SVCE TIRUPATI

EDUCATION FOR A BETTER SOCIETY

MACHINE LEARNING MODEL FOR PREDICTION OF SMARTPHONE ADDICTION

Batch No : 7

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ABSTRACT

- Smartphone addiction has become a growing concern in recent years, with increasing numbers of people exhibiting symptoms such as excessive phone use, loss of productivity, and even physical and psychological health problems.
- To identifying risk, we developed a machine learning model for predicting smartphone addiction using data collected from a smartphone users.
- It included questions about demographics, phone use patterns, and various psychological factors such as anxiety, depression, stress etc.
- The most important features for predicting addiction were phone use patterns such as the frequency of checking notifications , the number of hours spent on the phone each day, and the types of apps used most frequently.
- We then trained the model on a portion of the data and evaluated its performance based on accuracy. Linear Regression learned very well compared to others.
- In conclusion, our study demonstrates the feasibility and effectiveness of using machine learning models for predicting smartphone addiction.

INTRODUCTION

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- Mobile phone usage has experienced tremendous growth, making it the world's largest telecommunication market.
- Smartphones have become an integral part of our lives, and their usage has increased dramatically over the past decade.
- Offering features such as calling, texting, internet access, email, gaming, social media, music, radio, and more.
- Particularly popular among 15 to 25-year-olds, smartphones have become indispensable tools, often serving as companions to combat loneliness.
- However, this technological advancement also raises concerns about the diminishing interaction between individuals as people increasingly devote their time to technology rather than human connections.

PROBLEM STATEMENT

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- The widespread use of smartphones, especially among young people, has sparked concerns about addiction due to excessive usage.
- This addiction adversely affects individuals mental health, productivity, and overall well-being.
- To tackle this issue, utilizing machine learning techniques can help analyze various data factors to predict and mitigate addiction.
- By developing predictive models, we can identify early signs of addiction and implement proactive measures for healthier smartphone usage habits.

EXISITING SYSTEM

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- In the existing system, implementation of machine learning algorithms is bit complex to build due to lack of information about the data visualization.
- Analyzing complex interactions between addiction factors is challenging for early detection.
- Identifying addiction patterns in large datasets is time-consuming and resource-intensive, often resulting in delays and inefficiencies.
- As a result, the existing system struggles to accurately identify at-risk individuals and provide timely interventions to mitigate smartphone addiction's adverse effects.

DISADVANTAGES OF EXISTING SYSTEM

- **Requires More Time**: Traditional methods might involve manual data collection, analysis, and interpretation, leading to a time-consuming process.
- **Difficult to Handle**: Managing large datasets manually or with outdated tools can be cumbersome and challenging.
- **More Complex**: Traditional methods may involve complex statistical analyses or subjective interpretations of data.
- **Less Accuracy**: Due to limitations in data processing or predictive models, the accuracy of predictions may be lower compared to modern machine learning approaches.

PROPOSED SYSTEM

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- Our proposed system utilizes cutting-edge machine learning techniques to develop a predictive model for smartphone addiction.
- Many ML Algorithms are available for prediction of smartphone addiction such as Regression, Decision Tree, Random Forest ,SVM etc.
- We used proposed and compute best method for diagnosis a comparative study of ML techniques for smartphone addiction.
- From above the algorithms Linear Regression gives the accuracy of hundred percent compare to others.
- In this stage we have first implement the dataset and the algorithm individually and then we combine these results and compute the accuracy.

ADVANTAGES OF PROPOSED SYSTEM

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- **Requires Less Time**: Machine learning algorithms automate data processing and analysis, reducing the time needed for prediction.
- **Good Accuracy**: Advanced predictive models can leverage large datasets to achieve higher accuracy in identifying at-risk individuals.
- **Easy to Handle** : User-friendly interfaces and automated workflows make it easier to manage and interpret predictive results.
- **Easy Process** : Simplified workflows such as cleaning, normalization, and feature selection for prediction process.

