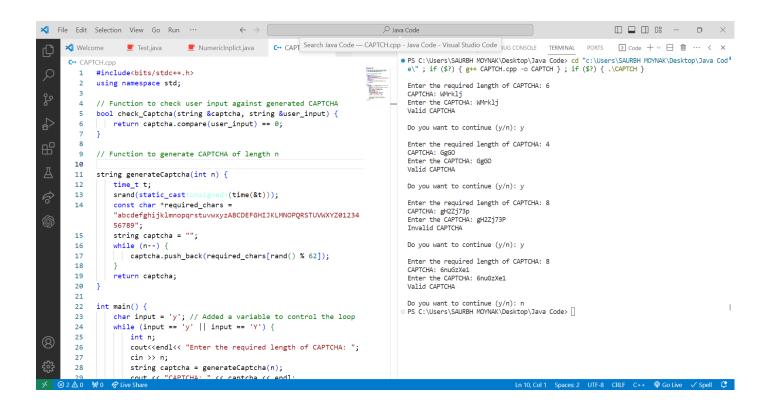


```
Assignment 2:
```

```
#include<bits/stdc++.h>
using namespace std;
// Function to check user input against generated CAPTCHA
bool check_Captcha(string &captcha, string &user_input) {
    return captcha.compare(user input) == 0;
}
// Function to generate CAPTCHA of length n
string generateCaptcha(int n) {
    time_t t;
    srand(static_cast<unsigned>(time(&t)));
    const char *required_chars =
"abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789";
    string captcha = "";
    while (n--) {
        captcha.push_back(required_chars[rand() % 62]);
    }
    return captcha;
}
int main() {
    char input = 'y'; // Added a variable to control the loop
    while (input == 'y' || input == 'Y') {
        int n;
        cout<<endl<< "Enter the required length of CAPTCHA: ";</pre>
        cin >> n;
        string captcha = generateCaptcha(n);
        cout << "CAPTCHA: " << captcha << endl;</pre>
        string user_input;
        cout<< "Enter the CAPTCHA: ";</pre>
        cin >> user_input;
        if (check_Captcha(captcha, user_input)) {
            cout << "Valid CAPTCHA" << endl;</pre>
        } else {
            cout << "Invalid CAPTCHA" << endl;</pre>
        }
        // Ask the user if they want to Continue
        cout <<endl<< "Do you want to continue (y/n): ";</pre>
        cin >> input;
    }
    return 0;
}
```

Output:

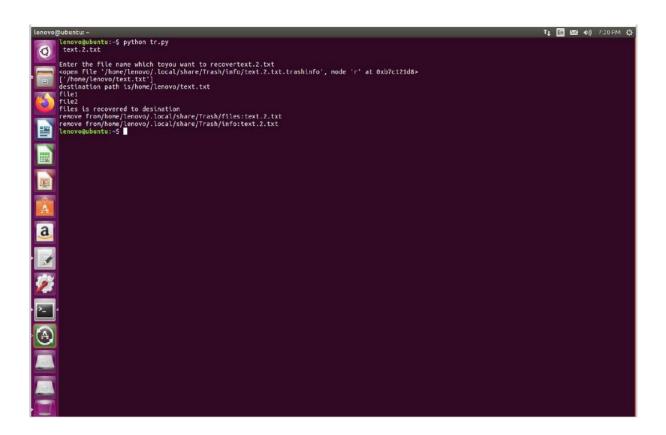


Assignment 3:

```
import os
# Define the path to the disk or drive from which you want to recover deleted files
disk path = '/dev/sdX' # Replace with the actual disk path on your system
# Define a directory where recovered files will be saved
output directory = 'recovered files'
# Create the output directory if it doesn't exist
if not os.path.exists(output directory):
  os.makedirs(output directory)
# Use the 'dd' command to create a disk image for analysis
os.system(f'dd if={disk path} of=disk image.img bs=512')
# Analyze the disk image for deleted files
with open('disk_image.img', 'rb') as disk_image:
  while True:
    # Read data in 512-byte blocks (typical sector size)
    data = disk_image.read(512)
    if not data:
      break
    # Check for file headers or markers that indicate the start of a file
    if b'FILE START MARKER' in data:
      # Extract and recover the file
      start = data.find(b'FILE START MARKER')
      end = data.find(b'FILE END MARKER')
      if start != -1 and end != -1:
         recovered_data = data[start:end + len(b'FILE_END_MARKER')]
        filename =
f'{output_directory}/recovered_file_{len(os.listdir(output_directory))}.dat'
         with open(filename, 'wb') as recovered file:
           recovered file.write(recovered data)
# Close and remove the disk image file
os.remove('disk image.img')
print("Recovery process complete. Check the 'recovered files' directory for the recovered
files.")
```

