**Software Engineering Tools Lab**

**Assignment No-2**

(Module 2- Software Development Frameworks) **Due date-15/02/2022**

**PRN:2019BTECS00031**

**PRN:2019BTECS00040**

**(Note: Solve below assignment in a group of 2 students, for question no 1 for every group 1 Framework/IDE/Software will be assigned, for question no 2 saperate dataset will be assigned to each group.)**

1. List of Frameworks/IDEs/Softwares

**Android SDK**

For every Frameworks/IDEs/Softwares given above provide the answers for below questions

1. Original author

Android Inc. was founded in Palo Alto, California, in October 2003 by **Andy Rubin, Rich Miner, Nick Sears, and Chris White**.

1. Developers

**Google**

1. Initial release

October 2009

1. Stable release

26.1.1/September 2017

1. Repository (with cloud support )
2. Written in (Languages)

Java

1. Operating System support

Cross-platform

1. Platform ,portability

Android SDK Platform-tools is helpful when we are working on Project and they will show the error messages at the same time. It is specifically used for testing. It includes:

Android Debug Bridge (ADB), is a command-line tool that helps to communicate with the device. It allows us to perform an action such as Installing App and Debugging App etc.

Fastboot allows you to flash a device with a new system image.

Systrace tools help to collect and inspect timing information. It is very crucial for App Debugging.

1. Available in (Total languages)

English

1. List of languages supported

* Java.
* Kotlin.
* C++
* C#
* Python

1. Type (Programming tool, integrated development environment etc.)

[integrated development environment](https://en.wikipedia.org/wiki/Integrated_development_environment)([IDE](https://en.wikipedia.org/wiki/Integrated_development_environment)), [SDK](https://en.wikipedia.org/wiki/Software_development_kit)

1. Website

<https://developer.android.com/sdk/index.html>

1. Features

* **User** **Interface** – Android operating system provides a UI which is associated with the activity and presented to user.
* **Messaging** – It supports messaging services -SMS , MMS.
* **Web Browser** – It is based on the open-source WebKit layout engine which is coupled with Chrome’s V8 JavaScript engine that supports HTML5 and CSS3.
* **Connectivity** – It has various connections such as Bluetooth, Wi-Fi, GSM/EDGE, CDMA etc.
* **Storage** – A light relational database – SQL (SQlite) is used for the storage purpose.
* **Multi-touch** – Android has native support for multi-touch feature.
* **Multi-tasking** – Android support multi tasking where user can perform multiple tasks simultaneously.
* **Multi-Language** – It supportssingle direction and bi-directional text feature.
* **Wi-Fi Direct –**Android  supports a technology that lets apps discover and pair directly over a high-bandwidth peer-to-peer connection.
* **Android Beam –**This feature is used to share instantly just by touching two NFC enabled phones together.

1. Size (in MB, GB etc.)

About 5 GB

1. Privacy and Security

In order to continually innovate and improve the SDK, Google may collect certain usage statistics from the software including but not limited to a unique identifier, associated IP address, version number of the software, and information on which tools and/or services in the SDK are being used and how they are being used. Before any of this information is collected, the SDK will notify you and seek your consent. If you withhold consent, the information will not be collected.

The data collected is examined in the aggregate to improve the SDK and is maintained in accordance with Google's Privacy Policy.

1. Type of software (Open source/License)

Open source

1. If License- Provide details.

* Subject to the terms of the License Agreement, Google grants you a limited, worldwide, royalty-free, non-assignable, non-exclusive, and non-sublicensable license to use the SDK solely to develop applications for compatible implementations of Android.
* You may not use this SDK to develop applications for other platforms (including non-compatible implementations of Android) or to develop another SDK. You are of course free to develop applications for other platforms, including non-compatible implementations of Android, provided that this SDK is not used for that purpose
* You agree that Google or third parties own all legal right, title and interest in and to the SDK, including any Intellectual Property Rights that subsist in the SDK. "Intellectual Property Rights" means any and all rights under patent law, copyright law, trade secret law, trademark law, and any and all other proprietary rights. Google reserves all rights not expressly granted to you.
* You may not use the SDK for any purpose not expressly permitted by the License Agreement. Except to the extent required by applicable third party licenses, you may not copy (except for backup purposes), modify, adapt, redistribute, decompile, reverse engineer, disassemble, or create derivative works of the SDK or any part of the SDK.
* Use, reproduction and distribution of components of the SDK licensed under an open source software license are governed solely by the terms of that open source software license and not the License Agreement.
* You agree that the form and nature of the SDK that Google provides may change without prior notice to you and that future versions of the SDK may be incompatible with applications developed on previous versions of the SDK. You agree that Google may stop (permanently or temporarily) providing the SDK (or any features within the SDK) to you or to users generally at Google's sole discretion, without prior notice to you.
* Nothing in the License Agreement gives you a right to use any of Google's trade names, trademarks, service marks, logos, domain names, or other distinctive brand features.
* You agree that you will not remove, obscure, or alter any proprietary rights notices (including copyright and trademark notices) that may be affixed to or contained within the SDK.

1. Latest version

The system version is **4.4.** **2**

1. Cloud support (Yes/No)

No

1. Applicability

The Android SDK (Software Development Kit) is a set of development tools that are used **to develop applications for the Android platform**.

1. Drawbacks (if any)

Android Studio is not light weighted. It cannot be used on low configuration machines.

Emulator is very slow.

Takes too long to build and run.

1. Implement linear regression problem using Google colab (Perform preprocessing, training and testing)

Dataset 2- <https://archive.ics.uci.edu/ml/datasets/Air+Quality>