SPECIFICATIONS

SOFTWARE SPECIFICATIONS:

Operating System	:	Windows XP.
Platform	:	PYTHON TECHNOLOGY
Tool	:	Python 3.6
Front End	:	Python anaconda script
Back End	:	Spyder

HARDWARE SPECIFICATIONS:

Processor	: Intel-5 Processor
RAM	: 4GB (min)
Hard Disk	: 128 GB
Key Board	: Normal and Multimedia
Mouse	: Compatible Mouse

MODULES

- Data exploration: using this module we will load data into the system
- Processing: Using the module we will read data for processing
- Splitting data into train & test: using this module data will be divided into train & test
- Model generation: Linear Regression, SVM, Random Forest and Decision Tree
- METRICS: MSE, MAE, RMSE metrics scores accuracy calculated.
- User input: Using this module will give input for prediction
- Prediction: final predicted displayed

UML DIAGRAMS

- Use Case Diagram
- Class Diagram
- Sequence Diagram
- Activity Diagram

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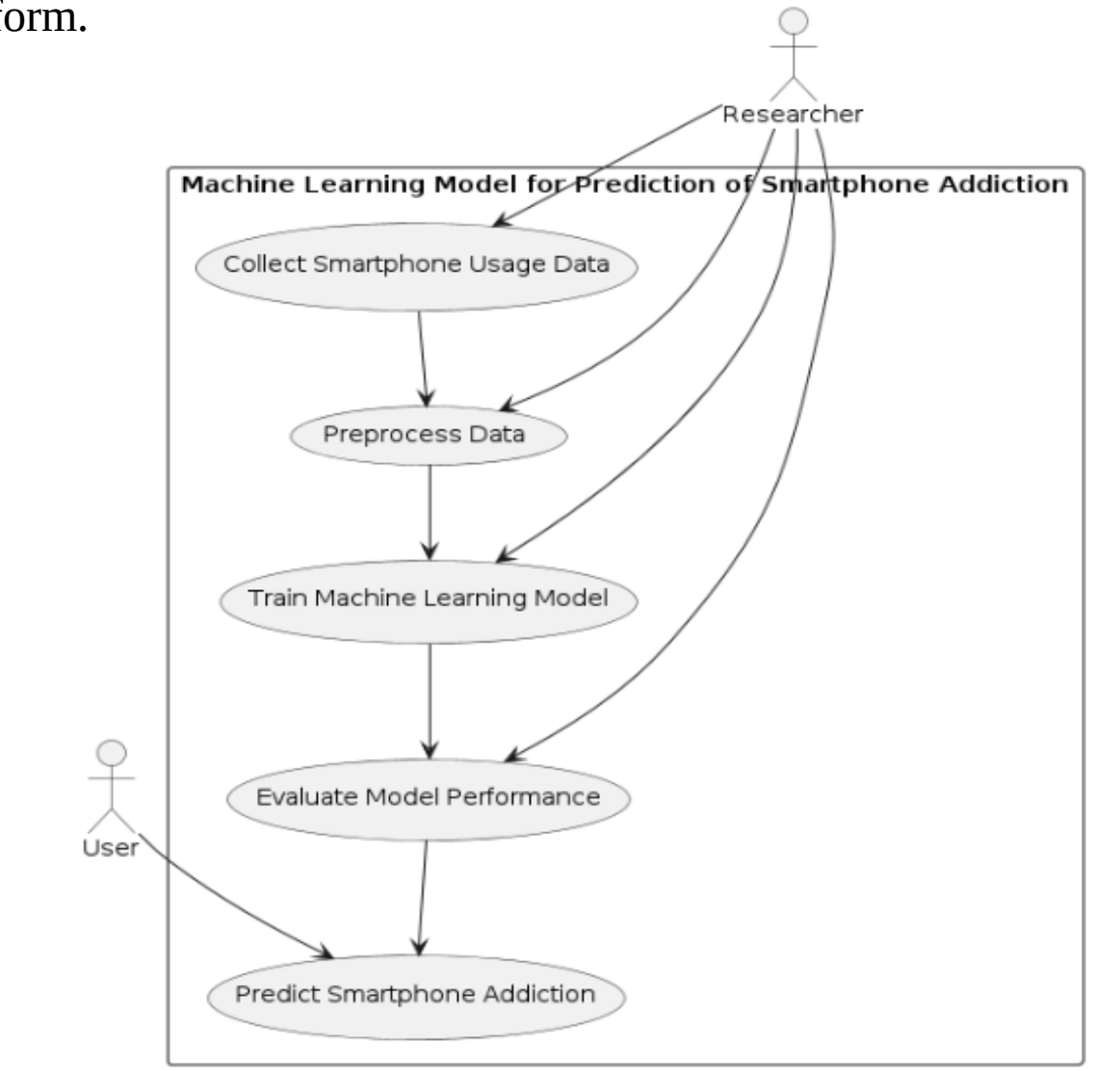
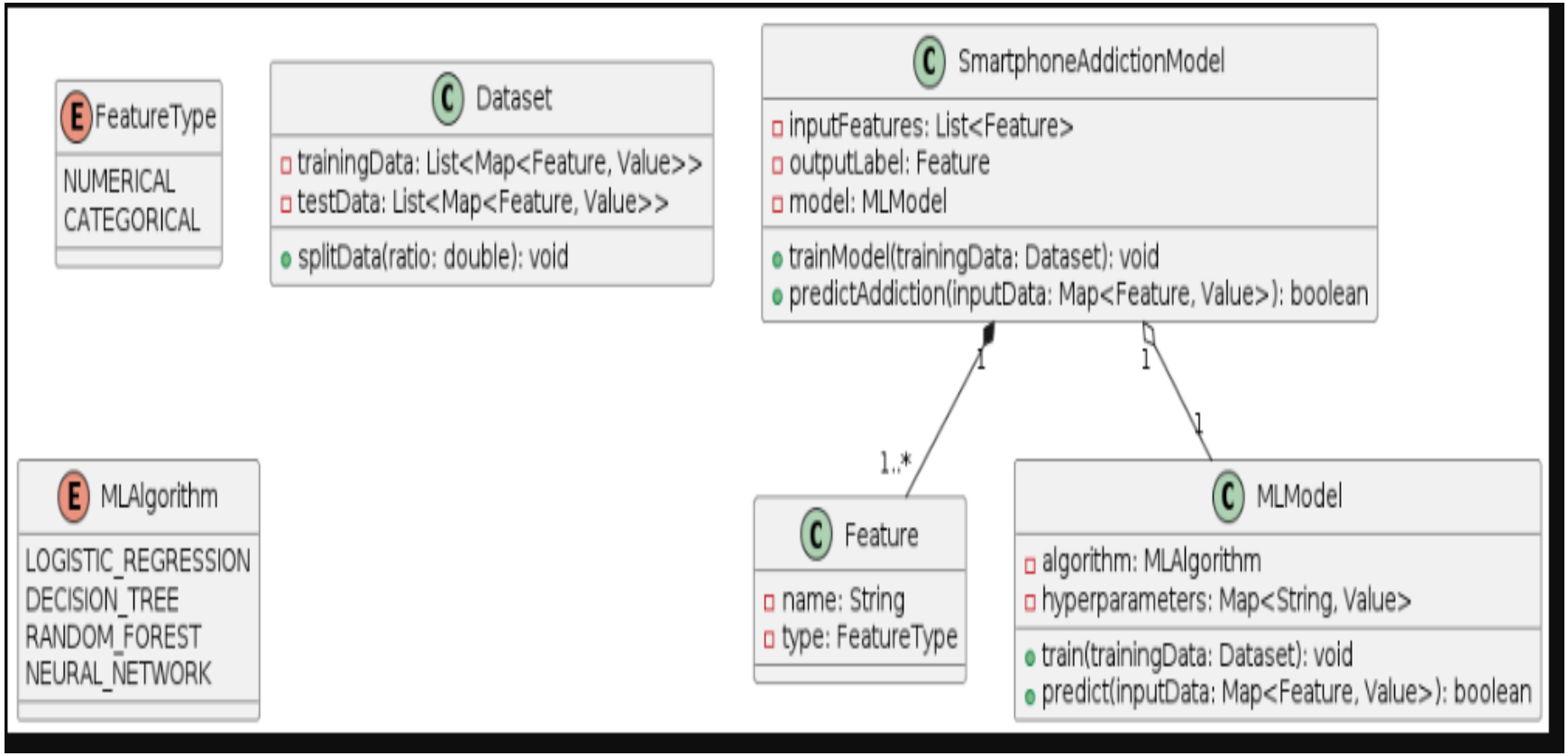
USE CASE DIAGRAM

- Use cases are a set of actions, services and functions that the system needs to perform.