Assignment No. 3

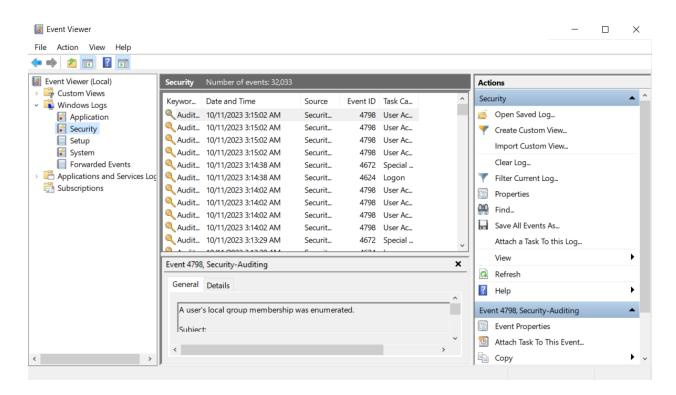
```
csdf3.py > [@] trashinfo_file
    import os
      import re
       path = "/home/lenovo/.local/share/Trash/files"
       infopath = "/home/lenovo/.local/share/Trash/info"
dirlist = os.listdir(path)
                                                                                   # List files in the trash directory
       print("Files in the trash directory:")
for fname in dirlist:
    print(fname)
  10
  11
       12
        if fname in dirlist:
  14
            16
  19
  20
  21
  22
               # Recover the file to the original path
with open(path + "/" + fname, "r") as file_from_trash:
    with open(original_path, "w") as recovered_file:
        recovered_file.write(file_from_trash.read())
  24
  25
26
  27
                # Remove file from trash
os.remove(path + "/" + fname)
os.remove(trashinfo_path)
print("File has been recovered to:", original_path)
  29
  31
            print("Invalid file name. File not found in the trash directory.")
```

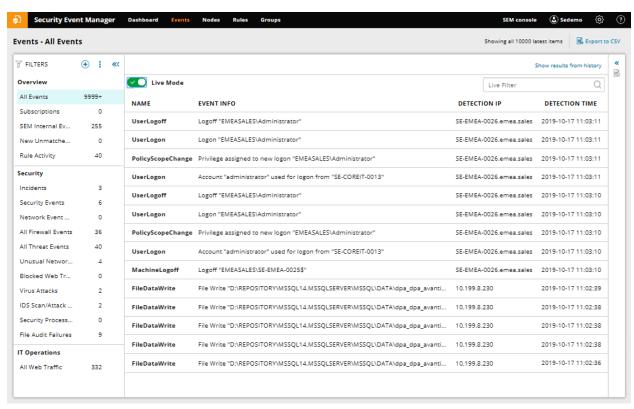


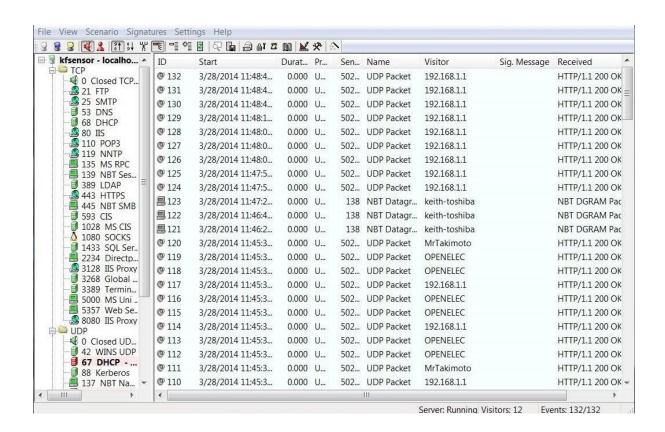
```
Code:
import re
import time
# Define log patterns and corresponding actions
log_patterns = [
        (r'Error', 'Error detected'),
        (r'Warning', 'Warning detected'),
        (r'Success', 'Successful operation'),
1
# Dictionary to store event correlations
event correlations = {}
def process log(log line):
        for pattern, action in log_patterns:
        if re.search(pattern, log_line):
        if action not in event correlations:
               event_correlations[action] = []
        event correlations[action].append(log line)
        return True
        return False
# Simulate log capturing (replace this with actual log source)
log_file = open('log_2.txt', 'r')
for log line in log file:
        log_line = log_line.strip()
        print(log_line)
        if log_line:
        if process_log(log_line):
        print(f"Event Correlated: {log_line}")
# Simulate event correlation results (in a real system, you would take action here)
time.sleep(5)
for action, correlated_logs in event_correlations.items():
        print(f"Action: {action}")
        print("Correlated Logs:")
        for log in correlated logs:
        print(log)
        print()
log_file.close()
```

