Lab Work 5: Automating Application Launch and Service Management Using Batch Scripting

OBJECTIVE

Develop a batch script to automate the launch of essential applications, manage SQL Server services, and open machine learning lab files. Implement error handling, scheduling, and feedback mechanisms to ensure smooth execution and improve accessibility through automation.

PROCESS

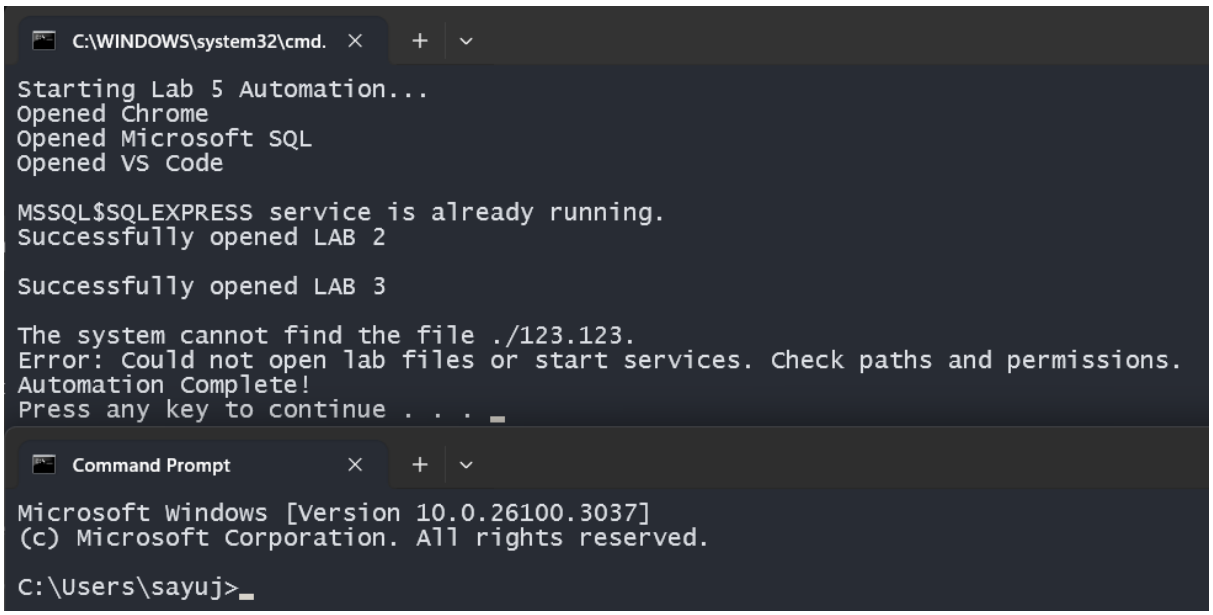
We completed the following task using batch script

1. Batch script to automate the launch of essential applications like Google Chrome, SQL Server tools, and Visual Studio Code.
2. Check the status of the MSSQL$SQLEXPRESS service and display a message if the service is already running or start it if it is not.
3. Navigate and open two lab Python files: Lab 2 Linear Regression and Lab 3 K-Means Clustering
4. Incorporate feedback and error handling for service management and file opening to ensure smooth execution.

SOURCE CODE

```
@echo off
echo Starting Lab 5 Automation...

:: 1. Launch essential applications
start "" "C:\Program Files\Google\Chrome\Application\chrome.exe"
echo Opened Chrome

start "" "C:\Program Files (x86)\Microsoft SQL Server Management Studio 20\Common7\IDE\Ssms.exe"
echo Opened Microsoft SQL

start "" "C:\Users\sayuj\AppData\Local\Programs\Microsoft VS Code\Code.exe"
echo Opened VS Code

:: 2. Check MSSQL$SQLEXPRESS service status
sc query MSSQL$SQLEXPRESS | find "RUNNING" > nul
if %errorlevel%==0 (
  echo MSSQL$SQLEXPRESS service is already running.
) else (
  echo Starting MSSQL$SQLEXPRESS service...
  net start MSSQL$SQLEXPRESS
)
```