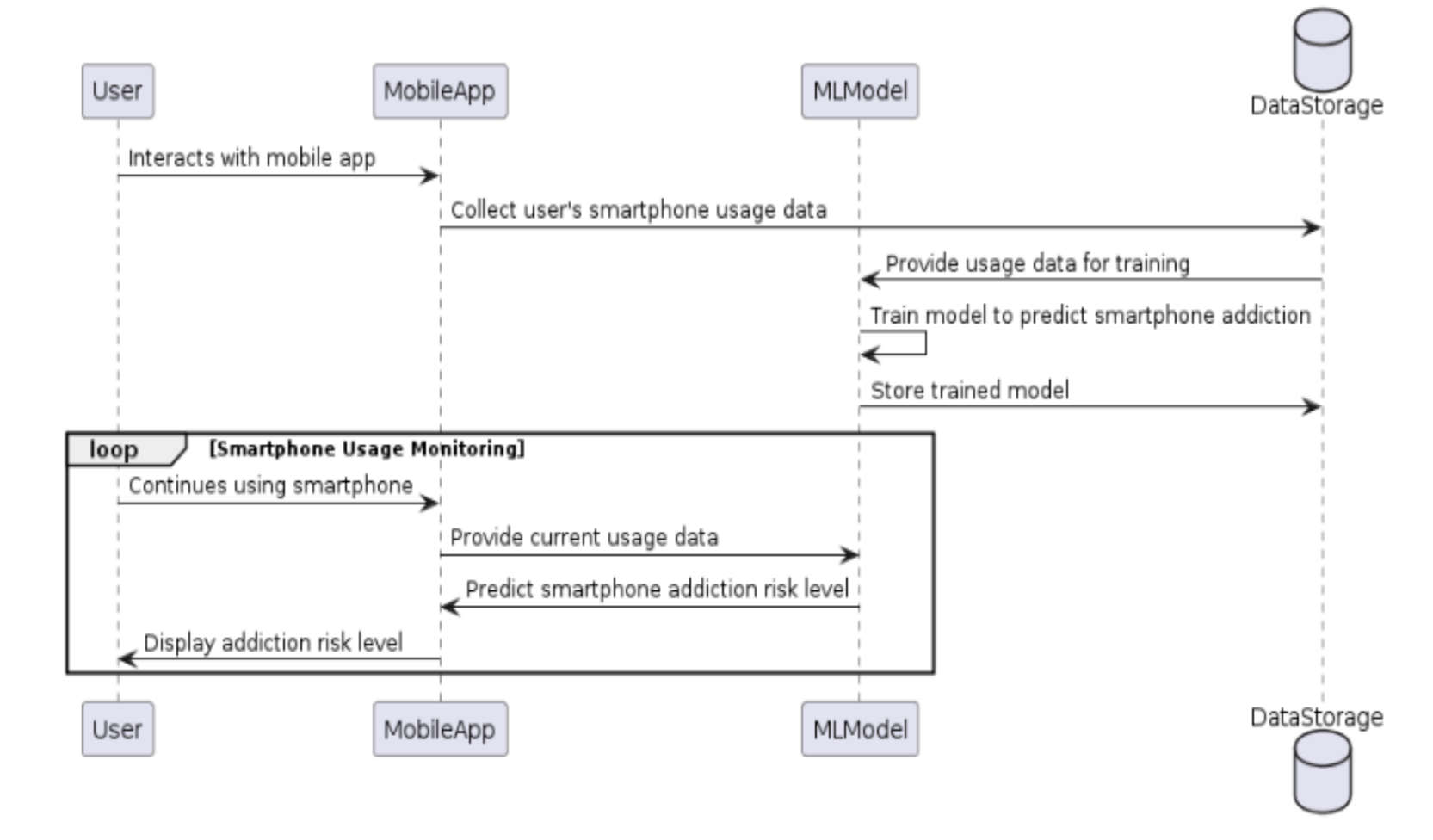
CLASS DIAGRAM

- Class diagram is a type of static structure diagram that represents the fundamental architecture of the system.



