



Sinhgad Technical Education Society's
SINHGAD INSTITUTE OF MANAGEMENT
(Affiliated to Savitribai Phule Pune University, Approved by AICTE
& Accredited by NAAC)

S.No. 44/1, Vadgaon (Bk.), Off Sinhgad Road, Pune 411 041
Telefax : (020) 24356592 E-mail : director_siom@sinhgad.edu Website : www.sinhgad.edu

4. Industry project :An industry project refers to a collaborative effort between educational institutions and industries where students work on real-world projects sponsored or supported by companies. This type of project provides students with practical, hands-on experience and exposes them to the challenges and dynamics of the industry.

| Name | Type | Last Viewed |
|-----------|-----------------|-------------------|
| RDwindows | Virtual machine | a few seconds ago |
| FDP_Day1 | Resource group | 48 minutes ago |



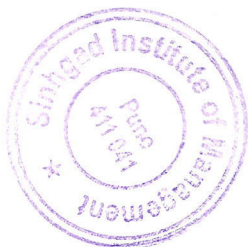


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Screenshot of Microsoft Azure portal showing Virtual machines. Includes browser tabs, address bar, search bar, and a table of VMs with columns: Name, Type, Subscription, Resource group, Location, Status, Operating system, Size.



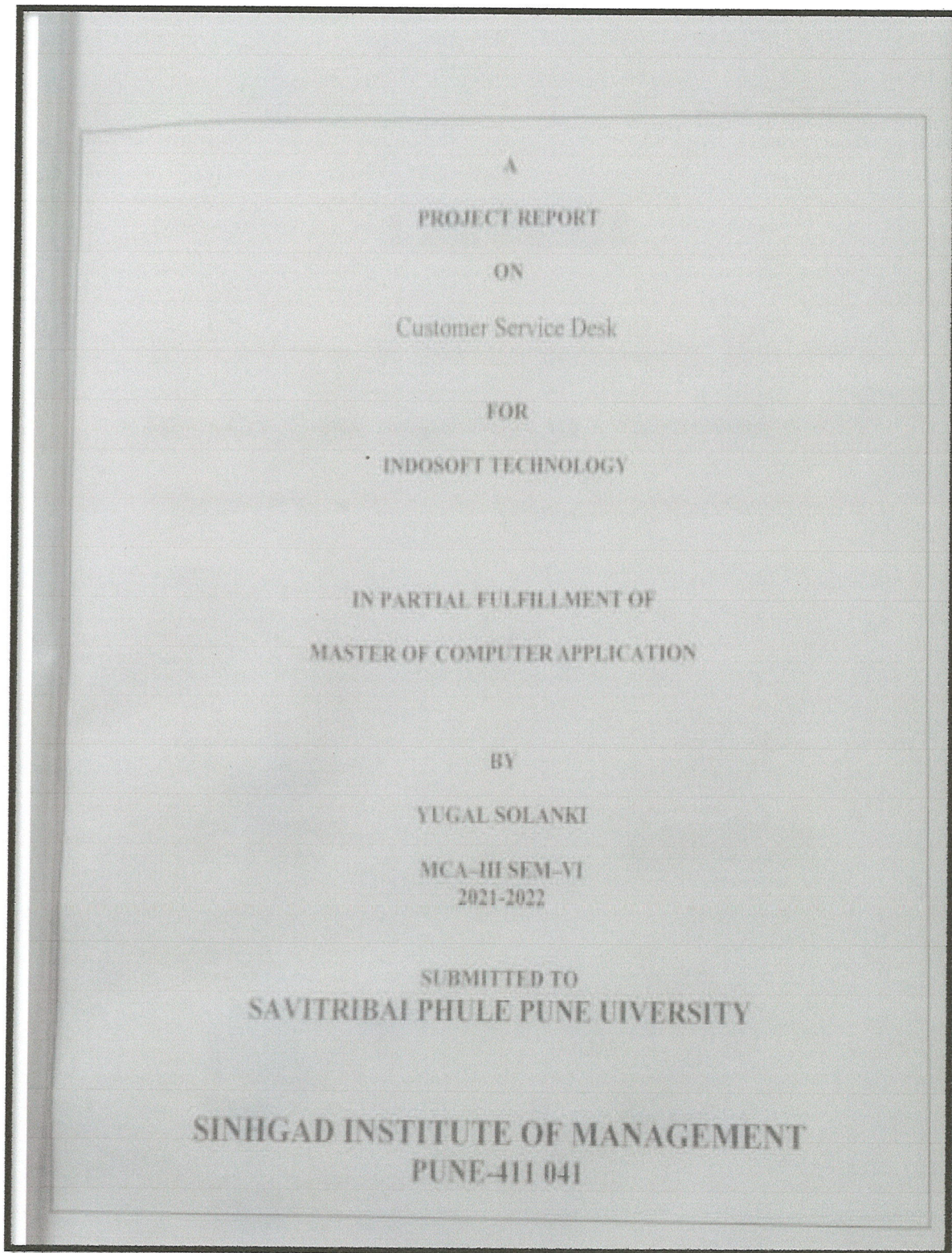
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Chs



