# Merlin Home Assignment

# The purpose of this assignment is to help us evaluate your capabilities and working style. While simplified, the task is designed to reflect the nature of the role and provide a glimpse into the type of challenges you may encounter as part of your day-to-day responsibilities.

# You are not expected to spend more than a few hours on this task. Please return your completed assignment within 72 hours of receiving it.

# Mission & Timeline

You have 72 hours from receiving this brief to deliver a working, publicly-reachable demo.

**Deliverables**

* A live web app implementing both services below.
* ≤ 10-min Loom walkthrough of all flows.

**Where to host**Any PaaS you like – Render, Fly.io, Railway, Vercel, Heroku, etc. (free tiers welcome).

# General Requirements (apply to the whole project)

* Stack: Any language / framework – pick what lets you move fastest.
* Auth: Simple e-mail + password sign-up & login (no social/OAuth).
* Instagram API: Use the free-tier “Instagram – Best Experience” on RapidAPI. Create your own RapidAPI account + key.
* Public profiles only: Both services must silently reject private Instagram accounts.

# **Service #1 – InstaTracker**

Purpose  
Monitor a public Instagram account and e-mail the user whenever that account starts following someone new.

Functional Flow

1. Add Tracker UI  
   * Fields: Ask the user to insert Instagram @username and e-mail address for notifications.
2. On submit  
   * Fetch profile via RapidAPI.
   * Reject if: private, > 100 following, already tracked, or user already tracks 3 accounts.
   * Store baseline following list in DB.
3. Background polling  
   * Cron Job: every 60 minutes per tracked profile in production (OK to shorten to 1 min locally while testing).
   * Steps: fetch current following, diff vs. baseline, e-mail if new users found, update baseline.
4. Notification email  
   * In case you spot a change – create an email notification mechanism that sends an email to the given address saying there was a change and who is the new account.
5. Dashboard – table listing  
   * Instagram @username
   * Current #following
   * Notification e-mail
   * “Remove”

Service-specific Tech

* E-mail delivery: Set up any free tier (SendGrid, Mailgun, Gmail SMTP, etc.). Include config in .env.example.
* Cron / Scheduler: Use your preferred tool (native cron, Celery Beat, Sidekiq, serverless scheduler, etc.).

# **Service #2 – No Baby No Cry**

Purpose  
 Detects whether the latest 12 posts of a public Instagram profile contain images with babies/toddlers (≈ 0–3 yrs).

Functional Flow

1. User inputs Instagram @username.
2. Backend fetches URLs of the most recent 12 posts via RapidAPI.
3. For each image URL, call OpenAI for analysis.
4. Collect URLs where the answer is YES.
5. UI response:  
   * If any → list of clickable links.
   * Else → “No baby images detected.”

OpenAI  
 We will provide OPENAI\_API\_KEY; you integrate the image-analysis calls.

**Good luck – show us what you’ve got!🚀**