



## **Final Summer Internship Report**

On

**Iconflux Technologies Pvt. Ltd.**



**Submitted to: Prof. Ashwini Awasthi**

**Submitted by: Nikita Vyas**

**Section: A**

**Roll no:191133**

**Batch: MBA – FT (2019-2021)**

Institute of Management, Nirma University

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## **Project Title**

Research on Algorithm trading techniques based on Technical indicators and charts.

## **Executive Summary (300 words)**

Summer internship started on 24<sup>th</sup> April 2020 with IconFlux technologies. The main purpose of the project was to make some good algorithms as per the current market conditions. The project was carried out on 16 allocated equities in NSE. The project was completed by using technical as well as fundamental analysis. It consists of both quantitative as well as qualitative research.

The first week of the internship started as a training period where I was trained about the Indian equity market, Derivatives markets as well as various Algo trading concepts such as the order types in Algo trading, various risk associated and TWAP and VWAP Strategies used in Algo. After the training period we started with our routine work which included daily market research and identification of patterns using technical indicators. Once the patterns were identified then different Algos or Strategies were created on the online portal by Zerodha i.e. Streak where all these algos were back tested. We need to submit a daily report of all the algos deployed on the platform along with the results. The deliverables of the project were already mentioned to us in the beginning of the project so this daily reporting system helped me to keep a check on my performance.

The project started with equity market but later on it moved on to derivative markets as well. In derivatives market we worked on arbitrage opportunities and pair trading. During this project we also learned about various research papers and their trading strategies. Also, once the algos were created I deployed them in real market with the help of paper trade. In the last week of the internship we were asked to modify the already developed strategies as per the current market situations. The entire motive of the project was to come up with good strategies which the organisation can take forward and work on them to build technology product.

## **PART A – Profile Of The Organisation**

### **1. INFORMATION ABOUT THE COMPANY**

#### **A- Company Details**

The company is founded in 2012 with the motive of enriching years of powerful knowledge and industrial experience to the innovative and modern enterprises. Team Iconflux dedicated to create valuable IT solution for global enterprise. It is dedicated to offer industry-first tech solutions. It is ISO 9001: 2015 organisation which is focussed on product development, enterprise services and offshore services. They have the best talent form the industry to deliver quality services in Web, Mobile, AI & ML solutions to the clients. The professionals are skilled and experienced to provide customised products to mid-size as well as small size firms and they even serve to some of the leading entities. Till now the company has successfully completed around more than 120 projects and it has only been possible because it is not just any tech company they try to develop and build a long-term relation with their clients and develop a supporting culture in the organisation. This culture helps the firm to provide end to end services to their clients and address their issues more efficiently.

The basic intention behind the business was to provide capabilities to developing businesses in term of technologies to grow and prosper. Holistic development of the enterprise is the aim of the company. The company has always been consistence in their efforts and it has helped them to lead the position in the industry even while maintain standards in the quality of work.

#### **Corporate Mission**

To drive innovation across client's business process making them simple and efficient with the help of our world class resources who become our client's dependable technology partner forever.

## **Corporate Vision**

To be an enviable brand name by offering industry-first technology solutions and thus become a credible entity for our clients.

**Place of Business-** Ahmedabad, Gujarat.

## **B- Product/ Services-**

The firm business consists of providing value-based services for global enterprise in the field of healthcare, finance, education etc.

Business consists of the following services-

### **1. Enterprise value-**

With changes in the global scenario of the enterprise the demands of the enterprise changed and in order to meet these dynamic demands of modern enterprise the firm focuses on organising a digital future for them, the firm makes the technological accessible for these modern organisations with the help of its tech team. The firm is expert in creating customised solutions to meet the personalised demands of the enterprise. It includes-

Intranet Portal Development

Enterprise Portal App Development

ERP System Development

CRM System Development

Business/Technology Consulting

Digital Transformation

Managed Service

### **2. Expert Services-**

With the current changes in the modern technologies and their requirements it is extremely necessary for the firm to expertise in a particular segment. Iconflux has invested huge funds in developing expert teams in the domain of IT. It caters the following requirements-

Web Development

Mobile App Development

Iot Apps Development  
AI & MI Implementation  
Analytics and Big Data

### **3. Product Development Services-**

The firm believes that there is a constant need of fresh creation and in order to facilitate this innovative and fresh development in tech domain the firm provides turnkey product development services. It includes focussing on checking the technical feasibility of an idea. It consists of-

Consultancy and Advisory  
Conceptualization and Strategic Planning  
Product Development  
Testing & Q&A  
Deployment

### **4. Trending Technological Products-**

Iconflux is also engaged in providing services in the domain of trending technologies to their clients. Some of these technologies are- RPA, AI&ML and Bots and Assistance.

Apart from this the company is engaged in a number of **solutions** as well-

1. Enterprise Mobility Solution
2. CRM Solution
3. Forex Solution
4. HRMS Solutions
5. Intranet Portal Solutions

### **C- Customers-**

The firm mostly serves different organisation who are seeking help in digital transformation. They scan be IT firms and even some private IT professionals who are engaged in continuous development and want to enhance their growth through various technological assistance. A huge segment of consumers is engaged in B2B and B2C market development and IT digital

service provider. Iconflux with its skilled employees works very closely with their clients and provide them the right kind of solution needed for their organisations

Some of the prominent customers are My Corp LLC and ACIS Information Technology.

**Distribution and pricing of services-** Since Iconflux helps their clients with personalised services and it differs from client to client so the distribution and pricing of all the services differ with the client needs.

#### **D- Competitors-**

There has been a continuous rise in the number of tech companies in the country. In order to sustain oneself in the industry any company needs to thrive for the best practices and innovate themselves so that they can have a competitive edge over the others working in same industry. Some of the main competitors of Iconflux Technologies are- Mobikode, Rosix Technology IWEBTECHNIK LTD and iGlitz Technologies.

**Mobikode-** It is one of the biggest mobile and web application development company in Pune, Maharashtra. It provides IT solution to its clients in order to make them fit into High Performing Business Units. It is engaged in good web application development for its clients and thus help them to further grow in the market. The main services provide by them are –

Mobile App Development

Q&A and Testing

Manufacturing Execution

IT Contract Staffing

Operator Training Simulation

Staff Augmentation

**Rosix Technology-** It is a web development and web design company with a passion to improve the experiences of any customer while using online portals. The company was established in 2010 and since then it has made multiple connection by creating and marketing

relation with many businesses from different types of industry. The firm is mainly involved in designing website, software, graphics, online market and even marketing strategies.

**IWEBTECHNIK LTD.-** This firm has been operational since 2012 in Bangalore, Karnataka and since then it has been into the business of providing web ad internet marketing solutions to its clients. The firm focuses on a niche segment for web development, digital marketing and web hosting solutions.