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Offer
Letter

Date: 03/01/2021
Ref: Indosoft-551-2021



Dear Yugal Solanki

I am pleased to confirm your acceptance of an internship position as **Java Developer** in the **Cost Department**. Your first day of the work will be **03rd Jan 2021**. Your duties and assignments for this position will be those described to you in your orientation with **Prashant Wankhade**.

Please report to the Human Resources Department at 9:30 am on **03rd Jan 2021** with the appropriate documents and completed forms.

We are very pleased that you have decided to join **Indosoft Technology**. We look forward to seeing you on **03rd Jan 2021** and offer a very warm welcome.

Sincerely,



Authorized
Indosoft Technology





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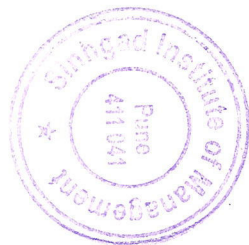
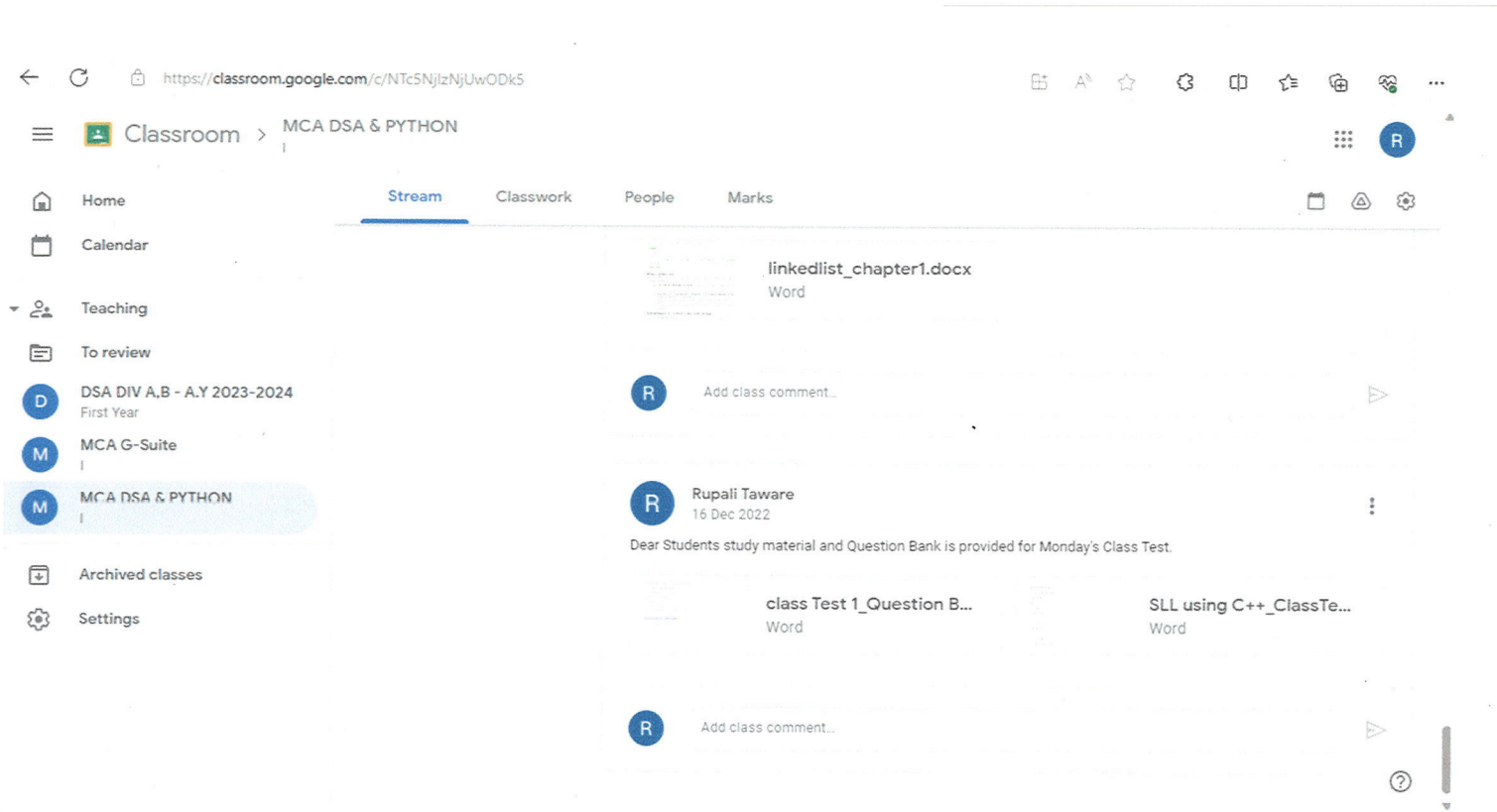
Experiential Learning

