</h2>
        <p class="mt-1">Rs. 159</p>
    </div>
</div>
<div class="lg:w-1/4 md:w-1/2 p-4 w-full">
    <a class="block relative h-48 rounded overflow-hidden">
        
    </a>
    <div class="mt-4">
        <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">electrical</h3>
        <h2 class="text-gray-900 title-font text-lg font-
medium">Potentiometer</h2>
        <p class="mt-1">Rs. 40</p>
    </div>
</div>
<div class="lg:w-1/4 md:w-1/2 p-4 w-full">
    <a class="block relative h-48 rounded overflow-hidden">
        
    </a>
    <div class="mt-4">
        <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">vessels</h3>
        <h2 class="text-gray-900 title-font text-lg font-
medium">Beakers Set</h2>
        <p class="mt-1">Rs. 299</p>
    </div>
</div>
<div class="lg:w-1/4 md:w-1/2 p-4 w-full">
    <a class="block relative h-48 rounded overflow-hidden">

```

```

        
    </a>
    <div class="mt-4">
        <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">mecchanical</h3>
        <h2 class="text-gray-900 title-font text-lg font-
medium">Pendulum</h2>
        <p class="mt-1">Rs. 599</p>
    </div>
</div>
<div class="lg:w-1/4 md:w-1/2 p-4 w-full">
    <a class="block relative h-48 rounded overflow-hidden">
        
    </a>
    <div class="mt-4">
        <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">electrical</h3>
        <h2 class="text-gray-900 title-font text-lg font-
medium">Breadboard KIT</h2>
        <p class="mt-1">Rs. 899</p>
    </div>
</div>
<div class="lg:w-1/4 md:w-1/2 p-4 w-full">
    <a class="block relative h-48 rounded overflow-hidden">
        
    </a>
    <div class="mt-4">
        <h3 class="text-gray-500 text-xs tracking-widest title-font
mb-1">electrical</h3>
        <h2 class="text-gray-900 title-font text-lg font-medium">Van-
de-graaf generator</h2>
        <p class="mt-1">Rs. 5,999</p>
    </div>
</div>
</div>
</div>
</section>
<hr>
<section class="text-gray-600 body-font relative">
<div class="container px-5 py-24 mx-auto">

```

```

<div class="flex flex-col text-center w-full mb-12">
  <h1 class="sm:text-3xl text-2xl font-medium title-font mb-4 text-gray-900">Contact Us</h1>
  <p class="lg:w-2/3 mx-auto leading-relaxed text-base">We are here to help you.</p>
</div>
<div class="lg:w-1/2 md:w-2/3 mx-auto">
  <div class="flex flex-wrap -m-2">
    <div class="p-2 w-1/2">
      <div class="relative">
        <label for="name" class="leading-7 text-sm text-gray-600">Name</label>
        <input type="text" id="name" name="name" class="w-full bg-gray-100 bg-opacity-50 rounded border border-gray-300 focus:border-indigo-500 focus:bg-white focus:ring-2 focus:ring-indigo-200 text-base outline-none text-gray-700 py-1 px-3 leading-8 transition-colors duration-200 ease-in-out">
      </div>
    </div>
    <div class="p-2 w-1/2">
      <div class="relative">
        <label for="email" class="leading-7 text-sm text-gray-600">Email</label>
        <input type="email" id="email" name="email" class="w-full bg-gray-100 bg-opacity-50 rounded border border-gray-300 focus:border-indigo-500 focus:bg-white focus:ring-2 focus:ring-indigo-200 text-base outline-none text-gray-700 py-1 px-3 leading-8 transition-colors duration-200 ease-in-out">
      </div>
    </div>
    <div class="p-2 w-full">
      <div class="relative">
        <label for="message" class="leading-7 text-sm text-gray-600">Message</label>
        <textarea id="message" name="message" class="w-full bg-gray-100 bg-opacity-50 rounded border border-gray-300 focus:border-indigo-500 focus:bg-white focus:ring-2 focus:ring-indigo-200 h-32 text-base outline-none text-gray-700 py-1 px-3 resize-none leading-6 transition-colors duration-200 ease-in-out"></textarea>
      </div>
    </div>
    <div class="p-2 w-full">
      <button class="flex mx-auto text-white bg-indigo-500 border-0 py-2 px-8 focus:outline-none hover:bg-indigo-600 rounded text-lg">Submit</button>
    </div>
    <div class="p-2 w-full pt-8 mt-8 border-t border-gray-200 text-center">
      <a class="text-indigo-500">labindia.com</a>
      <p class="leading-normal my-5">Chandigarh University
      <br>Gharaun 144013
    </div>
  </div>

```



