Part 2.1

An example of a Dict[‘message’, Message] is commented in code. I used a List[Message] with an id for primary key.

The autoincrement and overwrite protection:

INFO: attempt to get message with message\_id 1

ERROR: attempt to create message with id 1 - already exists.

Auto-incrementing - new id is 4

INFO: 127.0.0.1:50536 - "POST /api/create HTTP/1.1" 201 Created

Part 2.2

INFO: get all messages (count: 3)

INFO: 127.0.0.1:50531 - "GET /api/get\_messages HTTP/1.1" 200 OK

INFO: Waiting for application startup.

INFO: Application startup complete.

INFO: get all messages (count: 0)

ERROR: no messages

INFO: 127.0.0.1:50499 - "GET /api/get\_messages HTTP/1.1" 404 Not Found

Part 2.3

INFO: Waiting for application startup.

INFO: Application startup complete.

INFO: attempt to get message with message\_id 6

ERROR: message 6 not found

INFO: 127.0.0.1:50504 - "GET /api/get/6 HTTP/1.1" 404 Not Found

Part 2.4

INFO: 127.0.0.1:50674 - "PATCH /api/update/5 HTTP/1.1" 404 Not Found

INFO: old message id=2 to\_address='Ahmed@unitec.ac.nz' from\_address='Fran@unitec.ac.nz' copy\_to='' subject='This is the subject of the message' text='This is the text of the message' attachment='file://thisherefile.txt'

INFO: new message id=2 to\_address='dca@gmail.com' from\_address='Fran@unitec.ac.nz' copy\_to='' subject='This is the subject of the message' text='This is the text of the message' attachment='new attachment and new to\_address'

INFO: 127.0.0.1:50689 - "PATCH /api/update/2 HTTP/1.1" 200 OK

Part 2.5

ERROR: attempt to delete message 5 - not found

INFO: 127.0.0.1:50696 - "DELETE /api/delete/5 HTTP/1.1" 404 Not Found

INFO: successful attempt to delete message id=1 to\_address='Ahmed@unitec.ac.nz' from\_address='jam@gmail.com' copy\_to='' subject='Lorem ipsum' text='Lorem ipsum dolor sit amet, qui minim labore adipisicing minim sint cillum sint consectetur cupidatat.' attachment=''

INFO: 127.0.0.1:50700 - "DELETE /api/delete/1 HTTP/1.1" 204 No Content