- 1. **Laboratory Practical Sessions** : Laboratory practical sessions play a crucial role in science and technical education, allowing students to apply theoretical knowledge in a hands-on, experiential setting. These sessions are designed to enhance understanding, develop practical skills, and foster a deeper appreciation for the subject matter.

Subject Code :IT11L

Subject Name :DSA

AWS Practical Assignment :



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Calendar

Teaching

To review

DSA DIV A,B - A.Y 2023-2024

MCA G-Suite

MCA DSA & PYTHON

Archived classes

Settings

Rupali Taware 7 Feb 2023

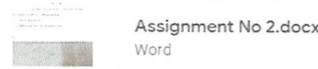
Previous Year University Question Paper DSA



Add class comment...

Rupali Taware 7 Feb 2023

Dear all students submit DSA assignment 2 till 10/2/23.Friday



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MCA DSA & PYTHON

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Settings



Add class comment...

Rupali Taware 21 Feb 2023

all the students are hereby informed to complete the writeup for the remaining DSA practical by 27/2/23 and submit the same strictly on 27/2/23
Div A: Submission time 9 to 10 am
Div B: Submission time 10 to 11 am
Those who haven't submitted their theoretical assignments yet should do so along with their practical on the deadline mentioned above.

Please find the attachment, which contains a list of practical's for the university practical exam and a write-up of the remaining practicals.



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Journal Submission: IT11L DSA Lab

SAMPLE CODE

Q.1 Demonstration of Circular Queue. ?

```
class CircularQueue {
    constructor(size) {
        this.element = [];
        this.size = size;
        this.length = 0;
        this.front = 0;
        this.back = -1;
    } print() {
        console.log(this.element);
    }
    isEmpty() {
        return (this.length == 0)
    }
    enqueue(element) {
        if (this.length >= this.size) throw (new Error("Maximum length exceeded")); this.back++;
        this.element[this.back % this.size] = element; this.length++;
    }
}
```





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```
dequeue() {  
    if (this.isEmpty()) throw (new Error("No elements in the queue"));  
    const value = this.getFront();  
    this.element[this.front % this.size] = null;  
    this.front++; this.length--;  
    console.log(value);  
} getFront() {  
    if (this.isEmpty()) throw (new Error("No elements in the queue"))  
    return this.element[this.front % this.size]  
} clear() {  
    this.element = new Array();  
    this.length = 0; this.back = 0; this.front = -1;  
}  
}  
  
let cq = new CircularQueue(5); cq.enqueue(10); cq.enqueue(45); cq.enqueue(20);  
cq.enqueue(15); cq.enqueue(25);  
cq.print();  
cq.dequeue();  
cq.print();
```





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SAMPLE CODE

Q .2 Demonstration of Priority Queue ?