**iGlitz Technologies-** This firm was set up in the year 2010 at Coimbatore, Tamil Nadu with the motive of providing all the IT solutions to their clients. The company has strong foundation in Web Application Development, Website design, Web Hosting solutions and many more. With a clear objective the company works towards quality software development and web application services at a reasonable price. The company is also known to be dedicated to serving their clients and continuously improve their services from time to time ensuring customer satisfaction. The three main categories of services are

IT services- Software development, Software testing services and ERP and CRM solutions

Mobile App development Services- Android App development and Ios app development

Web development services- Website Development, Hosting Services, Domain registration and Ecommerce solutions.

E- **Financial Performance-** Since the company is a private limited company no information about the dividend distribution was made available.

## 2. INDUSTRIAL ANALYSIS

### 1. Industry classification-

Since the company under consideration is Iconflux Technologies Pvt. Ltd. which provides services like Web development, App development, Analytics and big data etc. So, it can be categorised as an IT sector company having an industrial group of Software and Services.

Some major features of this sector of industry are-

- Application software development
- System software development
- Client oriented software.

Also, we can observe that the features of the IT industry match with the services provided by Iconflux Technologies Pvt. Ltd.

### 2. Industry structure-

Defining and measuring competition is quite difficult for the IT sector as, tech companies tend to be very different from each other but they surely compete vigorously in different product and service categories. For example, Android has the largest user base, but Apple owns a high-income group of market, so regardless of having a smaller number of users, developing iOS apps yields higher profits.

From the example we can observe that this sector does not follow the general trends observed in other sectors.

The fiscal policy for IT sector of India consists of -

- Direct Tax Concessions-
  - Income Tax holiday on profit from exports.
  - Higher rate of depreciation on computers & software.

- IT Parks under the SEZ policy enjoys 100% IT break for 5 years, 50% tax exemptions for next five years and up to 50% of the profits ploughed back for next 5 years
- Indirect Tax Concessions-
  - Duty free imports by STPI units.
  - CST reimbursement on purchases from DTA.
- Subsidies, Grants and other financial support
  - Rebate in cost of land by state governments.
  - Subsidy for creating >2000 jobs.

Similarly, all the governments round the globe try to provide much incentives to IT sector to grow.

### **3. External environment sector-**

The supplies are available in abundance in this industry as most of the supplies which they need are software products like I.D.E. (Environment in which development of software happens) in order to develop their software, apart from this they also need servers and electronic hardware which are available in most of the locations. Large Corporations are available to provide most of these supplies like Google Colab, Amazon Web Services (A.W S.) etc.

The impact of the economic policy (stated in the previous section)-

- There are a lot of direct tax concessions given to IT companies in the form of simplified return filing, special tax exempt, income tax holidays etc.
- They are also offered capital subsidies and even financial support for the interest expenses.

- The government also support and sponsor programs for developing and enhancing IT skill set in the country.
- Favourable export import policies, free trade agreement, double taxation avoidance etc.
- Legislation and implementation for protecting the products along with trademark and copyrights.

All this has impacted positively in the growth and development of this industry. A number of incentives has also been offered by the government to encourage youth to take up career in this segment. All the incentives mentioned above clearly depicts that being in this industry can be very fruitful, IT industry has grown over the years and the number of players in the industry has been increased. With them the resource provider and suppliers as well as the skilled workforce of the industry increased too.

Overall, it has been observed that IT industry is one of the promising industries in Indian economy. It has changed drastically over the years with the advent of new methods and technologies but the industry has matched its pace with the development and it has developed itself for the player in the industry. There has been a boom in the industry which has increased the players in the industry and now it has become a very important part of the economy and is also contributing to the development of nation and economy.

### 3 ANALYSIS OF THE COMPANY

#### PART A

- **Growth Strategy of the company-**

The company Iconflux is mainly engages into B2B business and they take mostly 5 to 6 clients every year at one office. There are three verticals of the company that has led to the growth are-

**Off shore Development Centre-** Under this head the company deals with a number of overseas companies to provide them a number of resources at a lower price in order to make them benefit and develop their enterprise and make them efficient.

**Product Development-** This is one of the most important vertical for the company under this they help a number of small and medium scale enterprises who have some innovative ideas and want to work on those. Then Iconflux works very closely with them and help them with their technologies. The main aspect of this vertical is that Iconflux work with these companies as partners and there SMEs do not have to invest anything in technologies. Further Iconflux use Pay per use model for these clients to use the technology give n by them. So, this vertical has helped a lot to Iconflux to grow and expand over the years.

**Enterprise Services-** Under this vertical Iconflux provides digital transformation assistance to various organisations.

The main motto of the company is to serve the customers in such a way that they become dependent on them and that's how the company needs not to spend much more time on sale. They focus on long term business with their clients and they focus on major 5 to 6 clients every year so that their quality of work is not affected.

#### PART B

- **Organisation changing context-**

For any IT company the growth structure is the biggest challenge as there are multiple resources and different technologies and all of them keeps on evolving continuously. So, it is very necessary for an IT company to keep up with the pace of these

developments. There are only two options left for them then i.e. either to perform or perish. So, at Iconflux they believe that with the changing scenario it is necessary to change the skills sets along with the technologies.

The company generally serves only 5 to 6 employees over a year with a long-term vision and once the project is over so there is some buffer time before the start of new project. So Iconflux makes use of this buffer time and to enhance the skills of their employees and also use this buffer time to receive feedbacks from the experts to help the company to achieve their target better.

- **Achievements and Recognition-**

The main key vertical for Iconflux is product development and two projects which were very successful for the company were-

1. Product developed for their client My Crop Technologies which is a Digi-Agri Solution which will help the farmers by digitalizing some of the aspects of agriculture. This product has been honoured by the world economic forum and recognise by the Start-up Gujarat Program by the Gujarat Government.
2. Second product was with one of the publication houses of Delhi named Vinod Publications. Iconflux developed the product called Supreme Today which is a mobile application which provides all the cases and records of Supreme Court of India and High Courts.

