

server:

Last login: Fri Dec 13 02:15:53 on ttys003

(base) revathipatel@Revathi-Patels-MacBook-Air ~ % cd Downloads

(base) revathipatel@Revathi-Patels-MacBook-Air Downloads % cd reddit

(base) revathipatel@Revathi-Patels-MacBook-Air reddit % go run server1.go

2024/12/13 02:17:03 Server running on port 8080

2024/12/13 02:18:10 Client: 1

Action: User Registered

Username: revathi

2024/12/13 02:18:26 Client: 2

Action: User Registered

Username: asna

2024/12/13 02:18:44 Client: 3

Action: User Registered

Username: jack

2024/12/13 02:19:05 Client: 1

Action: User Registered

Username: jill

2024/12/13 02:19:32 Client: 1

Action: Subreddit Created

Subreddit Name: sub1

2024/12/13 02:19:38 Client: 2

Action: Subreddit Created

Subreddit Name: sub2

2024/12/13 02:19:43 Client: 3

Action: Subreddit Created

Subreddit Name: sub3

2024/12/13 02:19:58 Client: 1

Action: User Joined Subreddit

Username: revathi

Subreddit Name: sub1

2024/12/13 02:20:20 Client: 2

Action: User Joined Subreddit

Username: asna

Subreddit Name: sub1

2024/12/13 02:20:34 Client: 3

Action: User Joined Subreddit

Username: jack

Subreddit Name: sub2

2024/12/13 02:21:14 Post created successfully with ID p1 in subreddit sub1 by user revathi

2024/12/13 02:21:29 Client: 1

Action: Listing All Subreddits

Subreddits: [sub3 sub1 sub2]

2024/12/13 02:21:57 Listing posts in subreddit: sub1

2024/12/13 02:22:22 Action: Add Comment

Post ID: p1

Comment ID: c1

Author: revathi

Content: looks nice

2024/12/13 02:23:04 Action: Add Comment

Post ID: p1

Comment ID: c2

Author: asna

Content: go there

2024/12/13 02:23:38 Action: Add Reply

Post ID: p1

Parent Comment ID: c1

Reply ID: c3

Author: jack

Content: cool

2024/12/13 02:23:49 Vote recorded for post ID p1. Total Votes: 1

2024/12/13 02:23:55 Vote recorded for post ID p1. Total Votes: 2

2024/12/13 02:24:01 Vote recorded for post ID p1. Total Votes: 1

2024/12/13 02:24:13 Client 1 sent message from revathi to asna: hey asna

2024/12/13 02:24:27 Client 2 sent message from asna to jack: hello jack

2024/12/13 02:24:42 Client requested post with ID: p1

2024/12/13 02:24:42 Post with ID p1 found in subreddit sub1

2024/12/13 02:24:42 Server Verification - Received Signature (Base64):

ToGHE5muBIUuznMSkiiDamXOO04IXYFb9FKmxEGLAHgt36HK7feeXK1P7BgkCY7b0/cW
HzK4Mh3FrZQ3yb/1FwSVRvBOUnU5YaSpEDMESbmbahk96/uaDCZChqFya1TNv9A7HUW
Pc0Rpqpplf5ZdSdAQv4MCvGay/F6P+wEajZqK8Lcrn9+6DwrVay7GtK46qZywcJ9SYQ9WtF
oJymHtLYk7yNJFI4hq5XQzWuWivYR/ZumLh6Y3ta2t2RsDI8drLp1zHXNwqQ6qHcCpXVvw
TFTNwR3z9MIWq5X/6RtlzZIIbSKonxzeqbAo2uHZrGBtOWXNBN9UnmoiewMzZDUOVw=
=

2024/12/13 02:24:42 Server Verification - Decoded Signature:

4e81871399ae06552ece73129228836a65ce3b4e085d815bf452a6c4480b00782ddfa1caedf79e5ca
d4fec1824098edb3f7161f32b8321dc5ad9437c9bfff517049546f04e52753961a4a910330449b99b
6a193debfb9a0c264286a1726b54cdbfd03b1d458f734469aa995e7f965d49d010bf8302bc66b2fc5
e8ffb011a8d9a8af0b72b9dfbaf0f0ad56b2ec6b4ae3aa99cb0089f52610f56b45a09ca61ed2d893bc
8d24523886ae574335ae5a2bd847f66e98b87a637b5adadd91b0323c76b2e9d731d7370a90eaa1dc

0a95d5bf04c54cdc11df3f4c956ab95ffe91b65cd920806c2a89f1cdea9b028dae1d9ac606d3965cd04df549e6a227b033364350e57

2024/12/13 02:24:42 Server Verification - Content: "welcome:"

2024/12/13 02:24:42 Server Verification - Hash (SHA256):

b72a950af1abedcc1405951485ca4410d109d9db3fdf5df66845665eea7d75fe

2024/12/13 02:24:42 Signature verified successfully for post p1

CLIENT 1:

Last login: Fri Dec 13 02:16:45 on ttys002

(base) revathipatel@Revathi-Patels-MacBook-Air ~ % cd Downloads

(base) revathipatel@Revathi-Patels-MacBook-Air Downloads % cd reddit

(base) revathipatel@Revathi-Patels-MacBook-Air reddit % go run client1.go

Enter Client ID (e.g., 1, 2, etc.): 1

Client 1: Welcome! Choose an action from the list below.

