1. System Assumptions

* **Front-end:** Front-end is out of scope.
* **Back-end:** Back-end can connect directly to Database without any APIs.
* **Payment Service**: Is mocked. No real payment gateway integration is required. It should simulate both success and failure cases.
* **Email Service**: Is mocked. Only needs to return success response or log the content of the email.
* **Production Service**: Internal service that processes the order is mocked. Can simulate both success and failure.
* **Invoice Service**: Mocked invoice creation. No need for real accounting system.
* **Authentication**: Not in scope. Assume all requests are from valid users.
* **Email Format**: Simple text email without templates or attachments.
* **Timezone**: Not considered. All timestamps are assumed to be in UTC or system time.

1. Bussines Assumptions

* **Order Data**: Orders are assumed to be pre-created. The system does not handle order creation. Each order can only be checked out once.
* **Tax**: Each product may have tax rate or not. Tax rate can be different between different products.
* **Search & Filter:** Search with suggestions and filter can be done by front-end.
* **Order Submit:** User can submit many Orders at the same time. Logs must be detailed for each Order.
* **Order Submit Susscessful Status:**
  + Total Success: When Payment, Email and Invoice API Calls are all successful
  + Partial Success: When Payment API Call is success, at least one of Email and Invoice API Calls is fail. The process of re-fund or retry of Email / Invoice service is not in the scope.
  + Failure: When Payment API Call is fail

1. Other APIs Assumptions:
2. All other APIs have the same Response as follows:

{

StatusCode: [int] – Status Code

IsSuccess: [bool] – API response

Message: [string] – API response message

Data: [string] - API response data with json format (can be parsed to JObject)

}

1. The input of other APIs as follows

* Payment API

{

orderId: [Guid]

}

* Email API

{

customerId: [Guid]

orderId: [Guid]

}

* Invoice API

{

customerId: [Guid]

orderId: [Guid]

}

* Product API

{

customerId: [Guid]

orderId: [Guid]

}