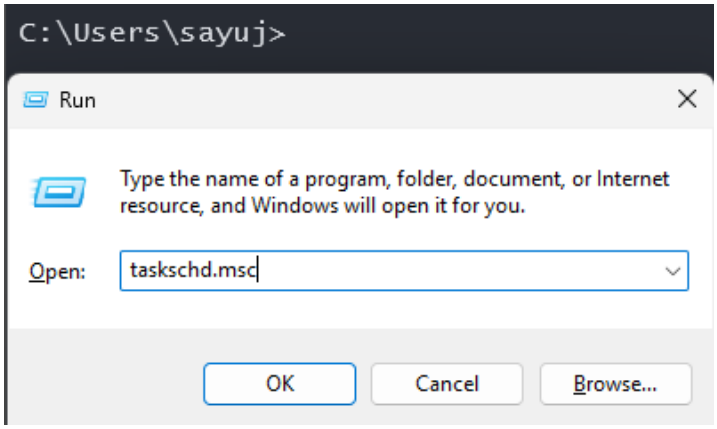
```
:: 3. Navigate and open Python lab files
start ""
"C:\Users\sayuj\OneDrive\Desktop\BIM054\00_BIM_Repo\06_BIM6th\BIS\Lab02\linear_regression.ipynb"
echo Successfully opened LAB 2

start ""
"C:\Users\sayuj\OneDrive\Desktop\BIM054\00_BIM_Repo\06_BIM6th\BIS\Lab03\k_means.ipynb"
echo Successfully opened LAB 3

:: 4. Error Handling
:: False path to generate error
start ""  "./123.123"

if %errorlevel% neq 0 (
   echo Error: Could not open lab files or start services. Check paths and permissions.
)

echo Automation Complete!
pause
```

