

## 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"
```

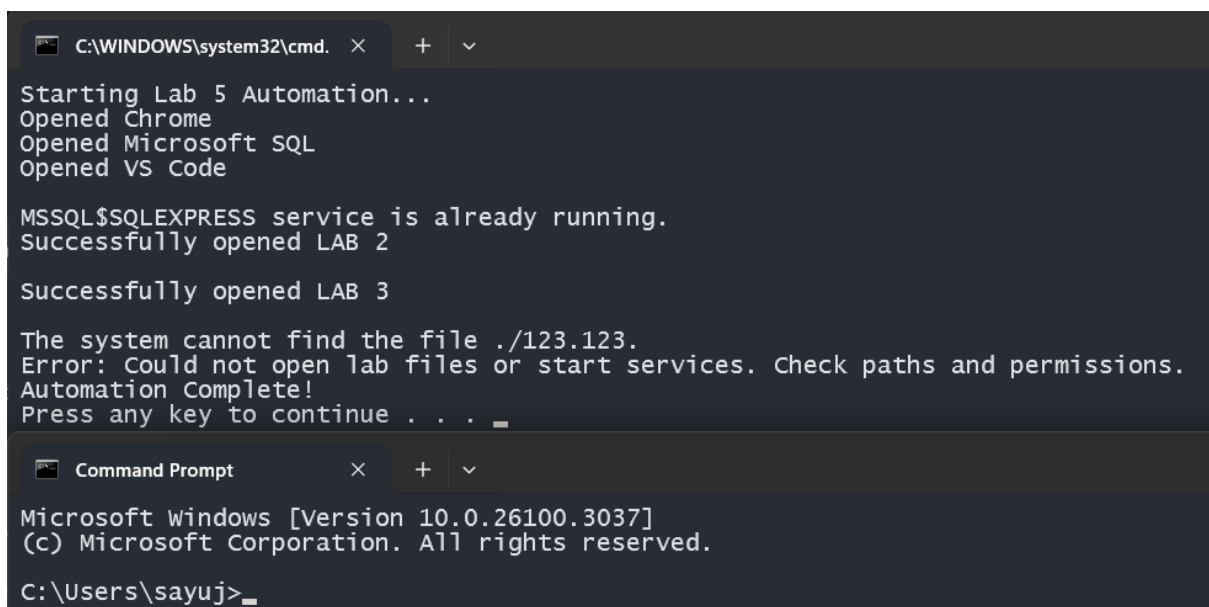
```
if %errorlevel% neq 0 (
```

```
    echo Error: Could not open lab files or start services. Check paths and permissions.
```

```
)
```

```
echo Automation Complete!
```

```
pause
```



```
C:\WINDOWS\system32\cmd. x + v

Starting Lab 5 Automation...
Opened Chrome
Opened Microsoft SQL
Opened VS Code

MSSQL$SQLEXPRESS service is already running.
Successfully opened LAB 2

Successfully opened LAB 3

The system cannot find the file .\123.123.
Error: Could not open lab files or start services. Check paths and permissions.
Automation Complete!
Press any key to continue . . . _

