Online Exam Login Failure Analysis

```
import pandas as pd
import numpy as np
```

```
# creating a dummy data set for the online exam login failure analysis
data = {
    'students_id' : [ 'std_01' , ' std_02 ' , 'std_03' ,'std_04','std_05','std_06', 'std_07','std_08','std_09', ' std_10' ]
    'exam_subject': ['Math', 'Physics', 'Chem', 'Math', 'CS', 'English', 'Physics', 'CS', 'Math', 'Chem'],
    'internet_speed_mbps': [50, 5, 100, 8, 200, 2, 45, 150, 10, 60],
    'total_attempts': [1, 5, 1, 4, 1, 6, 2, 1, 3, 1],
    'failed_attempts': [0, 4, 0, 3, 0, 5, 1, 0, 2, 0]
}
```

```
#convert to dataframe and saving
df = pd.DataFrame(data)
df.to_csv('online_exam_data.csv', index=False)
print("csv file 'exam_login_data.csv' created successfully ! ")
```

```
csv file 'exam_login_data.csv' created successfully !
```

```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("exam_login_data.csv")
```

```
#calculate the 'failure_rate"
df["failure_rate"] = df["failed_attempts"] / df["total_attempts"]
```

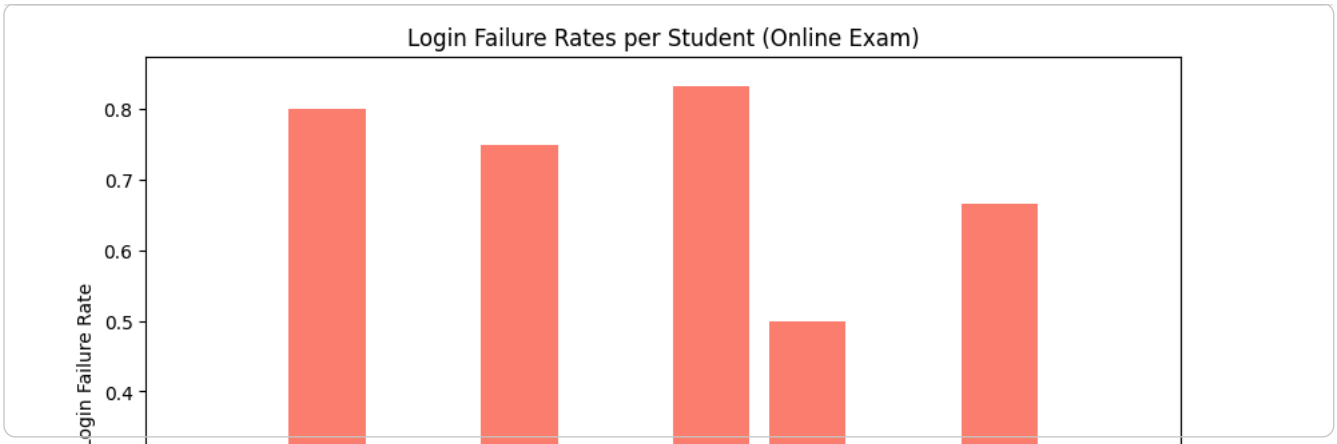
```
#display the data frame
print("dataset of login failure for online exams")
print(df)
```

```
dataset of login failure for online exams
  students_id exam_subject  internet_speed_mbps  total_attempts  \
0      std_01         Math                   50               1
1     std_02       Physics                    5               5
2      std_03         Chem                  100               1
3      std_04         Math                    8               4
4      std_05           CS                  200               1
5      std_06      English                    2               6
6      std_07      Physics                   45               2
7      std_08           CS                  150               1
8      std_09         Math                   10               3
9      std_10         Chem                   60               1

   failed_attempts  failure_rate
0                0      0.000000
1                4      0.800000
2                0      0.000000
3                3      0.750000
4                0      0.000000
5                5      0.833333
6                1      0.500000
7                0      0.000000
8                2      0.666667
9                0      0.000000
```

```
plt.figure(figsize=(10, 6))
plt.bar(df["students_id"], df["failure_rate"], color='salmon')

plt.xlabel("Student ID")
plt.ylabel("Login Failure Rate")
plt.title("Login Failure Rates per Student (Online Exam)")
plt.show()
```


Login Failure Rates per Student (Online Exam)
Login Failure Rate
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
std_01
std_02
std_03
std_04
std_05
std_06
std_07
std_08
std_09
std_10
Student ID