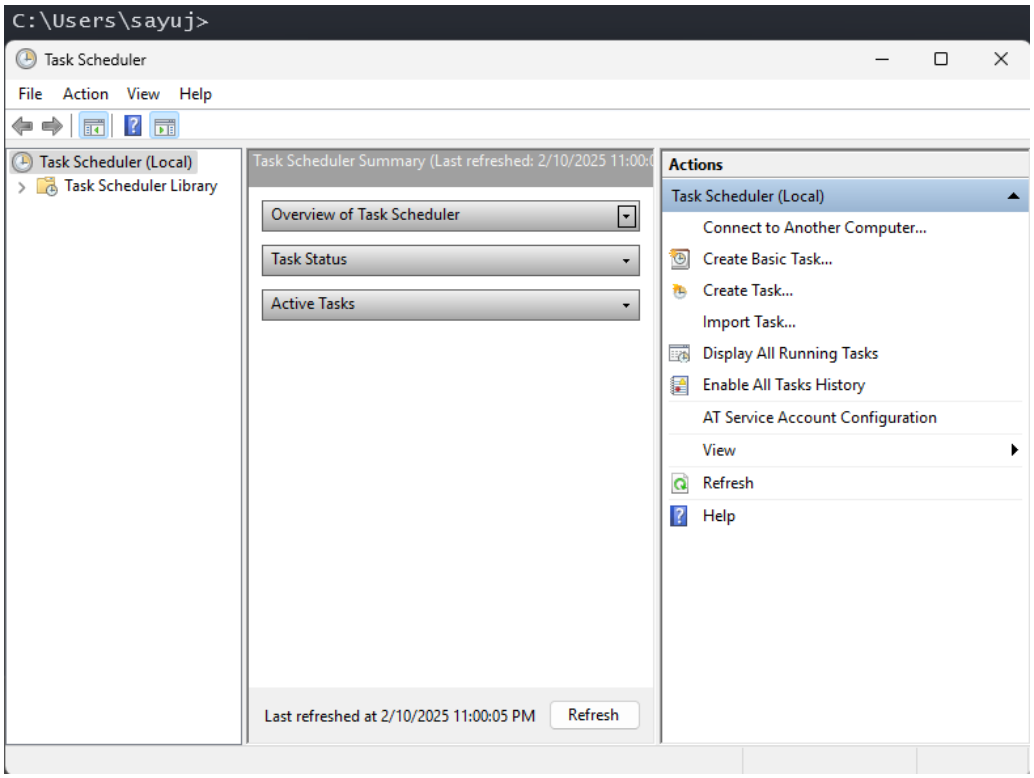


Creating A Schedule to Open the Automation Batch File In Specific Time Period

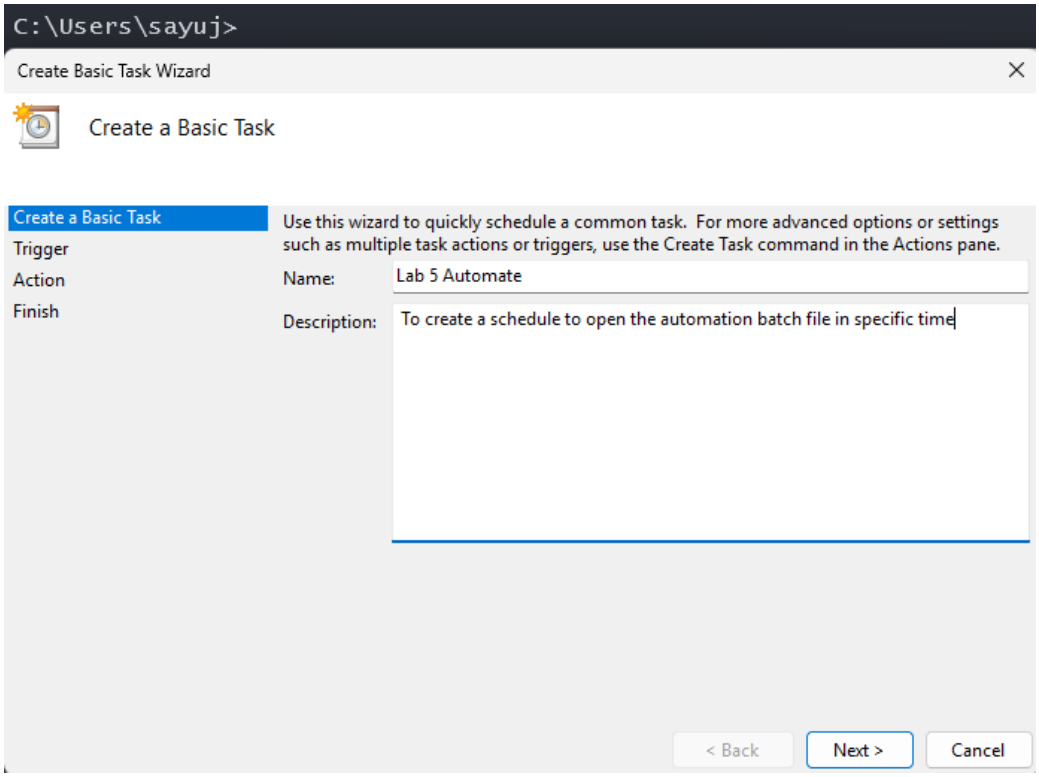
To Open the automation batch file in specific time period, we follow the steps mentioned below on windows:

1. Open Task Scheduler by searching *"taskschd.msc"*.

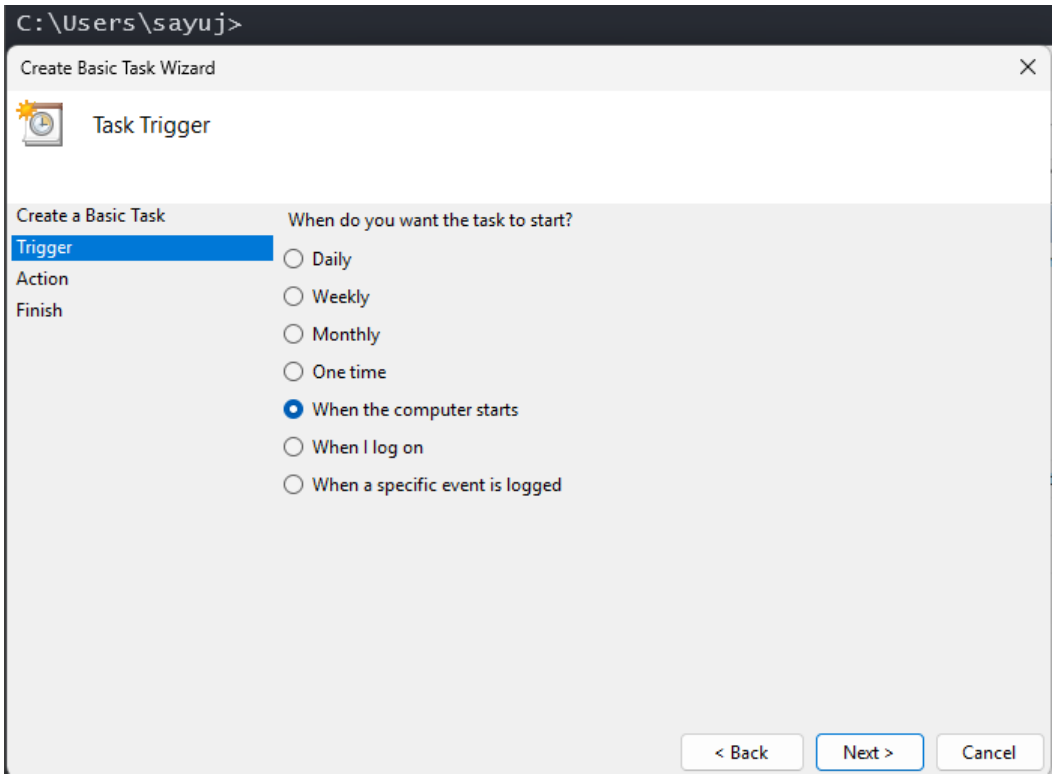




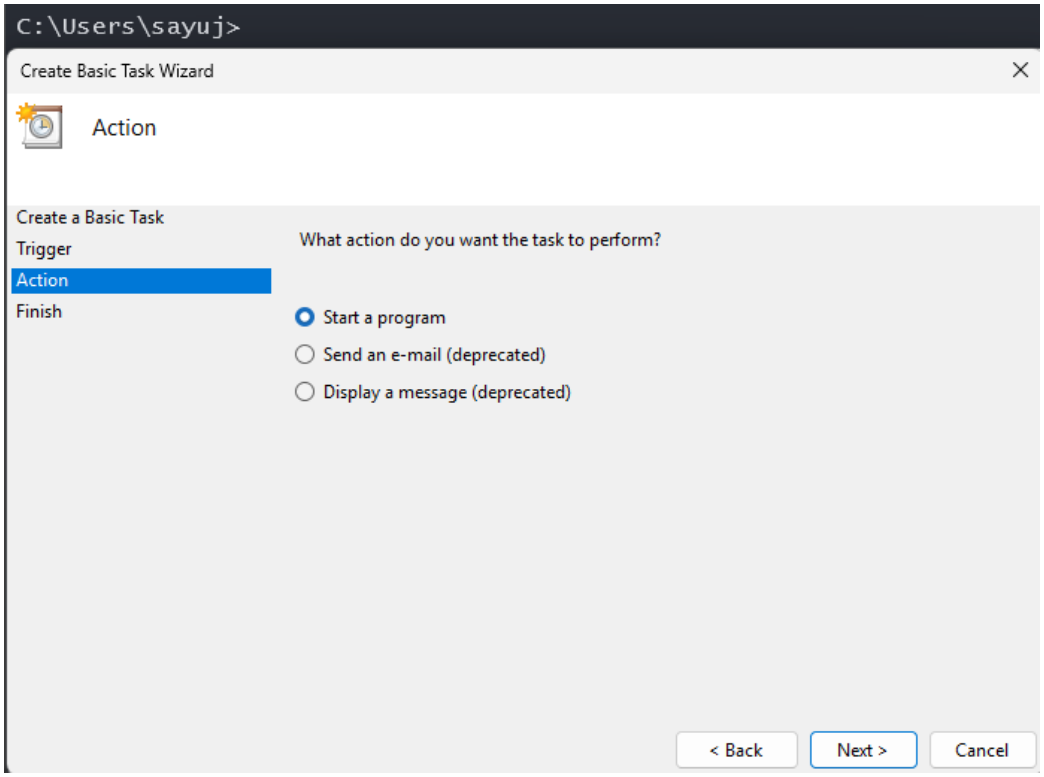
2. Click on Create Basic Task and add name and description



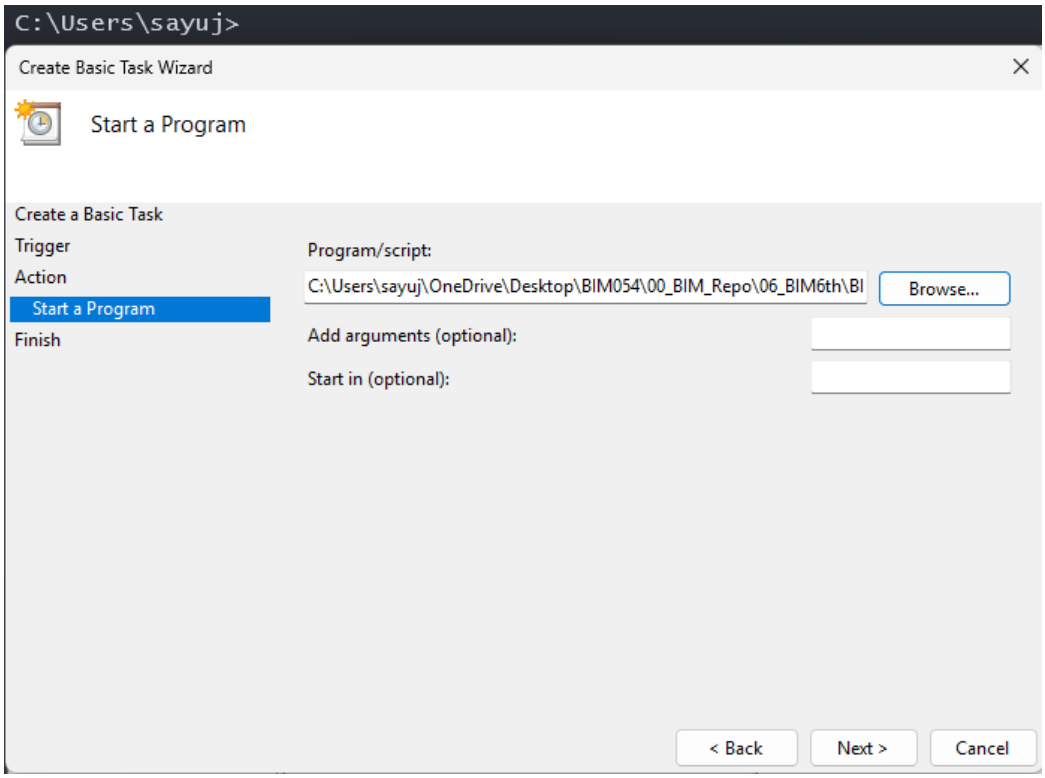
3. Selecting the trigger point or time period to start the task