Command Prompt x + v

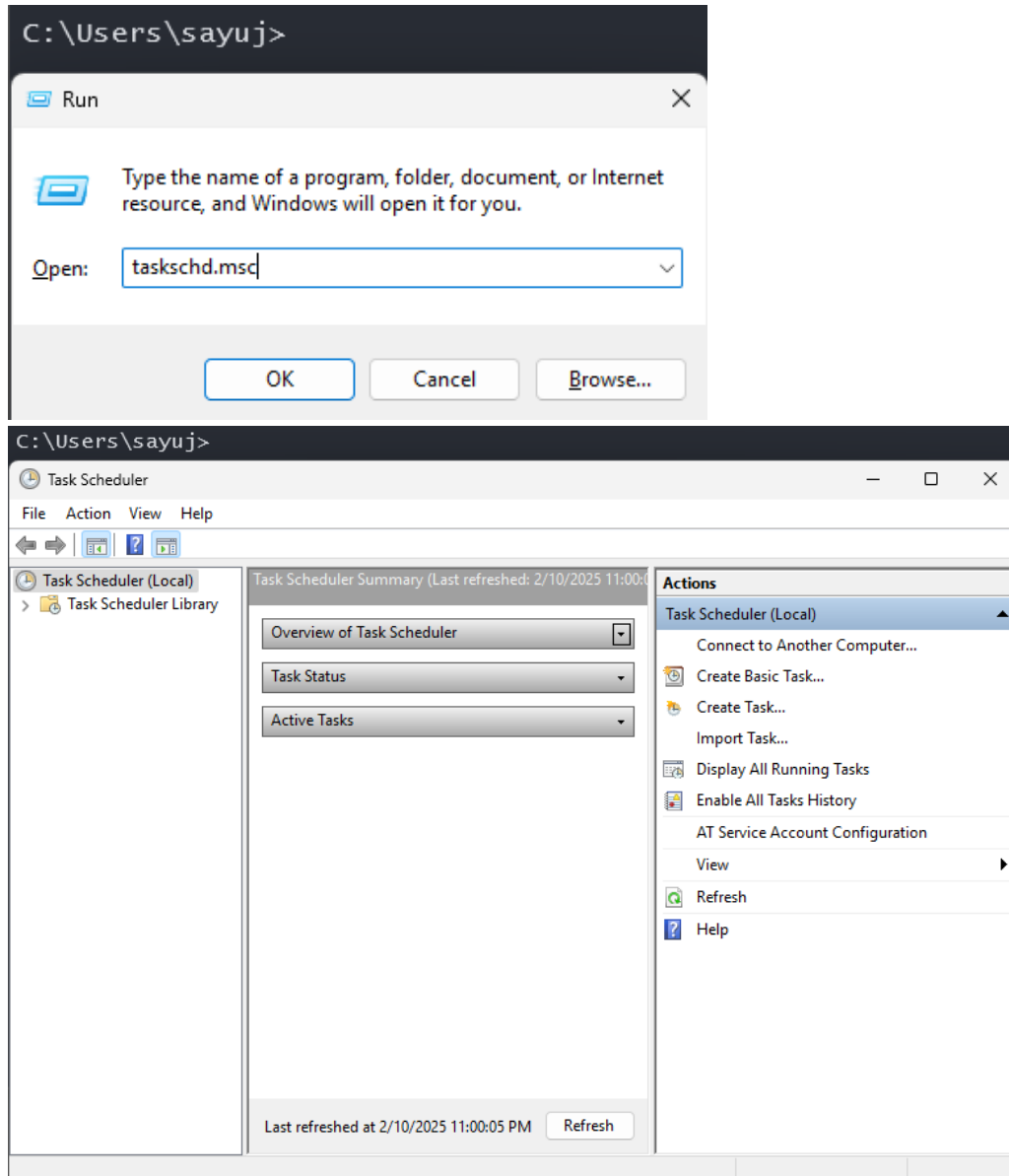
Microsoft Windows [Version 10.0.26100.3037]
(c) Microsoft Corporation. All rights reserved.