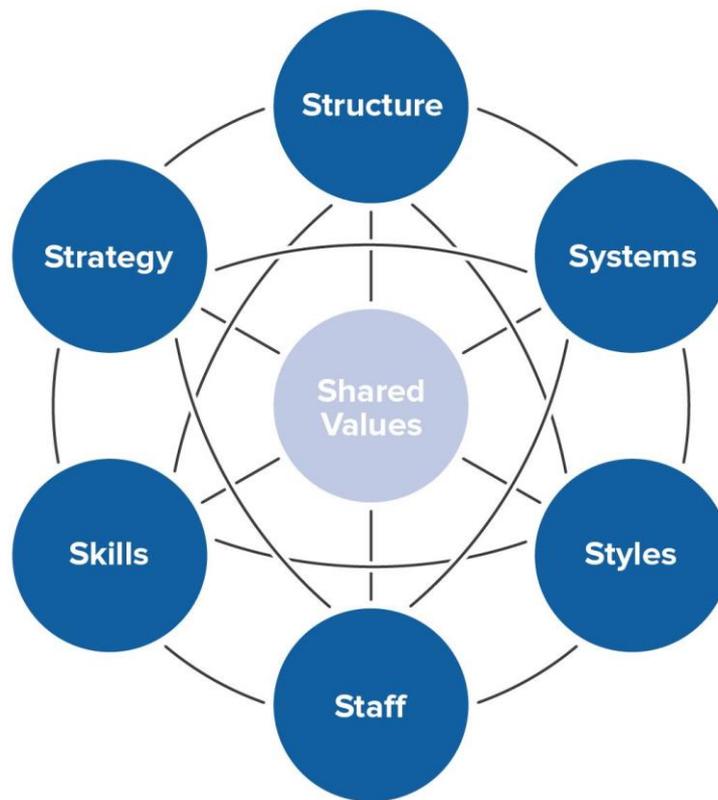
So, after analysing the company's changing scenario, awards and recognitions as well as the growth patterns it can be concluded that-

Iconflux believes in continuous development and growth and it can be seen in working style of the company as well. The company believes in developing long term relations with the clients and focus on their development along with their clients. They feel and believe in being complete loyal to their customers and employees which help in developing faith in the organisation which leads to better results and profit margins.

### **PART C**

- **Comparative performance-** As compared to other competitors Iconflux has done very well over the years. The company has grown in all the aspects be it revenue or consumers or their way of working and management or leadership. They have a skilled team of software developers who provide a quality work in the required time. Their quality of work has made them stand out in the industry and help in positioning better in the market. Some of the factors that differentiates Iconflux with other companies are-
  1. The company has been able to strengthen itself over the years and at the same time the company has not compromised with the standards of their industry and their quality of work has not been degraded.
  2. The company respects privacy and all the intellectual rights and for this reason only they follow the policies of keeping all the information about their client confidential. This has improved their reputation in the market significantly.
  3. With the help of Agile Model and screen planning the firm has been able to manage its limited resources in a very effective and efficient way. This has given them a competitive edge over their competitors.
  4. Timely follow-ups- The concept of weekly meeting and daily reports has given the firm advantage in terms of identifying their key performer project and activities. This has also helped the firm in keeping a regular check on their performance and identifying the areas where they are lacking behind. The reason for such deviations is also discussed and then worked upon to improve them.

## 4 7S FRAMEWORK



McKinsey 7S consists of the following-

- **Strategy-** The strategy adopted by Iconflux is that of not focussing on the number of clients but on the quality and long-term relationships with them. The firm provides flexibility in terms of its resources and use Pay Per Use model which helps their clients as they have to pay only for that part of technology that is actually used by them. Along with this when Iconflux works for digital transformation they act as partners for their clients and provide them with free technologies and work very closely with them, this creates a win-win situation for both the party.
- **Structure-** The company has various departments such as – HR, Sales, Marketing, finance etc. and the organisation is headed by Chief Executive Officer (CEO).  
In any particular department the following structure is followed-
  1. Under CEO they have delivery managers who keeps a check on the new projects lined up and what upcoming projects they could invest in.

2. Next comes Multiple project manager, these are the managers who handles various projects and teams under them.
  3. Then comes Team Leader who manages one particular project with his or her team.
  4. The lower line in the organisation consists of Senior Resources, Junior Resources and trainees.
- **Systems-** The systems that are used by the firm are Agile Model and Screen Planning where they have meetings in every 15 days and weeks as well. These meetings will help them to continuously track their performance and know the areas where they are lagging behind so that they can work on it. Also, since it is a start-up, they do not have much resources so this system of working helps the firm in organising and allocating their resources properly.
  - **Shared Values-** The values that Iconflux believes in are the following-
    - Integrity-** It is integrity with not only the clients but with employees and society as well.
    - Commitment-** The firm remains committed to their clients and employees as well and respect their commitment.
    - Obsession-** the firm is obsessive towards a good quality of work to their clients.
    - Nurture-** They believe in nurturing client's business through innovative technologies.
    - Futuristic-** The company is aligned towards futuristic vision.
    - Loyalty-** The firm is loyal towards their and their client's growth and success.
    - Uniqueness-** The firm believes in original and unique style of working.
    - X-Factor-** It is the unique team which helps in growth of the organisation.
  - **Style-** In the beginning the organisation lacked leadership as all were freshers and new in the industry but over the years they have learned over the years. There is a mix of both type of personalities in the upper management i.e. Type A and Type B personalities. They believe that it has helped the firm in not missing out on any aspect and giving focus to each and every important aspect.
  - **Staff-** The company believes that criticism leads to the path of success of any organisation so they take all criticism positively even if it is from an employee. In order to keep the work environment open and friendly. First Saturday of every month is a

special working day wherein they all learn from each other and discuss about the coming technological advancements.

Also, a fresher is trained for each and every field in the company and then depending on his or her interest the work is allocated to them but once the work is allocated then the employees need to do the work as per their team leaders and they are continuously evaluated.

- **Skills-** The skills primary required in the organisation are mainly software development. With years the demand for digital services has grown very rapidly so the skill sets required to be in the industry has change dramatically. In order to serve their clients with digital transformation there are a wide array of services provided by them. So apart from these there is also skill requirement of mobile app development, RPA, Chat Box and Web development.

## 5. COMPETITIVE POSITION (Using Porter's Five Forces)



- **Threat of New Entrants:** The IT industry is relatively attractive to new companies because of its rapid growth, good profitability and appealing customer base. Newcomers find it difficult to sustain in this industry because of the cost advantage possessed by the large-scale brands and the significant amount of capital that it would need to establish control. A strong retaliation can be faced by any newcomer from existing and established players, which is a prime reason for this industry being unattractive for new entrants. The best way for a new player like Iconflux to be successful in this industry would be if they had new ideas, technology in the products and services that they offer in the market. To sum up, IT industry isn't highly attractive but it is profitable enough and hence many companies try and enter it. Many new firms try to enter this industry, but they rarely become big names against big established brands.
- **Bargaining Power of Buyers:** Information Technology is massive in size and many companies operate in this industry which makes it a buyer's market meaning that a buyer has many choices to choose from while selecting an IT firm. The switching costs are minimal so customers aren't locked to a firm. A good number of IT sales also comes from clients that make large purchase orders and so IT firms often offer incentives to

their big purchasing clients in order get them utilizing their products over competitors. Customers are sensitive to price and therefore have high bargaining power. However, IT products and services are crucial for success of organizations who are willing to pay a lot of money to get a good product. A company like Iconflux has to constantly upgrade its technology and support it with abundance of advertising for clients to start using their products and services.