```

    </p>
    <span class="inline-flex">
      <a class="text-gray-500">
        <svg fill="currentColor" stroke-linecap="round" stroke-
linejoin="round" stroke-width="2" class="w-5 h-5" viewBox="0 0 24 24">
          <path d="M18 2h-3a5 5 0 0-5 5v3H7v4h3v8h4v-8h3l1-4h-4V7a1 1 0
011-1h3z"></path>
        </svg>
      </a>
      <a class="ml-4 text-gray-500">
        <svg fill="currentColor" stroke-linecap="round" stroke-
linejoin="round" stroke-width="2" class="w-5 h-5" viewBox="0 0 24 24">
          <path d="M23 3a10.9 10.9 0 01-3.14 1.53 4.48 4.48 0 00-7.86
3v1A10.66 10.66 0 013 4s-4 9 5 13a11.64 11.64 0 01-7 2c9 5 20 0 20-11.5a4.5
4.5 0 00-.08-.83A7.72 7.72 0 0023 3z"></path>
        </svg>
      </a>
      <a class="ml-4 text-gray-500">
        <svg fill="none" stroke="currentColor" stroke-linecap="round"
stroke-linejoin="round" stroke-width="2" class="w-5 h-5" viewBox="0 0 24 24">
          <rect width="20" height="20" x="2" y="2" rx="5" ry="5"></rect>
          <path d="M16 11.37A4 4 0 1112.63 8 4 4 0 0116 11.37zm1.5-
4.87h.01"></path>
        </svg>
      </a>
      <a class="ml-4 text-gray-500">
        <svg fill="currentColor" stroke-linecap="round" stroke-
linejoin="round" stroke-width="2" class="w-5 h-5" viewBox="0 0 24 24">
          <path d="M21 11.5a8.38 8.38 0 01-.9 3.8 8.5 8.5 0 01-7.6 4.7
8.38 8.38 0 01-3.8-.9L3 21l1.9-5.7a8.38 8.38 0 01-.9-3.8 8.5 8.5 0 014.7-7.6
8.38 8.38 0 013.8-.9h.5a8.48 8.48 0 018 8v.5z"></path>
        </svg>
      </a>
    </span>
  </div>
</div>
</div>
</div>
</section>
<hr>
<footer class="text-gray-600 body-font">
  <div class="container px-5 py-8 mx-auto flex items-center sm:flex-row flex-
col">
    <a class="flex title-font font-medium items-center md:justify-start
justify-center text-gray-900">
      <svg xmlns="http://www.w3.org/2000/svg" fill="none"
stroke="currentColor" stroke-linecap="round" stroke-linejoin="round" stroke-

```

```

width="2" class="w-10 h-10 text-white p-2 bg-indigo-500 rounded-full"
viewBox="0 0 24 24">
    <path d="M12 2L2 7l10 5 10-5l-10-5zM2 17l10 5 10-5M2 12l10 5 10-5"></path>
    </svg>
    <span class="ml-3 text-xl">Lab India</span>
</a>
<p class="text-sm text-gray-500 sm:ml-4 sm:pl-4 sm:border-l-2 sm:border-gray-200 sm:py-2 sm:mt-0 mt-4">© 2022 Labindia.com
    <a href="https://twitter.com/knyttneve" class="text-gray-600 ml-1"
rel="noopener noreferrer" target="_blank">@yash</a>
</p>
<span class="inline-flex sm:ml-auto sm:mt-0 mt-4 justify-center
sm:justify-start">
    <a class="text-gray-500">
        <svg fill="currentColor" stroke-linecap="round" stroke-
linejoin="round" stroke-width="2" class="w-5 h-5" viewBox="0 0 24 24">
            <path d="M18 2h-3a5 5 0 00-5 5v3H7v4h3v8h4v-8h3l1-4h-4V7a1 1 0 01-1
1h3z"></path>
            </svg>
        </a>
        <a class="ml-3 text-gray-500">
            <svg fill="currentColor" stroke-linecap="round" stroke-
linejoin="round" stroke-width="2" class="w-5 h-5" viewBox="0 0 24 24">
                <path d="M23 3a10.9 10.9 0 01-3.14 1.53 4.48 4.48 0 00-7.86
3v1A10.66 10.66 0 013 4s-4 9 5 13a11.64 11.64 0 01-7 2c9 5 20 0 20-11.5a4.5
4.5 0 00-.08-.83A7.72 7.72 0 0023 3z"></path>
            </svg>
        </a>
        <a class="ml-3 text-gray-500">
            <svg fill="none" stroke="currentColor" stroke-linecap="round" stroke-
linejoin="round" stroke-width="2" class="w-5 h-5" viewBox="0 0 24 24">
                <rect width="20" height="20" x="2" y="2" rx="5" ry="5"></rect>
                <path d="M16 11.37A4 4 0 1112.63 8 4 4 0 0116 11.37zm1.5-
4.87h.01"></path>
            </svg>
        </a>
        <a class="ml-3 text-gray-500">
            <svg fill="currentColor" stroke="currentColor" stroke-linecap="round"
stroke-linejoin="round" stroke-width="0" class="w-5 h-5" viewBox="0 0 24 24">
                <path stroke="none" d="M16 8a6 6 0 016 6v7h-4v-7a2 2 0 00-2-2 2 2 0
00-2 2v7h-4v-7a6 6 0 016-6zM2 9h4v12H2z"></path>
                <circle cx="4" cy="4" r="2" stroke="none"></circle>
            </svg>
        </a>
    </span>
</div>
</footer>

```

```
</body>  
</html>
```