```
class QElement {
    constructor(element, priority) {
        this.element = element; this.priority =
        priority;
    }
}

class PriorityQueue {
    constructor() {
        this.items = [];
    }
    enqueue(element, priority) {
        var qElement = new QElement(element, priority); var contain = false;
        for (var i = 0; i<this.items.length; i++) {
            if (this.items[i].priority >qElement.priority) {
                this.items.splice(i, 0, qElement); contain = true; break;
            }
        }
        if (!contain) {
            this.items.push(qElement);
        }
    }
    dequeue() {
```





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```
if(this.isEmpty())
    return "Underflow";
return this.items.shift();
}
front() {
    if (this.isEmpty()) return "No elements in Queue";
    return this.items[0];
}
rear() {
    if (this.isEmpty()) return "No elements in Queue";
    return this.items[this.items.length - 1];
}

isEmpty() {
    return this.items.length == 0;
}
printPQueue() {
    var str = "";
    for (var i = 0; i<this.items.length; i++)
        str += this.items[i].element+ " ";
    return str;
}
} var priorityQueue = new PriorityQueue();
console.log(priorityQueue.isEmpty());
console.log(priorityQueue.front());
```





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```
priorityQueue.enqueue("simca", 2);  
priorityQueue.enqueue("sinhgad", 1);  
priorityQueue.enqueue("institute", 1);  
priorityQueue.enqueue("management", 2);  
priorityQueue.enqueue("technical", 3);  
console.log(priorityQueue.printPQueue());  
console.log(priorityQueue.front().element);  
console.log(priorityQueue.rear().element);  
console.log(priorityQueue.dequeue().element);  
priorityQueue.enqueue("society", 2);  
console.log(priorityQueue.printPQueue());
```



International Trade of India with other countries during and post lockdown

1. Introduction

International trade comprises of import and export of deficit and surplus goods and services. Export is widely done when the domestic production is more than domestic consumption and the country exporting is specialized in production of that commodity. This sort of trade is based on comparative cost advantage which implies the ability of economy to produce goods and services at lower opportunity cost if compared with its trading partners. This can be classified into artificial and man-made. Artificial is when there is mass production of goods which in turn reduces the cost per unit and therefore it is exported. Natural is when the resources are naturally available in environment favorable for the produce. Export of goods is done at a higher price to rest of the world than in domestic markets because of scarcity. This sort of trade enables investment opportunities and it becomes engine of growth. However import is widely done when domestic production is unable to service the domestic consumption of goods and services.

Before independence, the international trade in India was not beneficial despite the fact that Balance of trade (Exports > Imports) was favorable as there was export of raw materials and not of finished goods. The maximum of Indian trade was restricted to Great Britain as the British rule in India collided with industrial revolution in Britain. However since the 1991 economic liberalization India's economy did improve due to the contribution of increased foreign trade.

International trades have seen major setbacks during several occasions like great depression of 1920's and '30s, global recession of 2008 and several others. One of such occasions is global spread of Coronavirus disease (COVID-19), an infectious disease caused by a newly discovered coronavirus. WHO China Country Office was reported for the first cluster of Covid-19 on 31st December 2019. Since then the virus has reached all over the globe. India reported its first case around 2nd March 2020 and in order to contain the spread of disease a nationwide lockdown was ordered by Government of India from 25th March 2020.