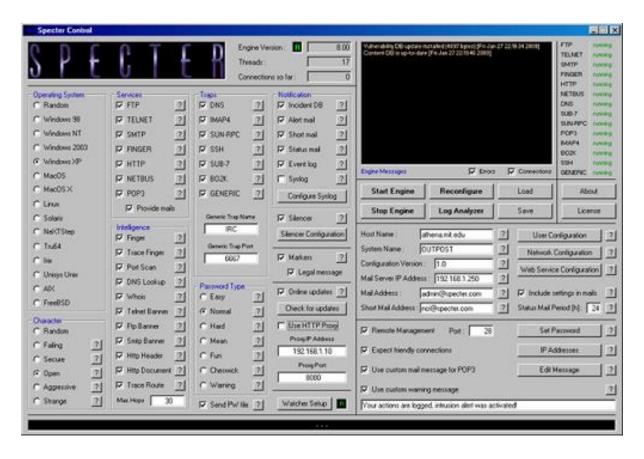
Output:

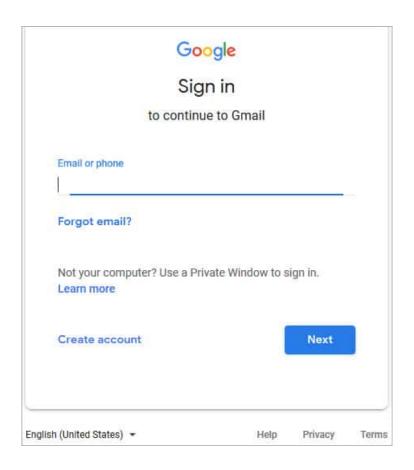
```
[INFO] Successful operation
Event Correlated: [INFO] Successful operation
[ERROR] Error detected: Database connection failed
Event Correlated: [ERROR] Error detected: Database connection failed
[INFO] Successful operation
Event Correlated: [INFO] Successful operation
[WARNING] Warning detected: Disk space is low
Event Correlated: [WARNING] Warning detected: Disk space is low
[ERROR] Error detected: Application crashed
Event Correlated: [ERROR] Error detected: Application crashed
[INFO] Successful operation
Event Correlated: [INFO] Successful operation
Action: Successful operation
[INFO] Successful operation
[INFO] Successful operation
[INFO] Successful operation
Action: Error detected
Correlated Logs:
[ERROR] Error detected: Database connection failed
[ERROR] Error detected: Application crashed
Action: Warning detected
Correlated Logs:
[WARNING] Warning detected: Disk space is low
```

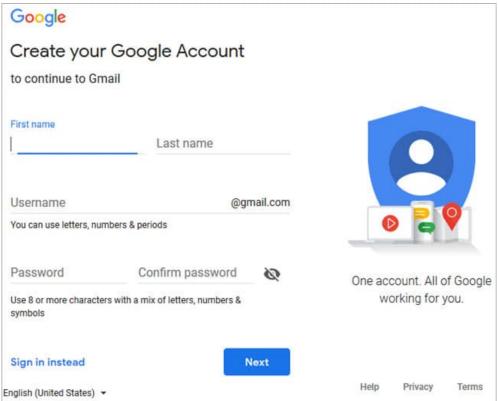












Test Scenario ID	Login-1	Test Case ID	Login-1B
Test Case Description	Login – Negative test case	Test Priority	High
Pre-Requisite	NA	Post-Requisite	NA

Test Execution Steps:

S.No	Action	Inputs	Expected Output	Actual Output	Test Browser	Test Result	Test Comments
1	Launch application	https://www.facebo ok.com/	Facebook home	Facebook home	IE-11	Pass	[Priya 10/17/201 711:44 AM]: Launch successful
2	Enter invalid Email & any Password and hit login button	Email id: invalid@xyz.com Password:*****	The email address or phone number that you've entered doesn't match any account. Sign up for an account.	The email address or phone number that you've entered doesn't match any account. Sign up for an account.	IE-11	Pass	[Priya 10/17/201 711:45 AM]: Invalid login attempt stopped
3	Enter valid Email & incorrect Password and hit login button	Email id : valid@xyz.com Password: *****	The password that you've entered is incorrect. Forgotten password?	The password that you've entered is incorrect. Forgotten password ?	IE-11	Pass	[Priya 10/17/201 711:46 AM]: Invalid login attempt stopped

Category	Label	Value
Bug ID	ID number	#123
	Name	CART - Unable to add new item to my cart
	Reporter	Mike A
	Submit Date	03/04/16
Bug overview	Summary	When my cart contains one item, I am unable to add a second item via the add to cart button on a product page
	URL	www.example.com/product/abc
	Screenshot	www.example.com/screenshot123
Environment	Platform	Macintosh
	Operating System	OS X 10.12.0
	Browser	Chrome 53
Bug details	Steps to reproduce	add one item to cart > go to product abc via the search bar > add new item to cart via "add to cart" button (see screenshot) > go to cart
	Expected result	The cart should contain 2 items
	Actual result	The cart contains only 1 item
	Description	/
Bug tracking	Severity	Major
	Assigned to	/
	Priority	High
Notes	Notes	/

Bug report sample 1: Web Project bug report

Summary: In CTR (Click through ratio) 'Total' row calculation is wrong

Product: Example product

Version: 1.0

Platform: PC

URL: (Provide url of page where bug occurs)

OS/Version: Windows 2000

Status: NEW

Severity: Major

Priority: P1

Component: Publisher stats

Assigned To: developer@example.com

Reported By: tester@example.com

CC: manager@example.com

Bug Description:

Reproduce steps:

- 1) Go to page: (Provide URL of page where bug occurs)
- 2) Click on 'Publisher stats' link to view publisher's revenue detail stats date wise.
- 3) On page (Provide URL of page where bug occurs) check CTR value in 'Total' row of CTR stats table.

Actual result: Calculation of 'Total' row in CTR table is wrong. Also Individual row CTR for each publisher is not truncated to 2 digits after decimal point. It's showing CTR like 0.042556767.

Expected result: Total CTR= (Total clicks/Total searches)*100

[Attach bug screenshot if any]

Please fix the bug.

Sample bug report 2: Application product Bug report sample

Application testing scenario:

Lets assume in your application you want to create a new user with his/her information, for that you need to logon into the application and navigate to USERS menu > New User, then enter all the details in the User form like, First Name, Last Name, Age, Address, Phone etc. Once you enter all these need to click on SAVE button in order to save the user and you can see a success message saying, "New User has been created successfully".

Now you entered into your application by logging in and navigate to USERS menu > New user, entered all the information and clicked on SAVE button and now the application crashed and you can see one error page on the screen, now you would like to report this BUG.

Now here is how we can report bug for above scenario:

Bug Name: Application crash on clicking the SAVE button while creating a new user.

Bug ID: The BUG Tracking tool will automatically create it once you save this.

Area Path: USERS menu > New Users

Build Number:/Version Number 5.0.1

Severity: HIGH (High/Medium/Low)

Priority: HIGH (High/Medium/Low)

Assigned to: Developer-X

Created By: Your Name

Created On: Date

Reason: Defect

Status: New/Open/Active – Depends on the Tool you are using

Environment: Windows 2003/SQL Server 2005

Description:

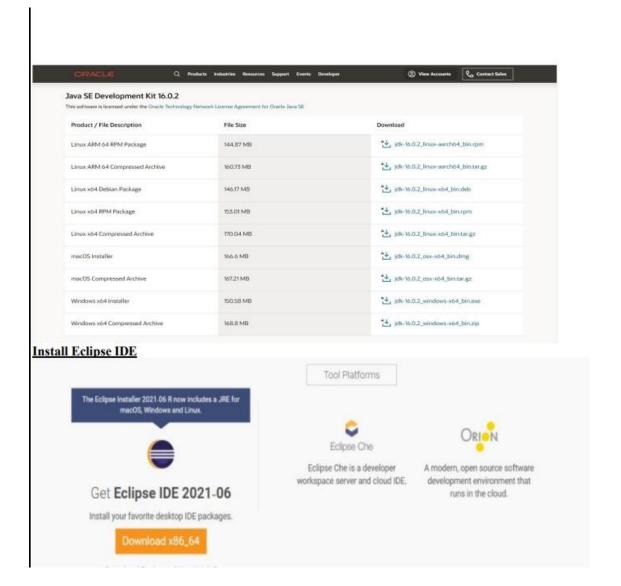
Application crash on clicking the SAVE button while creating a new user, hence unable to create a new user in the application.

