CS 213: System Software Lab
Autumn 2024, IIT Dharwad
Assignment-8

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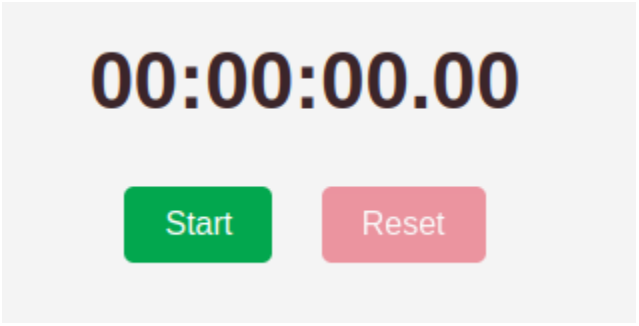
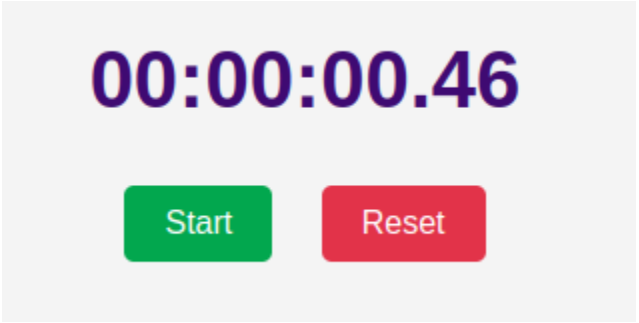
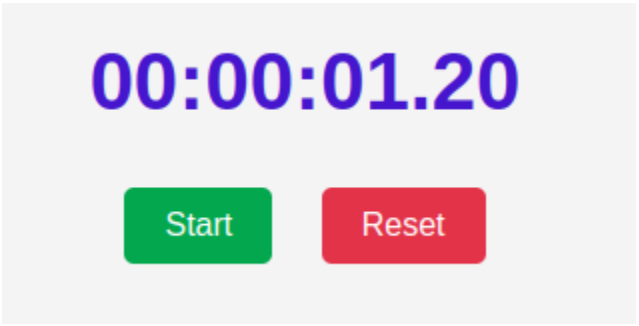
1) Write a script that monitors CPU and memory usage every minute. If CPU usage is above 80% or memory usage is above 90%, send an alert message. **[5 Marks]**

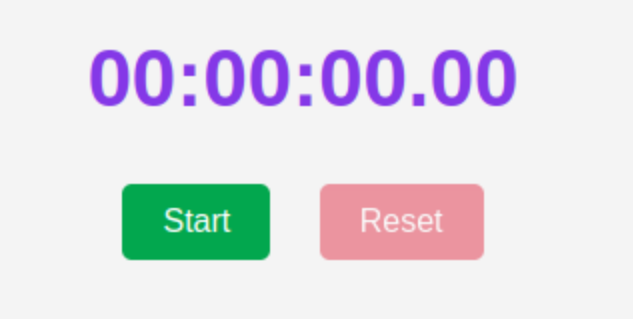
2) Generate latex for the given sample.pdf **[5 Marks]**

3) Create a dynamic and interactive stopwatch with the following requirements.
The stopwatch should display time in HH:MM:SS.mm format where HH represents hours,MM represents minutes, SS represents seconds and MM represents milliseconds.
Implement the toggle button to start and stop the stopwatch.add reset button the clears stopwatch time to 00:00:00.00.
Update the color of time displayed each time with a random color. **[12 Marks]**









You can observe different colors for different times. For every millisecond it should change.

4. Provide all the commands with screenshots attached for this question(Create a directory called project then create some files in it with some content, and then do all the below mentioned operations in it).Before entering to branching make sure to initialize ,add and commit the files with some content) (attach screenshots of initialization too before entering to part a) **[8 Marks]**

a) In terminal

1) Create a branch named *src* ,then list all branches.
2) Then switch to *master* branch
3) Then again create a branch named *new* and merge the created branch into *master* branch.
4) Show the difference in commit history between new and master branches

b) In browser and in terminal

1) Create and Open your github account
2) Then click on new repository and give name to it as *sslassignment*
3) You can mark it as public or private and then click on create repository,then in terminal by using add github remote repository and push your code to the master branch.

5. Create a table as **Sale_details** and add the following:

sale_id	product_id	quantity_sold	sale_date	total_price
1	101	5	2024-01-01	2500.00
2	102	3	2024-01-02	900.00
3	103	2	2024-01-02	60.00
4	104	4	2024-01-03	80.00
5	105	6	2024-01-03	90.00

Create a table as **Product_details** and add the following:

product_id	product_name	category	unit_price
101	Laptop	Electronics	500.00
102	Smartphone	Electronics	300.00
103	Headphones	Electronics	30.00
104	Keyboard	Electronics	20.00
105	Mouse	Electronics	15.00

Write the SQL query to perform the following queries: **[10 Marks]**

a. Obtain the total revenue generated from sales of products in the 'Electronics' category.
b. Obtain the product_name and total_price from the Sales_details table, calculating the total_price as quantity_sold multiplied by unit_price.
c. Determine the products with total sales more than 30.
d. Determine the sales where the quantity sold exceeds the average quantity sold.
e. Determine the details of Product_details (name, category, unit price) for products that have a quantity sold above the average quantity of products sold.

Instructions:

- Posted on: 14/11/2024
- Due date: 18th November 2024 (11:59 PM)
- The assignment is available in the drive folder and in the moodle.
- The mode of submission is Moodle. Any other kind of submissions are not accepted.
- Formats of all questions
  Q1- script1.sh, Q2- main.tex, Q3- 3.html, 3.css, 3.js, Q4- rollnum_git.pdf (with screenshots attached), Q5- rollnum_mysql.pdf (with screenshots attached), a **Q4 and Q5 format.pdf** is provided for your reference)
- There will be a 100% penalty for plagiarism.
- Introducing irrelevant code is considered as malpractice.