- **Bargaining Power of Suppliers:** IT industry has standard inputs where speed, memory, performance etc making a difference. The supplier base for an IT industry is moderate size which means that suppliers do have a moderate bargaining power with the IT firms. Both suppliers and IT firms are important to each other but suppliers are not locked into deals with specific firms (excluding contracts) though most suppliers and IT firms maintain well established connections which maintains the balance of the equation. But suppliers do have an impact on the IT firms in terms of prices and can affect a growing company like Iconflux to change their prices accordingly.
- **Threat of Substitutes:** Products with non-online or manual-mechanical processes are substitutes to the products and services IT firms provide. But they tend to perform at lesser efficiencies when compared to IT products and services. This factor weakens the threat of substitutes against IT firms. Since advanced technologies are being adopted increasingly in industries this would make the threat faced even minimal. While moderate switching costs help facilitate substitution, they are not strong enough to take place of IT products and services. The digital era will increase the reliance of other industries on IT industry even more.
- **Rivalry among Existing Players:** With rapid growth, effectiveness and competition many industries rely on IT firms to develop their digital infrastructure. The intense rivalry between existing players in the market. Big companies like Infosys, TCS, Wipro etc obtain a leverage from economies of scale, which is extremely important to them and they maintain an intense rivalry at the top. Products in this industry have a strong customer base and need to be well branded. Competitors are fighting various kinds of legal and advertising battles and market share is unevenly distributed among existing players because of the presence of large and stiff competition in the industry.

## 6 UPCOMING PROBLEMS

There are possibilities for a lot of uncertainties in the near future and due to the entire COVID-19 situation the firm believes that they will have to face a lot of different problems as the entire world economy has been shaken and it is very difficult for the firm to find business for their organisation. Some of the upcoming challenges are-

- 1. Financial Challenge-** Due to lockdown and stoppage of economic activities there are a number of clients that have become bankrupt because they do not have any business now. So financially the company has to face a lot of difficulties in terms of getting their payments back from the clients.

**Solution-** For this problem the company should focus on various ways to reduce their cost as much as possible. The company should try to reduce their unnecessary expenses and try getting those projects with lower margin profits to sustain the team in the organisation.

- 2. Sales Challenge-** As the clients are not asking for any services from the company so it is very difficult for the company to find new clients and identify sales. It is difficult for the firm to earn revenue and sustain themselves.

**Solution-** In order to sustain in the market Iconflux is planning to use this time productively. They have been in the market for almost around 8 years and they have come across a lot of ideas which they could not give much priority due to lack of time. This period is dedicated to think more on those ideas and analyse if something can be built using those ideas which can be sold after COVID.

- 3. Work Environment Challenge-** As per Iconflux the current situation has resulted in a new challenge for them to maintain the same friendly work environment even in work from home phase. It is a challenge for the firm to maintain the motivation of the employees in their home as well.

**Solution-** In order to manage the work environment in this lockdown phase the organisation is organising lot of fun activities with their employees weekly to keep them energize and dedicated towards the organisation.

In order to address all these upcoming challenges, the company is looking forward to enhance their capabilities and business in the near future. The company looks forward to serve those businesses who were not digitally present during this lockdown and they want to serve these clients in order to help them to digitally transform and work with them.

Even after all these challenges Iconflux has a positive attitude towards the entire situation and they believe that every challenge leads to success and they too will come up with different and innovative ideas to continue their business in the industry.

## **PART B- Project Work**

### **1. INTRODUCTION**

- **Nature of problem-**

The project is all about the various techniques for algorithm trading. A lot of traders or market participants in the market were losing out good trade opportunity of price difference of the same security in different markets. It is because of the time taken by manual trading. It also increases transaction cost as the transactions or the trades are carried out by brokers which charge fee for trading for them. Apart from this the process of manual trading is also prone to a lot of human error while placing the order since the trades are put manually into the system by the broker.

So all these reasons led to losing out a lot of big opportunities in the market. The market needed a fast and quick solution that can capture these trading opportunities at a high speed so that traders can take benefit of price differences

- **Objectivity of the study-**

The study deals mainly with studying that concept of trading which is new and efficient i.e. Algorithm Trading. This method is fast and can easily help the trader by capturing price difference opportunities prevailing in different markets. Also, since a machine is involved in this so there are almost no chances of any error, a program is already fed into the system and whenever the similar situation arises, the machine places trade on its own. It also helps in reducing transaction cost for trading by a huge number.

So, the project deals with the research on various Algo Trading techniques and these techniques have an objective to increase the speed of trading and thus helps in making able to capture the trading opportunities in the markets. Not only this the objective of this project is also to come up with different techniques in Algo Trading so that the trades are done by the system itself whenever the system sense that there are some trading opportunities available or whenever the system sense that there are some price difference across markets that can lead to huge profits. This method of system placing the order itself helps in reducing the transaction cost to a large extent

- **Utility of the project-**

The project is about the various trading strategies with Algo Trading. This project will result in to a lot of trading strategies using the Algo platform and then with the help of these strategies trades can be carried out easily with much less efforts. It helps the organisation to cut down their huge cost related to trading. Apart from this these kinds of trading are usually done by the dealer to increase the liquidity. The project is for the new mobile application by the organisation i.e. Stocktry. This project will help in getting a number of different trading strategies for that application. By analysing various technical charts and indicators different trading strategies are prepared. Once the strategy is selected as the one with most promising results then that strategy is tested for weeks and then algorithms are prepared for the same. These algorithms will be used in the mobile application and it will help the organisation to capture the trading opportunities fast with making good profits. Along with this it will also help the firm to cut down their transactional costs.

The product Stocktry is in its early exploratory stage. So extensive research needs to be done in this domain as how to make the product successful. This is done by conducting an extensive research in the direction of algo trading and different technical indicators are used to analyse the securities for the Indian markets. By this extensive research and analysis of the Indian stock market on the daily basis, the organisation tries to get different strategies for trading in various market scenario. Depending on the market sentiments a strategy is prepared and then various technical indicators are used and charts of different securities are studied. After analysing all this then we come up with a trading strategy which will work in the current market situations and then that strategy is backtested to find out further that whether the strategy is useful or not.

## **2. METHODOLOGY**

### **2.1) Approach-**

The approach used in this project is a mix of both quantitative as well as qualitative project. It is quantitative because for the given set of firm's fundamental analysis was carried out. It includes calculating various ratios of the different firms and then choosing the firm out of the given set. For the research of companies that need to be chosen different calculations were done based on the financial information provided by the company in the public domain. Based on the calculations the firm it is decided whether we need to go long with this company or to go short.