2. Literature Review

The literature mainly focuses on export performance of Indian economy at macro-level during two sub-periods which are

1. Pre-liberalisation period (1980-81 to 1989-90),
2. Post-liberalisation period (1990-91 to 1999-2000) and for the overall period (1980-81 to 1999-2000).

Author has shed light on several factors which added to India's export performance like the demand of hand made goods from petro-rich countries, the migration of Indian IT professionals to developed countries enabling Indian to determine the opportunities in hardware and software goods and services, competitive advantage of India due to low cost labour availability and Government of India initiatives to promote goods with natural comparative advantage, such as horticulture, floriculture, sericulture.

(Source: EXPORT PERFORMANCE OF INDIA DURING PRE AND POST LIBERALISATION PERIOD (1980-81 TO 1999-2000))

The research paper analyzes the trends in India's exports using the time series data for the period 1980-81 to 2010-11. It focuses on two sub-periods 1980-81 to 1991-92 (pre-reform period) and 1992-93 to 2010-11 (post-reform period) to study the impact on economic reforms by government of India and other key initiatives. The study shows that India's exports performance improved significantly during the post-reform period and there has been a perceptible change in the value, composition and direction of India's exports. But author still hopes for more contribution of India in export share for the globe.

(Source: Trends In India's Exports: A Comparative Study of Pre and Post Reform Period. By Dr. Priyanka Sahni)

As per the rankings for the year 2018, India is the 19th largest exporter (with a share of 1.7%) and 10th largest importer (with a share of 2.6%) of merchandise trade in the world. Despite a challenging global environment, reflected in sluggish economic and trade growth and rising protectionism, India's total exports (goods and services combined) have been growing since 2016-17 for the last three years and have surpassed the USD half Trillion (500 Billion) mark in 2018-19, for the first time. The overall estimated exports (merchandise and services) have reached a new peak of USD 535.9 billion this year, attaining a growth of 7.47%. Trade tensions increasingly took a toll on business confidence, consequently financial market sentiment worsened, with financial conditions tightening for vulnerable emerging markets in the spring of 2018 and then in advanced economies later in the year, weighing on global demand. **(Source: The Annual Report 2018-2019 Department of Commerce)**

3. Research Methodology

Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability.

In order to full fill research objectives, this research used quantitative methods.

Secondary Data used during research is obtained from following sources.

1. Bloomberg Terminal (ECTR Ticker)
2. Monthly Export-Import Data from Directorate General of Foreign Trade website.
3. For Covid-19 Related Data used Coronavirus Government Response Tracker Response by Oxford University .

4.Data Analysis and Interpretation

Table 4.1: Exports by India to Countries (Values in Lac Rs.)

| Serial No. | Country | Dec 2019 (F) | Jan 2020 (F) | Feb 2020 (P) | Mar 2020 (P) |
|------------|--------------|------------------|------------------|------------------|------------------|
| 1 | CHINA P RP | 1043734.54 | 1,073,710.23 | 799,735.67 | 791,811.58 |