Steps To Reproduce:

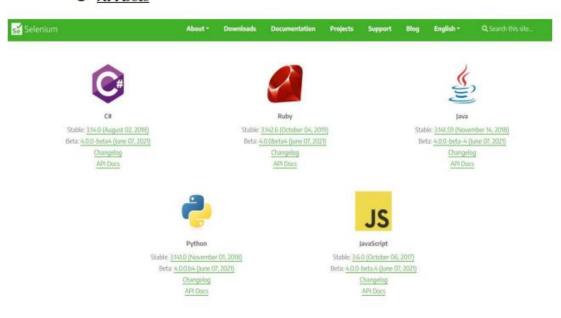
- 1) Logon into the application
- 2) Navigate to the Users Menu > New User

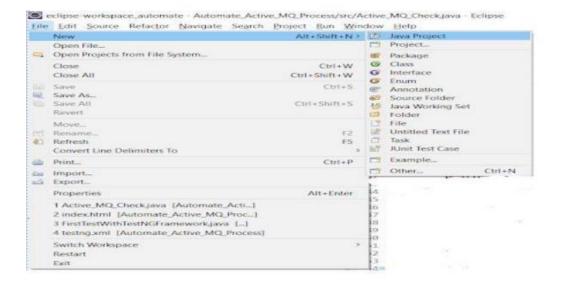
- 3) Filled all the fields
- 4) Clicked on 'Save' button
- 5) Seen an error page "ORA1090 Exception: Insert values Error..."
- 6) See the attached logs for more information
- 7) And also see the attached screenshot of the error page.

Expected: On clicking SAVE button should be prompted to a success message "New User has been created successfully".



O API Docs





Brief Requirements Specification: Online Education Portal

Background: I own an expanding UK-based company which provides online English teaching services to companies and individuals in Russia.

Objective: To hire and properly monitor a team of English teachers in the UK, ensure student/teacher loyalty and cope with an expanding client base.

Maximum Load: 20 teachers, 200 students, 10 classes conducted simultaneously.

Current website: www.englishinrussia.ru

Site concept: Online education portal for Russian learners of English.

Competitors: http://www.englishdom.com, http://www.english-natali.ru

Features to be added:

- Stand-alone server software in addition to the existing webserver.
 - Platform is subject to discussion
 - Its URL can be different from main website
 - Russian language support is a must
- 2) On-site web-conferencing system similar to Skype, but simpler. This is an essential element of the site to guarantee control of the teaching process and to maintain teacher/student loyalty.
 - Ability to save information about classes: teacher, student, topic, start/end date and time, mark, comment
 Two-way video stream

 - Quality audio
 - Text chat
 - Screen share
 - Whiteboard functionality
 - Option of recording lessons

3) Back office for registered students.

- Real-time updated student timetables
- Teacher availability timetables
- Payment system
- Lesson booking and links to payment system
- Teacher profiles with samples from lessons (embedded video, audio)
- Internal messaging system for sending homework and questions/answers between students and teachers with the option of attaching files.

WinPure option or anthening tries!

- 4) Payment system. Payment for lessons and courses online (similar to this: http://www.englishdom.com/en/cost).
- 5) Online test functionality. Interactive exercises in the form of multiple choice questions (similar to this: http://cliomsk.com/on-line-test). This should be created as a customisable template, which can be used to create other interactive exercises by study topic.

- Ability to monitor who is currently online, who is in the virtual classrooms.
- Recorded lessons with start date/time and duration
- Payments list within a selected period, teacher or student.
- Teacher workload statistics for every teacher
- Report on student: classes with marks
- Online test results.
- Message logs.
- System log.

Configuration.

- User page
- Student profiles
- Teacher profiles
- Online test templates
- Hourly rates for every teacher