For the qualitative analysis we used technical analysis as well for the given set of companies. Various technical analysis strategies are studied and then depending on the market sentiments. The technical strategy is chosen, apart from this different technical indicator are also used to confirm the trend before testing the strategies developed.

So, the overall strategy is developed by using both quantitative as well as quantitative analysis.

### **2.2) Sources of Data-**

As mentioned earlier the data collected is from all the secondary sources. Primary source is not used.

For the fundamental analysis all the annual report and other data available on the public domain is used for calculating the ratios. For the technical analysis the platform which is used is Streak by Zerodha. All the technical charts and technical indicators are studied form that portal only. Apart from these different sites such as money control and National Stock Exchange sites were also used to collect the data.

### **2.3) Method of data collection-**

The data collected for the project was through secondary sources only. All the financial information that is used for calculating the financial ratios is already

available on the public domain as it is mandatory for all the listed companies to release their financial reports from time to time by SEBI.

For the technical analysis the data collected is through the platform such as Streka by Zerodha on which various charts and indicators are studied and then analysis is done.

Different sources of data i.e. money control and National Stock Exchange website is used.

#### **2.4) Size of sampling-**

In order to carry out the research in the field of algo trading a defined set of company has been provide to us. It consists of 16 companies and all these companies are chosen keeping in mind the various industries in the Indian market. These companies represent all the different sectors that are traded in the Indian stock market and it makes this set of company holistic and complete. Any movement in the market will affect his set of companies as they represent the entire market in a way. Thus, it is very easy to capture the move of market using this set of companies.

#### **Weekly Journal-**

##### **Week 1-**

- With the start of internship first we were supposed to brush up all our concepts related to the internship project. It included details of the equity market in Indian stock market. Derivatives market in India with major focus on future trading and option trading in the country. Then both type of analysis i.e. technical analysis as well as fundamental analysis were studied in depth for more analysis.
- Different ratios in the fundamental analysis like the profitability ratios, turnover ratios, efficiency ratios etc. were studied. In technical analysis different indicators were studied and the major part in this was how and when to use these indicators. Also, what each and every indicator indicate and under what conditions these indicators need to be implemented.

- After that we moved to the basic of Algo trading, which included the introduction of algo trading, the different order types used in the algo trading such as market order, limit order, stop orders etc. and how these orders are used with different motives.
- Next trading strategies were studied like mean reversion strategies, trend following. A basic overview was analysed for these strategies.

## **Week 2-**

- In this week the strategies Mean reversion and Trend following were analysed in depth.
- In trend following strategies all the aspects of it such as the risk associated with it as well as management of it, various indicators used in this trend following strategy. In this the trend following indicators used in the equity markets in India are researched extensively. Also, these strategies were even analysed from the point of view of intraday trading and not only this the long position trade were also analysed. After that all the positives and negatives were analysed for this strategy and how can one make use of these trading styles to one's advantage.
- Next was mean reversion strategy where it was researched in depth and all the risks that are associated with this strategy as well as the management of it were analysed. All the pros and cons of using this strategy were also studied and even the situations or at what market behaviour should we apply these strategies, when it works well when it does not all such things were kept into consideration. The common indicators related to this strategy were explored and studied in depth. Apart from all this the intraday, weekly and monthly mean reversion strategy were also analysed.
- Arbitrages opportunities in Indian equity markets were studied next along with the positives and negatives of trading in arbitrages. Then the different opportunities for these kinds of trading were researched. Different type of arbitrages in Indian markets. Then the various challenges in arbitrage trading were studied and how algorithms can be used in this segment of the market and how algorithms will help the investors in earning more return and help them in investing in good opportunities.

### **Week 3-**

- In this week some advanced indicators were studied and which are mostly used in Algo trading i.e. Volume weighted average price and time weighted average price.
- In Volume weighted average price (VWAP) first the basic introduction about the concept was studied like what this indicator indicates and how one should use it also how it will be helpful for the traders to use this indicator by giving them good trading signals and making good returns. Also, the various indicators that were used with VWAP to generate true signals for trades. Apart from this how algo trading can be done in this particular area was also researched.
- The platform streak was also explored in this week. By watching some introduction webinar on how to use this platform by Zerodha. The platform was explored by trying some functions of it and trying to make some random strategies and analysing their returns as well. At this time, we did not analyse the results completely in-depth but just took care of the profitability percentage that the strategy is giving us and on how many chosen company. Also one thing was kept in mind while framing a strategy the strategy should be relative profitable which means that investing too much fund for only a few percentage of profit would not be a very wise idea because investing huge money in the market is itself a risk, so the cost and risk of holding such securities is very great which must be taken care of.

### **Week 4-**

- This was the week when the practical work related to the project began, we were given the platform to use on our own and keep on trying new ways of trading and checking them on the portal.
- Each day we used to analyse the market and then learn one new and different indicator in depth to formulate a strategy involving that indicator so the first indicator used by me was the Triple EMA which is used widely in trading and it gives better results than a simple EMA as it is more price sensitive. So I made a strategy based on this indicator and then tried another strategy using Super trend which is also a widely known indicator for intraday trading. I used a combination of various super trend with different time frames to create a strategy.
- Like this various different indicator were used daily and before that they were completely analysed and how they can be used in the resent market scenario.

Other indicators studied were ADX and RSI these two indicators help in defining the strength of the trade and thus traders can take long as well as short position based on the market sentiments. Based on these I created a crossover strategy where these indicators crossover was generating trading signals.

- Since the market during that phase was quite uncertain it was bearish for a long time but then at some instances the market the market used to rise and there were huge expectations regarding the reversion of the market as the lockdown from COVID was relaxing in certain states. So different mean reversion strategies were used in this week as well.
- These mean reversion strategies included the use of Money Flow index as well as Bollinger bands and stochastics to generate the trade signals.
- After all this the strategy which was showing some stable returns was analysed completely. The various companies that were used were studied and also reasons for why this particular strategy worked on this company and why not on this. Also, the charts for the companies even before pandemic were analysed and then conclusions were drawn.

#### **Week 5-**

- We have made some good strategies till this week and have tried mostly all the indicator on the streak platform. So this week was focussed on the checking the strategy already made by using different parameters and then see how the strategy reacts.
- So few good strategies that were already created were now weighted using different volume indicators because using these volume indicators will determine the strength of these created strategies and will generate only those trading signals that will have substantial volume as it will make the strategy more profitable.
- Apart from this in this week fundamental analysis was also taken into consideration. Different basic as well as advanced trading strategies were studied. All these new learned strategies were based on some academic papers and involved fundamental analysis of the stock before deciding whether to go long or to go short with any stock.