| 2 | IRAQ | 135,564.44 | 107,873.16 | 86,984.53 | 64,978.10 |
| 3 | SAUDI ARAB | 361,062.40 | 477,684.95 | 485,469.90 | 407,344.71 |
| 4 | U ARAB EMTS | 1,717,186.80 | 1,514,968.27 | 2,094,539.66 | 1,235,283.16 |
| 5 | U S A | 3,321,363.32 | 3,167,999.19 | 3,351,532.51 | 2,763,716.81 |
| | Total | 6578911.5 | 6342235.8 | 6818262.3 | 5263134.4 |

Note:

1. F (Finalised Value till Jan 2020) and P (Provisional Values)
2. India's Imports/Exports include re-imports/re-exports also.
3. Countries are arranged in ascending order of their names.

Analysis:

1. Exports data for Mainland China show month by month Increase of 2.87% for January 2020, decrease of 25.52% for February and decrease of 0.99% for March.
2. Exports data for Iraq show month by month decrease of 20.43%, 19.36% and 25.30% for months of January, February and March.
3. Exports data for Saudi Arab show month by month increase of 32.30% for January, increase of 1.63% for February and decrease of 16.09% for month of March.
4. Exports data for United Arab Emirates show month by month decrease of 11.78% for January, increase of 38.26% for February and decrease of 41.02% for March.
5. Exports data for United States of America show month by month decrease of 4.62% for January, increase of 5.79% for February and decrease of 17.54% for March.
6. Combined exports data for given countries show month by month decrease of 3.60% for January, increase of 7.51% for February and decrease of 22.81% for March.

Table 4.2: Imports by India from Countries (Values in Lac Rs.)

| Serial No. | Country | Dec 2019 (F) | Jan 2020 (F) | Feb 2020 (P) | Mar 2020 (P) |
|-------------------|----------------|---------------------|----------------------|---------------------|---------------------|
| 1 | CHINA P RP | 3,567,491.81 | 4,295,294.66 | 3,176,446.78 | 2,142,234.82 |
| 2 | HONG KONG | 1,018,248.49 | 1,047,024.39 | 761,308.67 | 931,600.80 |
| 3 | SINGAPORE | 779,528.28 | 983,448.60 | 1,131,780.67 | 720,661.51 |
| 4 | U ARAB EMTS | 2,206,070.30 | 2,252,164.43 | 1,782,847.24 | 1,490,866.92 |
| 5 | U S A | 1,845,364.51 | 2,029,943.25 | 2,172,382.49 | 1,530,442.92 |
| | Total | 9,416,703.38 | 10,607,875.33 | 9,024,765.85 | 6,815,806.98 |

Note:

1. F (Finalised Value till Jan 2020) & P (Provisional Values)
2. India's Imports/Exports include re-imports/re-exports also.
3. Countries are arranged in ascending order of their names.

Analysis:

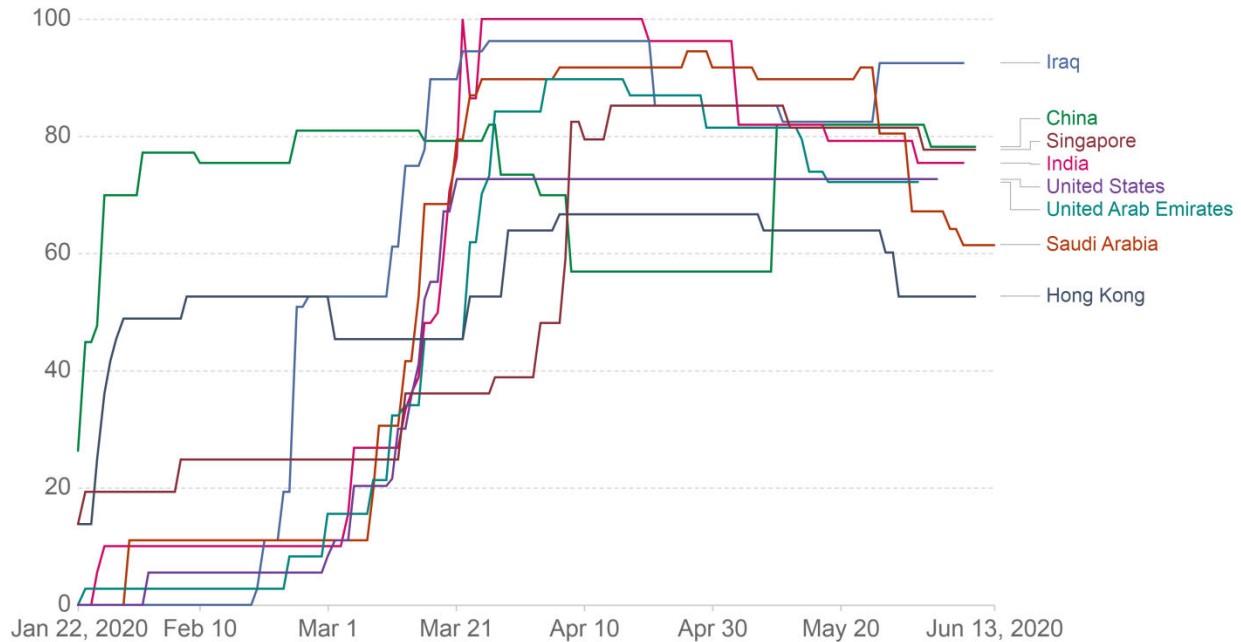
1. Imports data from Mainland China show month by month Increase of 20.40% for January 2020, decrease of 26.05% for February and decrease of 32.56% for March.
2. Imports data from Hong Kong show month by month increase of 2.83% for January, decrease of 27.29% for February and 22.37% increase for March.
3. Imports data from Singapore show month by month increase of 26.16% for January, increase of 15.08% for February and decrease of 36.32% for month of March.
4. Imports data from United Arab Emirates show month by month increase of 2.09% for January, decrease of 20.84% for February and decrease of 16.38% for March.
5. Imports data from United States of America show month by month increase of 10% for January, increase of 7.0% for February and decrease of 29.55% for March.
6. Combined imports data from given countries show month by month increase of 12.65% for January, decrease of 14.92% for February and decrease of 24.48% for March.

Chart: COVID-19 Government Response Stringency Index

COVID-19: Government Response Stringency Index

Our World
in Data

The Government Response Stringency Index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest response).



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last Updated 15th June.