C:\Users\sayuj>_
```

## 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”.



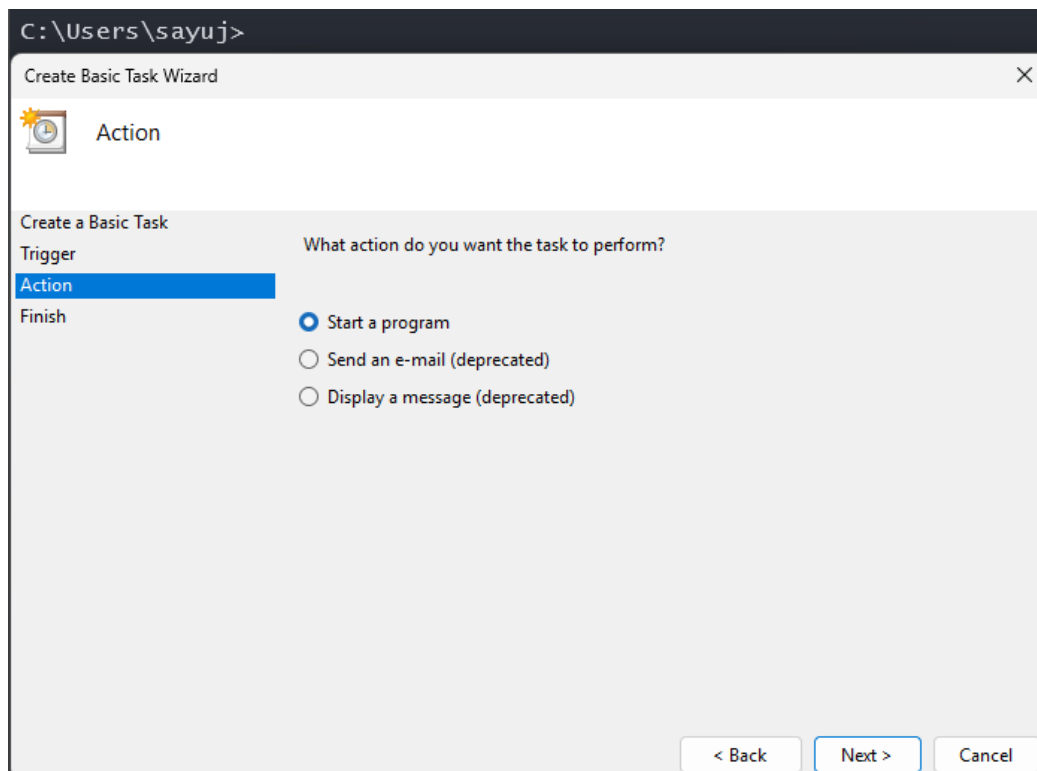
2. Click on Create Basic Task and add name and description

The screenshot shows the 'Create Basic Task Wizard' window. The title bar reads 'C:\Users\sayuj>' and 'Create Basic Task Wizard'. The window has a close button (X) in the top right. Below the title bar is a section with a clock icon and the text 'Create a Basic Task'. The main area is divided into two panes. The left pane has a sidebar with 'Create a Basic Task' (selected), 'Trigger', 'Action', and 'Finish'. The right pane contains instructions: 'Use this wizard to quickly schedule a common task. For more advanced options or settings such as multiple task actions or triggers, use the Create Task command in the Actions pane.' Below the instructions are two text boxes: 'Name:' with the value 'Lab 5 Automate' and 'Description:' with the value 'To create a schedule to open the automation batch file in specific time'. At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