- Some of the strategies used were betting against beta, Piotroski strategy, G score, Momentum Strategy and momentum reverse strategy. Academic papers were analysed for all these strategies and then their trading strategies were studied with keeping in mind all the minute details. It included details such as the number of securities to hold the time period of the strategy on what market condition does this strategy works and also what could be the possible risk.

#### **Week 6-**

- In this week our focus was more on the fundamental analysis of the stock first and then working on strategies. Fundamental analysis was used to select the stock and then the best stocks are picked up for further technical analysis of the market.
- The first analysis consists of the calculating beta for various 16 companies allotted to us individually and then deciding on which stock one should go long and on which stock one should go long based on the beta value.
- Then different technical indicators were used such as RSI and MACD to develop the strategy on the selected stock.

#### **Week 7-**

- Due to unlock in all over the country the market was turning into bullish and so our focus shifted on working for bullish strategies on those stocks which were increasing and giving good returns.
- Our study then even included trading in futures and work on the arbitrage opportunities in NSE. In included both arbitrage opportunity in different markets as well as in the same market.
- Calculated various parameters for the arbitrage opportunities for futures with different expiry in the month of June like open interest, spread etc.
- After calculating these parameters relations between the underlying prices and change in open interest is identified and based on that the trend in the market is identified.

## **Week 8-**

- This week focussed more on getting consolidated answers to the problems and get to the actual and proper results.
- In this week majority of the work includes paper trading the created strategies and checking their accuracy in the current market situations.
- At the end of this week we need to submit appropriate and suitable strategies for all the companies allocated to us individually.
- Apart from these we were required to do submit paper trading results of the already created strategies on the allotted 16 stocks and then based on the results suitable strategies were selected for the stocks.

### **3. CONTEXT OF INDUSTRY PROBLEM**

This project is related to the Stocktry which is India's first equity fantasy challenge. There has not been any online portal before so it is quite difficult to determine what all will be the requirements of this portal with full accuracy.

In the securities market every trader trade to make profits and they use some or the other methods to determine their entry and exit in trade. They may even use fundamental analysis i.e. analysis the data given be the company i.e. calculating various ratios and depending on them we decide whether to invest in the company or not. Investors may also use technical analysis which includes using a lot of technical indicators and price charts. A number of different patterns are studied and all these patterns indicate some trading style.

With the globalisation of these security market the trading opportunities in the market have increased so now the trader wants to increase the speed of their trades in the market so as to catch good trading opportunities. Here Algo trading come into picture where computers and were used in trading. A set of instructions are prepared for the machine to instruct the machine when to enter and exit the trade. These instructions were very helpful for institutional as well as retail investors. Investors invest in different avenues and with a lot of happening around the world there are a lot of possibilities of price changing frequently. So, it is very difficult for the investors to give attention to all the investment avenues, here algo trading turns out to be very helpful to the investors. It helps in keeping a track of all the investment avenues and thus its not hectic for any trader to trade in so many different markets.

Also, with the help of machines not only speed of trades are increased but also all the manual errors are prevented and thus it helps in effective and efficient trading in the market.

#### 4. PRESENTATION OF DATA

Some of the strategies created by me during the summer internship are presented in the table below-

<b>Strategy no. &amp; indicator and pattern name</b>	<b>Strategy Description</b>	<b>Results and comments along with Reference</b>
<b>Strategy 1 on Super trend</b>	Under this strategy three different super trend were used. (For entry- Sell when Supertrend (10,3,0), Supertrend (7,3,0) and supertrend (11,2,0) all three are higher than high at 5 minutes candlestick chart.	On using this strategy it was found that all the 13 stocks were giving positive returns and 8 out of 13 stocks were giving profits of more than 20%. Refer appendix 1
<b>Strategy 2 on Triple exponential moving average</b>	For this strategy TEMA along with super trend and directional index was used. (For entry- Sell when 30 TEMA higher than close along with supertrend (10,3,0) crosses above close and +di crosses below -di at 10 minutes candlestick chart.	After deploying this strategy it was found that 9 out of 10 stocks were giving positive results and 6 stocks were giving more than 10% profits with Sun pharma giving the highest profit of about 37%. Refer appendix 2
<b>Strategy 3 on EMA, RSI and MACD</b>	In this strategy EMA, RSI and MACD were used. (For entry- sell when 5 EMA crosses below 20 EMA and 2 RSI crosses below 10 and macd (12,26,9) crosses below macd signal at 5 minutes candlestick chart.	After this strategy all the 11 stocks showed positive results with Sun Pharma showing the highest profitability followed by Britannia. Refer appendix 3
<b>Strategy 4 on SMA and</b>	This strategy used parabolic SAR as well as SMA	Using this strategy 10 out of 11 stocks showed positive results and 4 stocks showed

<p><b>parabolic SAR</b></p>	<p>(For entry- Buy when close is higher than 200 SMA and Parabolic SAR (0.02,0.2) crosses below low at 5 minutes candlestick interval.)</p>	<p>profitability more than 10 with Heromotoco being the largest. Refer appendix 4.</p>
<p><b>Strategy 5 on RSI and Supertrend</b></p>	<p>Under this 14RSI and supertrend are used at 10 minutes candlestick (For entry- Sell when 14 RSI is lower than 70 along with supertrend (7,3,0) crosses above high.)</p>	<p>It was observed that 9 out of 16 stocks showed positive results under this strategy with Bajaj Finance showing the highest results followed by ICICI. Refer appendix 5.</p>

## 5. ANALYSIS AND DISCUSSION

As presented earlier the strategies created are aimed for huge profits. The project started during the lockdown period so the entire market was down and there was bearish trend in the market so more focus was on those strategies that work well in bear markets. The following can be the analysis and conclusions of the two-month research project-

- Since the market was bearish and the market was making new lows everyday so it was more profitable for any intraday trader, but not to miss out any opportunity in the market strategies were made for all the three types of markets i.e. bullish, bearish and sideways markets.
- Since there were a lot of uncertainties in the world due to the initial lockdown period because of COVID-19 so no big player in the market was ready to invest huge funds in the markets initially and thus we started making strategies sector-wise so that it will turn profitable.
- Conducting research during these testing times became difficult as the market was very delicate and was changing its direction too rapidly. This required a constant check on the market.
- Not only this after approximately five weeks the market sentiments started to change and the market became very dynamic. There were a number of reasons for the same like tension between Chinese Army and Indian Army, Case regarding the moratorium period and interest in the Supreme Court.
- With the beginning of Unlock Phase in the country and worldwide the market started to rise and making new highs thus it was the time when bullish strategies and sideways strategies worked well in the market.
- Indian Stock market has been on a topsy turvy ride for these two months and thus it needs a continuous and constant attention to make proper strategies in the market that make profits. Actually, this is how the financial markets actually perform i.e. even the slightest happening in any part of the world could affect the market and thus it is always advisable to keep a continuous check on the market.
- Technical as well as fundamental analysis helps in understanding the market sentiments better and thus it helps them to make profitable trades by selecting right stocks as well as right entry and exit timings.