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 1

Client 1: Generated Private Key:

-----BEGIN RSA PRIVATE KEY-----

MIIeowIBAAKCAQEAX30bThYlee9S8/2Wal649zmjr7x6QWEp8cdHWiJp7LCCBZnS
/PSJ2BPxCB3vxxIAvuu+SomRBrWl7g0Khdu1kuw+Wt4ea8pLzRsR5aPqHM0VXKeB
16SLQsp/y13QBDKWJYI13O5rbTUOnGowjqzD2ra1F5VnBNuTyPswvtMQVQP9vQ56
Y2lhxHxRI0Xrz5yhYJ3jtrpuLg+xkn6rVbuim5ah/RX3A9Xk4Yg6F3IIPddi09mc
qf9FDEOnffWxects0Y6DRffYcwFxr5bMWUkbwbURmqMVsUAN463fa5ptkJZS/B7
MR6vB2HjIF0wY2Q6s1GZU8yYwTNxdugxAARuHwIDAQABAoIBAQCbbydvWGIq+Aay
hcxFZTjJqOeZbkzn1zIPYe5+IIHkIkOtCYYUApXE/wS3RlwlrzpViGnkuf+Ntrq

+M5SLjb0G48aTid15VHaplTzkRxBBKq4XuWUkejQSeF5FUeXfbLv1tCZrEuX89dG
mJbtFEAmkmXX0lIKt6wW1WHNzbbUBb7evdbh0Wxn1TLxctSg9+x/kKhXPjXaeRUV
r3kFGhAjmveTypaRUHJTqCQduRrIG/fpg36X5tpOTPR5AyrXUVs5sAMejJUFEim+
Y5/k2ykjq2ofwwNILvzY5LjOnBgnsTmgKn345UosH4W06bKOAjHYGIq8QfMQjldY
8g39KONBAoGBANEj16pTFG3GHf8eDe19JQKnRWH39S/QhRxGhnLTOJngQuQn8X08
INiMwVXa5hAars5JN++9K091vjD2lS+S7/5zFpZO6B3LwMYLAVbEdxj7MYt9R6lE
LJUijOp3Op3N1P5WdG58AIZDsWReBu3CQMaiWWGPwPG5ThQ05x3ry5wrAoGBAPQv
q5MkyN6w1Z+X2/+qrcbLAcHBdwKkshcgtkCCGGeYazpenegNsrQoC7cq38hJgbJk
trsbFWbxfJXm/iWarH5leIsSfu04KV/gBug6a6Da7JjnEfJgl1nHKdGUpUEKRS11
4pI+yX5hzQq1bPaWxGbr1Hf+DmITPTK1V/Nb19fdAoGAJJvxll8WdGDJv26zYW8W
m3BMZOnSsZv+sQRnZJI0xjrLesTDMPjllhwKclTrMKuWA0/tdH0ot2qrxsAB5/Onr
uM7MIWManpycEg67HUUm0+iks5YqhSa55xyoDiLwz87ICf14RB7QudNHqhoLfHMu
g7DHIJxlWermEANysXolGiECgYAqCxsrlqXPUfs2I1uJxcVt+P4wcjMfjWPsf4Fh
0gSJscCkqC3gCpu+UTbTLtqhDab7JEQiKyOgOewNk1wm9V7F1IrQxzp7dbQKAfSu
f4CQjaE3InIAnYjxuE0G/OUHMDf+tgFw1Ma0r/ox4dMFEih226INlvy6/j0HQhoG
mMWtMQKBgHax7iiuu0UgkMZLT2FhJUpMIbRM7uJ04W4/U7M6jvrENkMAaIDSE2ms
PciTOHDhsnjFFngN94YnaY2WeJneAkDCMj7bdqTQkN+GjJ7niIP6lvotM+alrG2
fhtQOpKlCXiH2nJBPLgJtcWdBwITPnuCSZ7dvqs4r+n1j9qZOrWe

-----END RSA PRIVATE KEY-----

Client 1: Generated Public Key:

-----BEGIN PUBLIC KEY-----

MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAx30bThYlee9S8/2Wal64
9zmjr7x6QWEp8cdHWiJp7LCCBZnS/PSJ2BPxCB3vxxIAvuu+SomRBrWl7g0Khdu1
kuw+Wt4ea8pLzRsR5aPqHM0VXKeB16SLQsp/y13QBDKWJYI13O5rbTUOnGowjqzD
2ralF5VnBNuTyPswvtMQVQP9vQ56Y2lhxHxRI0Xrz5yhYJ3jtrpuLg+xkn6rVbui
m5ah/RX3A9Xk4Yg6F3IIPddi09mcqf9FDEOnffWxects0Y6DRffYcwFxp5bMWUk
bwbURmqMVsuAN463fa5ptkJZS/B7MR6vB2HjIF0wY2Q6s1GZU8yYwTNxdugxAaru
HwIDAQAB

