



APPLICATION-ORIENTED C PROGRAMMING FOR VARIOUS PROBLEM STATEMENTS

1. **Bank transaction system: Develop a menu-driven C programme for XYZ bank, simulating at least five operations on a customer account.**

James has recently joined as a systems programmer at the famous XYZ bank, which deals with a number of transactions per day. As a newly hired employee, he was required to undergo rigorous training in all the departments of the bank, irrespective of the department he was deputed to work in, as stipulated by the bank's working policy. Once the training was completed, the manager of the bank asked James to develop a simple menu-driven C programme to show a list of minimum five operations that can be performed on a customer account based on the customer's choice of operation selection. Help James complete the assignment so that he can succeed in his job.

2. **Traffic light simulation: Help Shine create a C programme that demonstrates the working process of a traffic light system.**

Shine's dream of joining the police department and serving the nation came true when she was appointed as the IT Sectional Manager for the legal department. As a regular exercise, all the newly joined candidates have to serve in various legal sections as a part of the training. The main motive of this type of training is to help the candidates in all the various sections get to know the inter-departmental working process. On completion of the training, the candidate must develop a simple situational-based C programme. Shine has been assigned the task of developing a C programme to showcase the traffic light working process. Help Shine successfully complete the task.

3. **Bird-watching programme: Assist Pari in building a C programme that reads and analyses bird sightings data from a wildlife sanctuary.**

Pari wanted to work as a wildlife expert, as it was her childhood dream. After graduating as an ecologist with a minor in application development, she started looking for opportunities as an ornithologist and applied to a few positions at various wildlife sanctuaries across the globe. Luckily, she received a positive response from a wildlife sanctuary that is well-known for its bird migration. Her job was a little different than her expectations, but it was a good start for her career. She received the opportunity to be an application programmer. She has been assigned a task to showcase her skills by building a simple bird-watching programme. Her job is to build a C programme that reads a file containing 12 lines of bird sightings and totals all of them for a year. Help Pari build the programme so that she can start her career.

4. **Astrophotography journey: Develop a C programme for Mr. and Mrs. Jack to calculate the length of a trip to photograph the moon based on travel time.**

Mr. and Mrs. Jack are famous techie astro-photographers who decided to make their passion a profession and started to look for opportunities that would help them showcase their talent. When they received an opportunity to work for the National Aeronautics and Space Administration (NASA), their dream came true. They are required to submit a simple programming exercise and submit the same to the project manager. The task is to build a C programme that calculates the length of a trip to take images around the moon based on the time it takes to travel there and return. Help the couple complete their task so that they can start their space photography journey.

5. **Fuel tank monitoring: Aid Mini in creating a C programme that monitors fuel levels in a petrol station tank and issues a warning when the supply drops below 10%.**

Mini is a petrol system analyst and enthusiast, and works as a freelance consultant for a varied number of petrol stations to monitor their fuel tank systems. She is also required to alarm the people prior to the occurrence of any untoward incidents. She has received a contract from a petrol station to build a programme that keeps track of the amount of fuel in a tank through monitoring, and if the supply goes below 10% of the tank's capacity, a warning must be issued. Assist Mini in completing her task.