- After any strategy was created it was back tested with at least past three months data of that stock. This helps in letting us know whether we have selected the right technical indicators for the selected stocks. Once the stocks showed profitable results in back testing then these strategies were put to paper trade and this step helped in testing the strategies in current market situations.

## **PART C- Learning from the summer training**

### **LEARNINGS**

This summer project has really helped me to learn a lot not only in technical aspect but in inter-personal aspect as well. It has given me a real time experience of the corporate culture and has taught me how to deal professionally. Besides this corporate learning some of the notable learnings are-

- Since I was a fresher in trading so this internship gave me an opportunity to experience the market on my own, its volatility, sudden shifts and all the drastic movements.
- Through this internship I learned various technical indicators which I did not know before. Not only this internship has helped me to learn on how to use these indicators and on what market conditions which indicator should be used and how one should trade with them.
- This research project has not only taught me technical analysis but it also focussed on various academic papers to carry out the fundamental analysis and to make use of the gap between the strategies present in various academic papers and the current scenarios.
- Apart from this the research project also gave me deep insights about derivatives market and taught me arbitrage opportunities and pair trading.
- The indicators which were focussed were- moving averages, exponential moving averages, relative strength index, super-trend, Bollinger bands, Parabolic SAR and many more.
- Since the focus was mostly on intraday strategies so it gave me a learning opportunity on how the intraday traders make some small but consistent percentage of profits through every day trade.
- This internship made me learn various online portals such as streak and kite by Zerodha. I learnt how to back-test the strategies created and most importantly how to analyse their results and come up with different approach so that the underlying stock make profits.
- It has taught me how to build trade on the basis of market sentiments, in a way how to analyse the market and then on that basis coming up with different strategy. Learned about the important aspects to keep in mind before going for any trade.

- Apart from this it has also helped me to enhance my inter-personal skills. Through a daily conference calls, it has helped me to develop corporate communication skills and to understand my peers better. It has enhanced my soft skills as well.

## ANNEXURES

In order to get some information about the company the following questions were asked to Iconflux technologies Pvt Ltd.

- Q1. How has the company adapted to the changing technological advancements?
- Q2. What is the growth story of the company? Briefly state if there has been any pattern.
- Q3. What are the company's achievements and recognitions?
- Q4. What is the general strategy that the organization employs (in getting clients or dealing with them in order to get competitive advantage)?
- Q5. What is daily procedure or activities the employees do to get the job done (can be reporting system or database management)?
- Q6. What is the style of leadership adopted in the organization?
- Q7. What kind of work atmosphere is there in the organization and how is an employee allotted work? How much liberal is the environment in order to promote new ideas and discussions?
- Q8. What are the core skills of the employees?
- Q9. What are the shared values of the organization?
- Q10. What is the hierarchy in the organization?

# APPENDIX

## 1.

The screenshot displays a web browser window with the URL `streakv3.zerodha.com/backtests?id=ZjJlZjQwN2YzZjhYy00MWUxLThmY2UitNmE2MjQ1MTE4ZDZj&Stock=NSE_ICICIBANK`. The dashboard shows a table of stock performance data for various NSE-listed companies. The table includes columns for stock name, current price, percentage change, a performance bar chart, and several numerical metrics. The user's name 'Ravi' is visible in the top right corner.

Stock Name	Current Price	% Change	Performance Bar	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Metric 6	Metric 7
HEROMOTOCO NSE	2738.25	(2.50 %)	24554.5 (+21.79 %)		92	47	45	4	7	10.56 %
MARUTI NSE	5932.1	(-0.27 %)	93300 (+27.93 %)		90	49	41	5	5	8.70 %
LT NSE	944.25	(0.31 %)	14115.5 (+22.11 %)		80	39	41	4	4	5.11 %
EICHERMOT NSE	18983.5	(3.43 %)	111634.5 (+11.87 %)		84	35	49	6	5	13.41 %
ASIANPAINT NSE	1695.65	(0.55 %)	13796.5 (+14.81 %)		79	38	41	7	7	9.84 %
ULTRACEMCO NSE	3889.6	(-0.65 %)	44803 (+20.07 %)		82	45	37	5	4	5.15 %
HDFC NSE	1885.2	(-0.22 %)	34112 (+29.01 %)		97	49	48	5	6	9.29 %
HDFCBANK NSE	1073.95	(-1.42 %)	8889 (+14.53 %)		99	42	57	3	5	6.43 %
SUNPHARMA NSE	476.85	(0.81 %)	7379.5 (+36.69 %)		83	47	36	5	5	11.65 %
AXISBANK NSE	428.45	(1.24 %)	13853 (+37.05 %)		143	70	73	4	5	6.50 %
INDUSINDBK NSE	487.2	(-1.54 %)	15269.5 (+26.02 %)		177	80	97	6	8	7.89 %
RELIANCE NSE	1787.9	(1.57 %)	13713 (+18.32 %)		82	45	37	8	4	7.01 %
ICICIBANK NSE	361	(-0.51 %)	3843.5 (+14.32 %)		121	55	66	6	7	11.44 %

2.

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streakv3.zerodha.com/backtests?id=MDMyMDZlMDAlZGIsOS00YjhlWEzMTYmYyYjc5Y2FRNDI5&Stock=NSE\_INDUSINDBK

Dashboard Strategies Scanners Trades Ravi

Backtest result 19 Feb 2020 to 18 May 2020 EDIT PARAMETERS DEPLOY ALL

Instrument	LTP	Backtest P&L	Wins vs Losses	Signals	Wins	Losses	WS	LS	Max. DD	
ULTRACEMCO NSE	3889.6 (-0.65 %)	68232 (+15.36 %)		104	53	51	4	5	9.88 %	
SUNPHARMA NSE	476.85 (0.81 %)	15222 (+37.48 %)		115	56	59	5	6	18.95 %	
ASIANPAINT NSE	1695.65 (0.55 %)	5557 (+3.02 %)		98	44	52	6	5	12.16 %	
DRREDDY NSE	3921.45 (0.02 %)	48421 (+15.10 %)		98	53	45	6	5	15.63 %	
NESTLEIND NSE	16895.6 (-0.56 %)	24911 (+1.52 %)		99	45	54	6	5	18.45 %	
EICHERMOT NSE	18983.5 (3.43 %)	172515 (+9.45 %)		108	52	56	5	7	14.07 %	
MARUTI NSE	5932.1 (-0.27 %)	30814 (+4.69 %)		114	47	67	4	11	15.31 %	
AXISBANK NSE	428.45 (1.24 %)	7410 (+10.09 %)		156	65	91	4	7	11.74 %	
HDFC NSE	1885.2 (-0.22 %)	107096 (+46.36 %)		121	67	54	5	7	14.14 %	
INDUSINDBK NSE	487.2 (-1.54 %)	23621 (+20.00 %)		182	73	109	6	8	18.11 %	

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3.

