Qualifier 1 | Chitkara University 2026 | Class of 2027
Date - 10 Feb 2026

Total Time – 120 minutes

IMPORTANT — READ CAREFULLY

Each of the following carries marks independently:

- Strict API response structure
- Correct HTTP status codes
- Robust input validation
- Graceful error handling (no crashes)
- Security guardrails
- Public accessibility of APIs

Hidden test cases will evaluate:

- Error codes
- Boundary conditions
- Security edge cases
- Structure consistency

Objective
Develop and host two REST APIs:

POST /bfhl
GET /health

Allowed Tech Stack
You may implement the APIs using:

- Node.js
- Java
- Python

Any framework is acceptable.

POST /bfhl — Functional Keys

Each request will contain exactly one of: fibonacci, prime, lcm, hcf, AI

Logic Mapping

Key	Input	Output
fibonacci	Integer	Fibonacci series
prime	Integer array	Prime numbers
lcm	Integer array	LCM value
hcf	Integer array	HCF value
AI	Question string	Single-word AI response

Mandatory Response Structure

All successful POST responses must contain:

```
{
 "is_success": true,
 "official_email": "YOUR CHITKARA EMAIL",
 "data": ...
}
```

Errors must return appropriate HTTP status codes and is_success = false.

Request and Response Examples

```
Request:
{
  "fibonacci": 7
}

Response:
{
  "is_success": true,
  "official_email": "YOUR CHITKARA EMAIL",
  "data": [0,1,1,2,3,5,8]
}
```

Request:

```
{
  "prime": [2,4,7,9,11]
}
```

Response:

```
{
  "is_success": true,
  "official_email": "YOUR CHITKARA EMAIL",
  "data": [2,7,11]
}
```

Request:

```
{
  "lcm": [12,18,24]
}
```

Response:

```
{
  "is_success": true,
  "official_email": "YOUR CHITKARA EMAIL",
  "data": 72
}
```

Request:

```
{
  "hcf": [24,36,60]
}
```

Response:

```
{
  "is_success": true,
  "official_email": "YOUR CHITKARA EMAIL",
  "data": 12
}
```

Request:

```
{
  "AI": "What is the capital city of Maharashtra?"
}
```

Response:

```
{
  "is_success": true,
  "official_email": "YOUR CHITKARA EMAIL",
```

```
  "data": "Mumbai"
}
```

GET /health Example

```
{
  "is_success": true,
  "official_email": "YOUR CHITKARA EMAIL"
}
```

AI Integration

You must integrate an external AI API such as Google Gemini, OpenAI, or Anthropic.

Steps to Acquire Google Gemini Free API Key

1. Visit https://aistudio.google.com
2. Sign in with Google account
3. Click Get API Key
4. Create API key in project
5. Copy the key

GitHub Repository Guidelines

- Repository must be public
- Must contain full source code
- Share GitHub repository URL along with deployed API links

Deployment Steps (Add After Development)

Vercel:

1. Login → New Project → Import repository
2. Configure runtime
3. Deploy and copy public URL

Railway:

1. New Project → Deploy from GitHub
2. Select repository
3. Configure variables
4. Deploy and copy URL

Render:

1. New Web Service → Select repository
2. Choose runtime
3. Set build & start commands
4. Deploy and copy URL

ngrok may be used temporarily for testing. URLs expire and require the local server to remain running.

Final Notes

Structure, robustness, and production readiness are key evaluation factors.