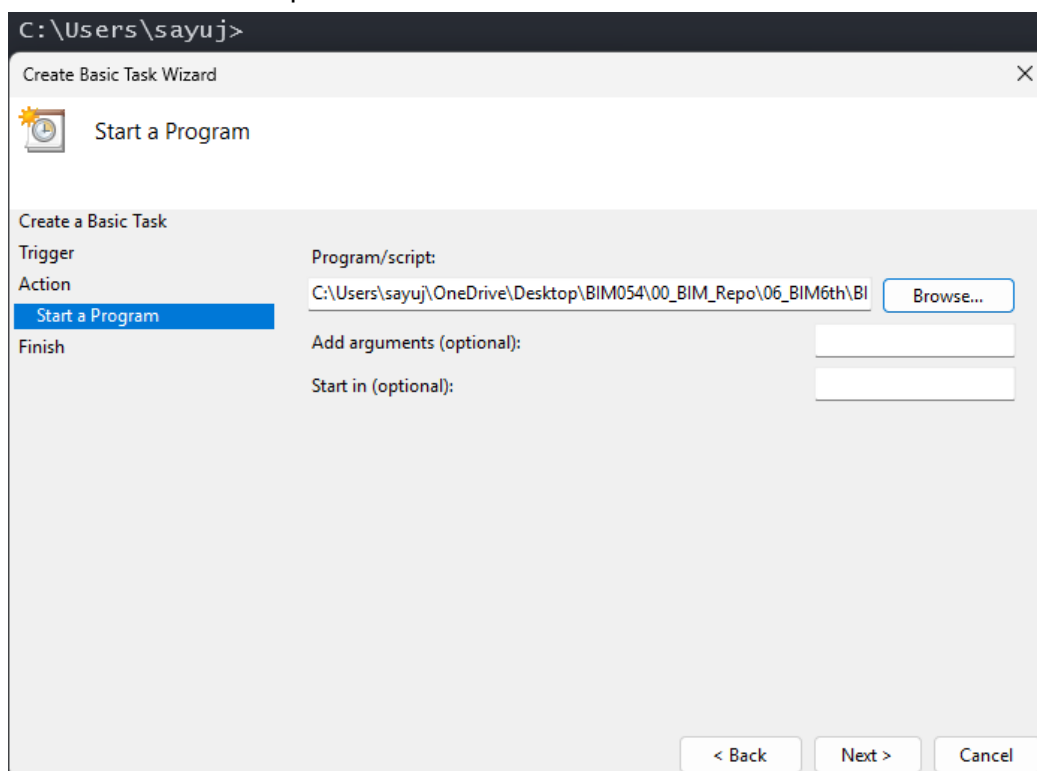
3. Selecting the trigger point or time period to start the task

The screenshot shows the 'Create Basic Task Wizard' window at the 'Task Trigger' step. The title bar reads 'C:\Users\sayuj>' and 'Create Basic Task Wizard'. The window has a close button (X) in the top right. Below the title bar is a section with a clock icon and the text 'Task Trigger'. The main area is divided into two panes. The left pane has a sidebar with 'Create a Basic Task', 'Trigger' (selected), 'Action', and 'Finish'. The right pane contains the question 'When do you want the task to start?' followed by a list of radio button options: 'Daily', 'Weekly', 'Monthly', 'One time', 'When the computer starts' (selected), 'When I log on', and 'When a specific event is logged'. At the bottom right are three buttons: '< Back', 'Next >', and 'Cancel'.

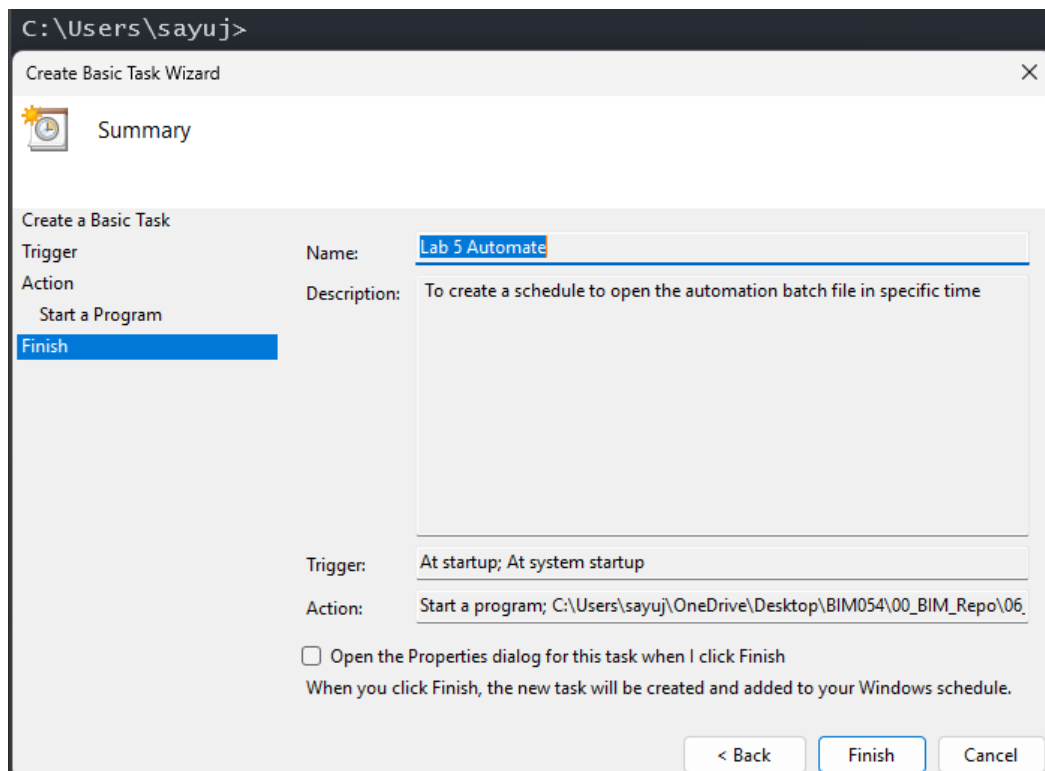
#### 4. Selecting the action



#### 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.