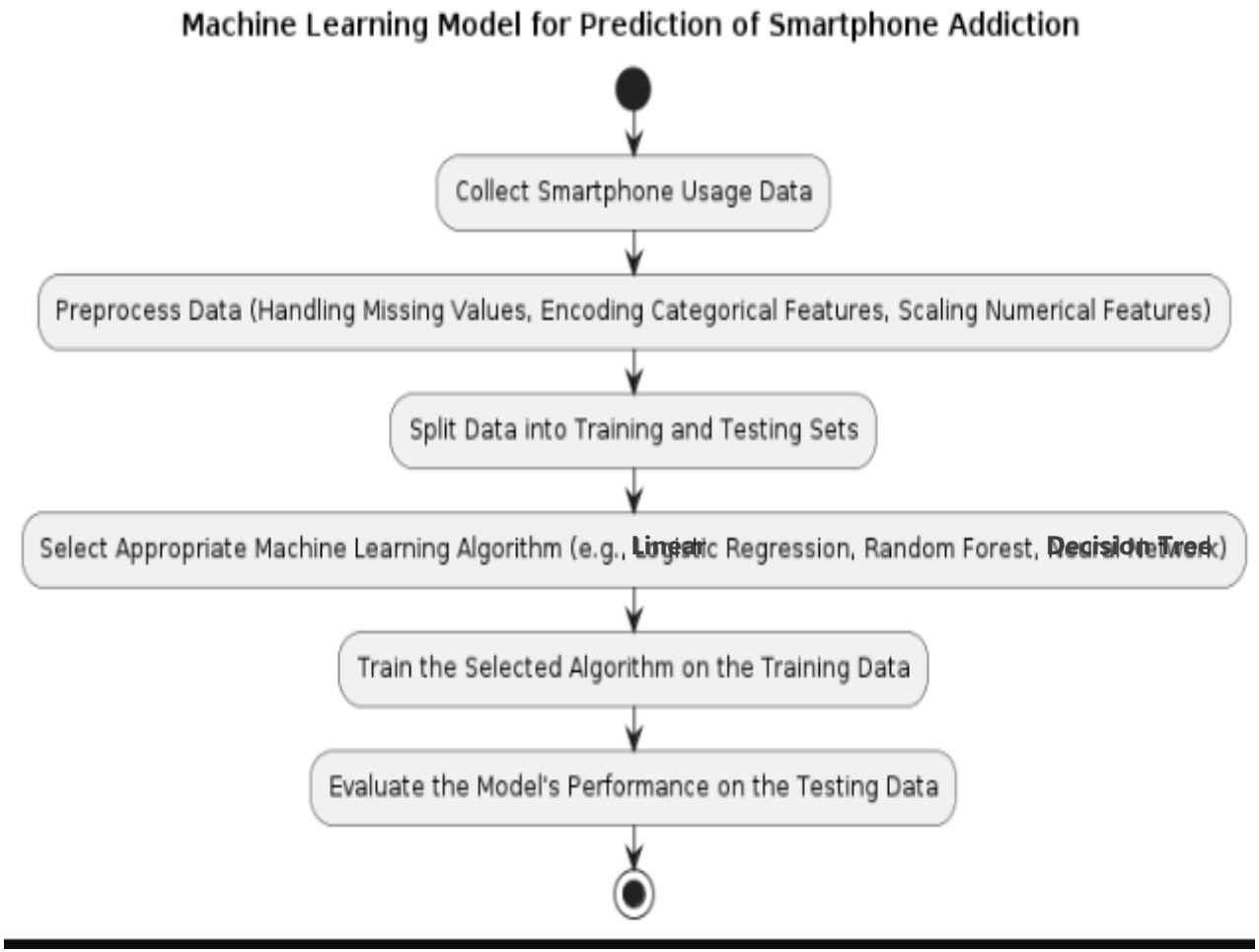
SEQUENCE DIAGRAM

- Sequence diagrams describe interactions among classes in terms of exchange of messages over time.