Streak | Create, backtest and dep: x +

streakv3.zerodha.com/backtests?id=MGI2NjRlYTYtMzFmMy00ZDRmlWE5OWEtODcxOWI0ZDNiNTk2&Stock=NSE\_PVR

Dashboard Strategies Scanners Trades Ravi

Instrument	LTP	Backtest P&L	Wins vs Losses	Signals	Wins	Losses	WS	LS	Max. DD	
MARUTI NSE	5932.1 (-0.27 %)	4010 (+0.60 %)		14	5	9	1	3	5.63 %	
HDFC NSE	1885.2 (-0.22 %)	15481 (+6.80 %)		9	5	4	3	2	1.90 %	
ULTRACEMCO NSE	3889.6 (-0.65 %)	30751 (+7.13 %)		12	7	5	3	2	2.52 %	
TECHM NSE	567.2 (1.13 %)	2476 (+3.24 %)		4	2	2	1	1	1.76 %	
NESTLEIND NSE	16895.6 (-0.56 %)	128832 (+7.87 %)		9	5	4	1	2	3.80 %	
AXISBANK NSE	428.45 (1.24 %)	1844 (+2.54 %)		6	2	4	2	1	4.99 %	
SUNPHARMA NSE	476.85 (0.81 %)	6077 (+15.11 %)		11	9	2	7	2	2.44 %	
ASIANPAINT NSE	1695.65 (0.55 %)	3950 (+2.18 %)		8	4	4	2	2	4.47 %	
BRITANNIA NSE	3538.35 (0.09 %)	18672 (+6.15 %)		11	6	5	2	2	2.75 %	
ZEEL NSE	172.25 (-1.23 %)	940 (+3.90 %)		6	5	1	5	1	1.80 %	
PVR NSE	1032.7 (1.72 %)	11414 (+5.58 %)		14	7	7	3	4	3.38 %	

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4.

Instrument	LTP	Backtest P&L	Wins vs Losses	Signals	Wins	Losses	WS	LS	Max. DD
HEROMOTOCO NSE	2738.25 (2.50 %)	29610 (+32.21 %)		105	50	55	5	6	-9.41%
BAJAJ-AUTO NSE	2932.4 (1.84 %)	18221 (+15.48 %)		94	45	49	6	4	-7.70%
NESTLEIND NSE	16695.6 (-0.56 %)	80611.5 (+11.81 %)		72	30	42	4	5	-8.56%
MARUTI NSE	5932.1 (-0.27 %)	56799 (+19.96 %)		87	44	43	6	4	-9.70%
DRREDDY NSE	3921.45 (0.02 %)	-555.5 (-0.27 %)		95	40	55	4	7	-18.54%
ASIANPAINT NSE	1695.65 (0.55 %)	4041.5 (+4.60 %)		76	33	43	4	6	-9.16%
EICHERMOT NSE	18983.5 (3.43 %)	47648.5 (+5.59 %)		79	36	43	5	6	-9.76%
INFY NSE	762.7 (0.81 %)	2738.5 (+9.85 %)		74	34	40	8	5	-12.64%
TATAMOTORS NSE	103.45 (1.87 %)	15 (+0.40 %)		121	48	73	6	6	-18.28%
WIPRO NSE	224.8 (0.27 %)	839 (+9.74 %)		83	39	44	5	6	-15.08%
GAIL NSE	104.9 (1.35 %)	309 (+6.12 %)		101	43	58	4	7	-20.97%

5.

Instrument	LTP	Backtest P&L	Wins vs Losses	Signals	Wins	Losses	WS	LS	Max. DD
INFY NSE	762.7 (0.81 %)	3966 (+5.77 %)		31	20	11	5	2	6.38%
RELIANCE NSE	1787.9 (1.57 %)	11426 (+7.15 %)		29	18	10	3	2	8.10%
SUNPHARMA NSE	476.85 (0.81 %)	7336 (+20.00 %)		39	27	11	10	2	7.13%
DRREDDY NSE	3921.45 (0.02 %)	-28532 (-7.06 %)		41	17	23	3	7	19.11%
ITC NSE	207.55 (0.83 %)	1335 (+7.15 %)		37	25	11	4	3	8.04%
LT NSE	944.25 (0.31 %)	12633 (+14.88 %)		36	22	13	6	3	6.70%
TATASTEEL NSE	329.9 (-1.49 %)	160 (+0.51 %)		39	23	15	3	4	12.18%
BAJFINANCE NSE	2931.5 (-1.10 %)	56778 (+20.10 %)		43	22	20	8	4	6.97%
BRITANNIA NSE	3538.35 (0.09 %)	21816 (+9.12 %)		37	21	15	6	2	6.52%
NESTLEIND NSE	16695.6 (-0.56 %)	187606 (+11.49 %)		45	28	16	5	4	7.20%
HINDUNILVR NSE	2173.7 (1.02 %)	31509 (+15.97 %)		41	24	16	4	3	5.42%
TITAN NSE	1003.5 (1.73 %)	-6364 (-6.66 %)		38	17	20	6	5	10.68%
ICICIBANK NSE	361 (-0.51 %)	6145 (+18.00 %)		32	21	10	4	4	6.85%

6.



## Summer Internship Certificate

This is to certify that **Ms. Nikita Vyas** from Institute of Management, Nirma University has successfully completed her summer Internship at **Iconflux Technologies Pvt Ltd** from **24th April, 2020** to **24th June, 2020**.

She has worked as a **Research Intern** on the Project '**Research on Algorithmic Trading Strategies in Indian Equity Market**'. The project involved Fundamental and Technical analysis of Top 30 Companies in Indian Equity Market. The research is about identification of stock specific strategies in Bull, Bear and Sideways Market. The Project was taken under the guidance of Mr. Ravi Thakkar.

During the period of internship, we found her to be Punctual, Hardworking and focussed. She has worked sincerely on her assignments. Her performance was **Excellent**.

We wish her good luck for her future.

A circular purple stamp with the text "ICONFLUX TECHNOLOGIES PVT. LTD." around the perimeter and a star in the center. Overlaid on the stamp is a handwritten signature in black ink, which appears to be "Sanket Thakkar".

Regards  
Sanket Thakkar

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