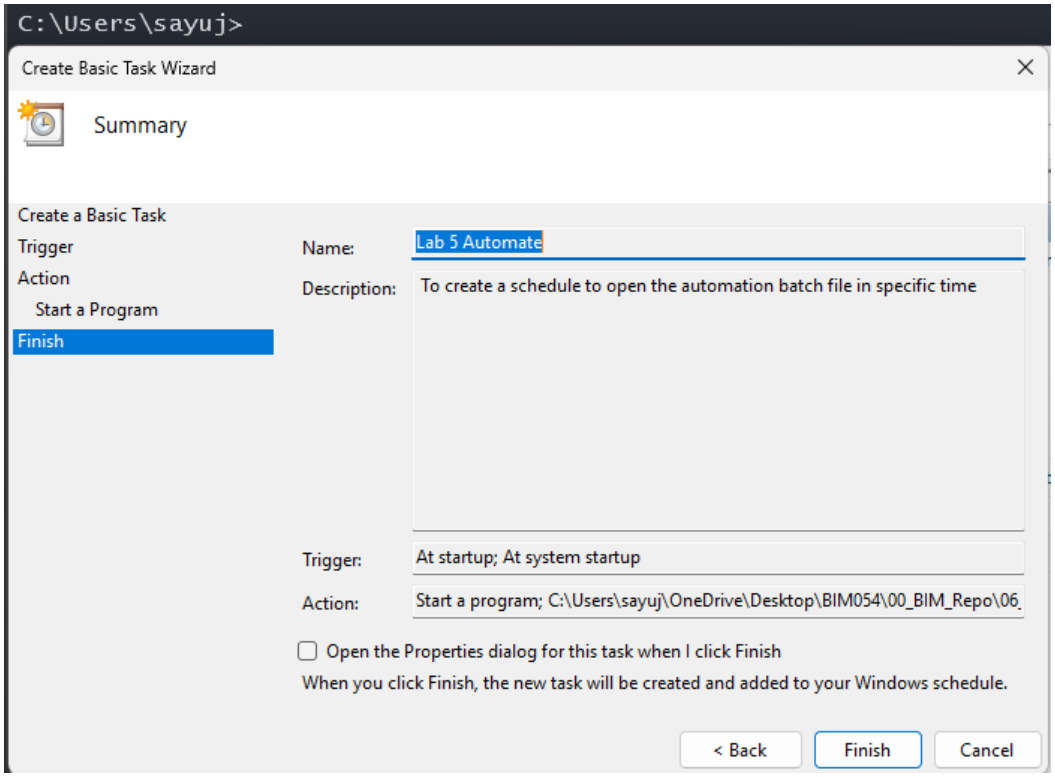
4. Selecting the action



5. Select the batch script to be run



6. Finish!



Use of Batch Scripting to Automate Tasks and Facilitate the Accessibility of Machine Learning Lab Files.

Batch scripting automates repetitive tasks by executing commands in sequence, reducing manual effort and ensuring consistency. In this lab, batch scripting is used to automate the launch of essential applications like Google Chrome, SQL Server tools, and VS Code, enabling a seamless workflow. Additionally, it manages the SQL Server service, ensuring it is running before execution. The script also navigates and opens machine learning lab files, making them easily accessible for students. With built-in error handling and scheduling, this approach enhances efficiency, minimizes errors, and ensures timely execution of tasks, streamlining the machine learning workflow.