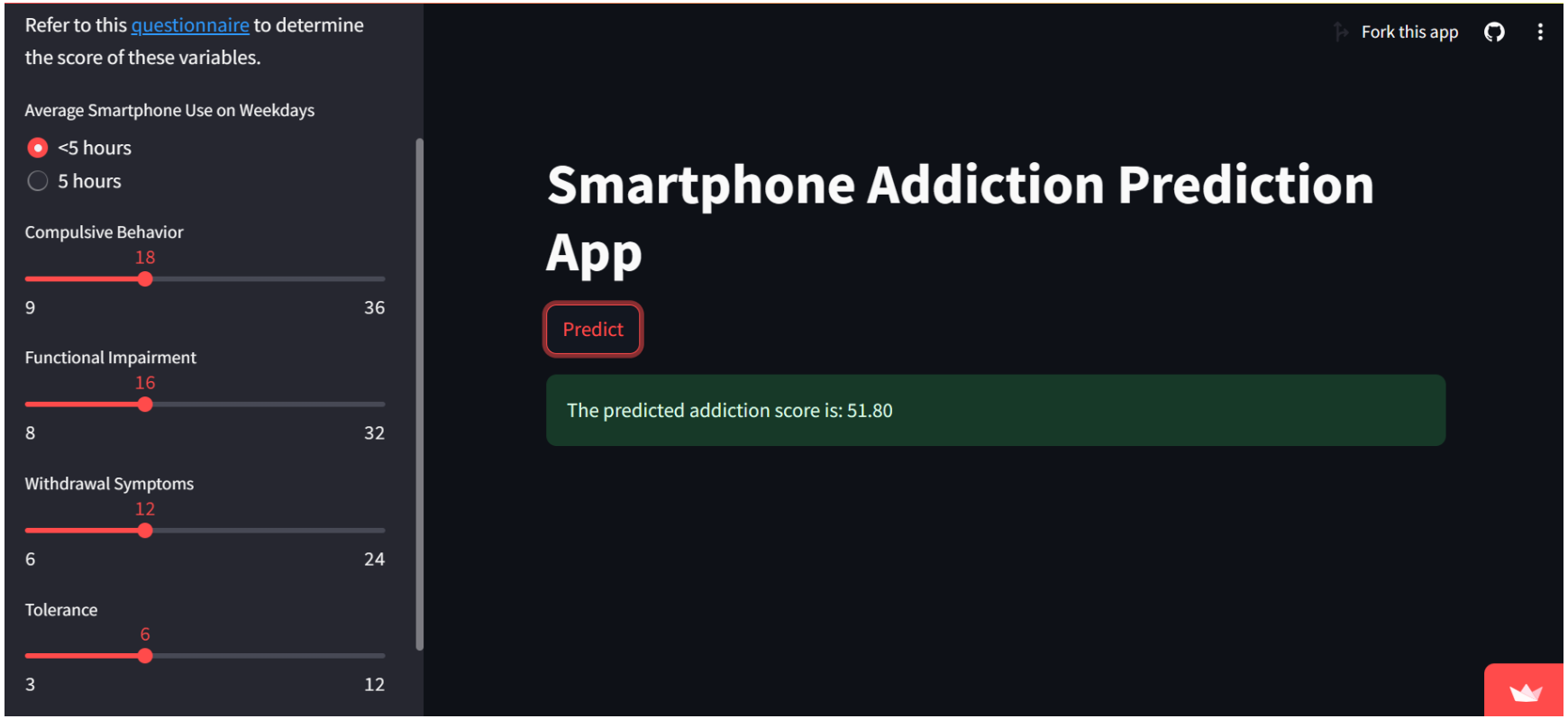


ACTIVITY DIAGRAM

- Activity diagram is basically a flow chart to represent the flow from one activity to another activity.



OUTPUT SCREENSHOTS



OUTPUT SCREENSHOTS

CONCLUSION

This study aimed to reveal the development of machine learning models to predict smartphone addiction represents a significant leap in addressing digital dependency. These models analyze diverse user behaviors to enable early identification and intervention. By leveraging predictive analytics, researchers can gain deeper insights into smartphone addiction, leading to targeted interventions and personalized support. Moving forward, refined machine learning applications have the potential to shape digital health interventions, promoting healthier relationships with technology and enhancing overall well-being in the digital age.

THANK YOU