 Note: This index simply records the number and strictness of government policies, and should not be interpreted as 'scoring' the appropriateness or effectiveness of a country's response.
 OurWorldInData.org/coronavirus • CC BY

Analysis:

1. As on Jan 31st 2020 countries had stringency Index as China(69.91), Hong Kong (49.07), Singapore(19.44), Saudi Arabia(11.11) , India (10.19), United Arab Emirates(2.78), Iraq(0.0) and United States(0.0).
2. As on Feb 29th 2020 countries had stringency Index as China(81.02), Hong Kong (52.78), Iraq(52.78), Singapore(25), Saudi Arabia(11.11) , India (10.19), United Arab Emirates(8.33)and United States(5.56).
3. As on March 31st 2020 countries had stringency Index as India (100), Iraq(96.30), United Arab Emirates(84.26), Saudi Arabia(89.81), United States(72.69), China(73.61), Hong Kong (63.89) and Singapore(38.89)

5. Findings, Suggestions and Conclusions

Findings:

A sharp decrease in imports for February(-26.05%) and March(-32.56%) from China was observed when stringency Index increased in china and India was under complete lockdown from March 25th hence demand for goods and services decreased as major products imported from China are electronic goods, machine, engines, iron steel products, precious metals and several others.

Imports from China in future may also suffer due to India-China border tensions and several initiatives like 'Vocal for Local' by Government of India and people initiatives like Boycott Chinese products.

Just a week of lockdown in India in March observed a 22.81% decrease in exports of goods and services. Hence India will continue taking hit on export revenue during lockdown extension period. But on the other side India also decreased imports by 24.48% this will also go on decreasing for upcoming months.

Economies dealing with Oil & petroleum products also suffered huge losses. Brent, the international oil benchmark, has fallen nearly 70 per cent from the beginning of the year as the coronavirus pandemic continues to hammer demand. Saudi Arabia, United Arab Emirates, Iraq and United states suffered huge export losses due to drying up of demand of oil from countries like China and India.

Suggestions:

1. India's public moment to boycott Chinese product can sound like an overwhelming idea but China contributes to 5.47% of India's total export. Hence India needs to seek for alternative trade options with other countries.
2. Global trade governance will emerge as a critical area for the world to work on in order to minimise disruptions and coordinate actions and in virtue of that strengthening of powers of WTO can be done.
3. Indian pharmaceutical firms should look for collaboration with global peers to develop and manufacture Covid-19 vaccine and medications. This will help India to emerge as leader in Pharma Sector.
4. Exports should be considered as essentials so that they can have free movements across states.
5. MSME exporters should be promoted and incentivized so that future gains can be capitalised.

Conclusions:

There is sharp increase in India's trade deficit over the years. For immediate measures the government has provided a welcome extension of the foreign trade policy incentives which were to expire on April 1. However the 'Make in India' and 'Vocal for local' movement leaves a hope to transform India into a global design and manufacturing hub. Companies planning to moving out of China can be a great opportunity for India to grab on in order to increase its manufacturing power. WTO has forecast global trade volumes to drop sharply by 13-32%, which has not been seen before in the modern era. Hence the drop in imports and exports is expected during the lockdown but consumption will increase when government relaxes the lockdown.