-----END PUBLIC KEY-----

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post

11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 2

Client 1: Enter username: revathi

Client 1: Paste your public key (PEM format). Press Enter twice to finish:

-----BEGIN PUBLIC KEY-----

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAx30bThYlee9S8/2Wal64
9zmjr7x6QWEp8cdHWiJp7LCCBZnS/PSJ2BPxCB3vxvIAvuu+SomRBrWl7g0Khdu1
kuw+Wt4ea8pLzRsR5aPqHM0VXKeB16SLQsp/y13QBDKWJYI3O5rbTUOnGowjqzD
2ra1F5VnBNuTyPswvtMQVQP9vQ56Y2lhxHxRI0Xrz5yhYJ3jtrpuLg+xkn6rVbui
m5ah/RX3A9Xk4Yg6F3IIPddi09mcqf9FDEOnffWxects0Y6DRffYcwFxr5bMWUk
bwbURmqMVuUAN463fa5ptkJZS/B7MR6vB2HjIF0wY2Q6s1GZU8yYwTNxdugxAaru
HwIDAQAB
```

-----END PUBLIC KEY-----

Client 1: Sending POST request to <http://localhost:8080/users> with payload:

```
{"PublicKey": "-----BEGIN PUBLIC
```

```
KEY-----\nMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAx30bThYlee9S8/2
Wal64\n9zmjr7x6QWEp8cdHWiJp7LCCBZnS/PSJ2BPxCB3vxvIAvuu+SomRBrWl7g0Khdu1\
nkuw+Wt4ea8pLzRsR5aPqHM0VXKeB16SLQsp/y13QBDKWJYI3O5rbTUOnGowjqzD\n2ra
1F5VnBNuTyPswvtMQVQP9vQ56Y2lhxHxRI0Xrz5yhYJ3jtrpuLg+xkn6rVbui\nnm5ah/RX3A9
Xk4Yg6F3IIPddi09mcqf9FDEOnffWxects0Y6DRffYcwFxr5bMWUk\nnbwbURmqMVuUAN4
63fa5ptkJZS/B7MR6vB2HjIF0wY2Q6s1GZU8yYwTNxdugxAaru\nHwIDAQAB\n-----END
PUBLIC KEY-----\n", "Username": "revathi"}
```

Client 1: Response: map[message:User registered successfully]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message

13. Display Messages

14. Retrieve Post with Signature Verification

15. Exit

Client 1: Enter your choice: 2

Client 1: Enter username: jill

Client 1: Paste your public key (PEM format). Press Enter twice to finish:

-----BEGIN PUBLIC KEY-----

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAx30bThYlee9S8/2Wal64
9zmjr7x6QWEp8cdHWiJp7LCCBZnS/PSJ2BPxCB3vxxvIAvuu+SomRBrWl7g0Khdu1
kuw+Wt4ea8pLzRsR5aPqHM0VXKeB16SLQsp/y13QBDKWJYI3O5rbTUOnGowjqzD
2ra1F5VnBNuTyPswvtMQVQP9vQ56Y2lhxHxRI0Xrz5yhYJ3jtrpuLg+xkn6rVbui
m5ah/RX3A9Xk4Yg6F3IIPddi09mcqf9FDEOnffWxects0Y6DRffYcwFxp5bMWUk
bwbURmqMVsuAN463fa5ptkJZS/B7MR6vB2HjIF0wY2Q6s1GZU8yYwTNxdugxAARu
HwIDAQAB
```

-----END PUBLIC KEY-----

Client 1: Sending POST request to http://localhost:8080/users with payload:

{"PublicKey": "-----BEGIN PUBLIC

```
KEY-----\nMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAx30bThYlee9S8/2
Wal64\n9zmjr7x6QWEp8cdHWiJp7LCCBZnS/PSJ2BPxCB3vxxvIAvuu+SomRBrWl7g0Khdu1\
nkuw+Wt4ea8pLzRsR5aPqHM0VXKeB16SLQsp/y13QBDKWJYI3O5rbTUOnGowjqzD\n2ra
1F5VnBNuTyPswvtMQVQP9vQ56Y2lhxHxRI0Xrz5yhYJ3jtrpuLg+xkn6rVbui\nm5ah/RX3A9
Xk4Yg6F3IIPddi09mcqf9FDEOnffWxects0Y6DRffYcwFxp5bMWUk\nnbwbURmqMVsuAN4
63fa5ptkJZS/B7MR6vB2HjIF0wY2Q6s1GZU8yYwTNxdugxAARu\nHwIDAQAB\n-----END
PUBLIC KEY-----\n", "Username": "jill"}
```

Client 1: Response: map[message:User registered successfully]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification

15. Exit

Client 1: Enter your choice: 3

Client 1: Enter subreddit name: sub1

Client 1: Sending POST request to <http://localhost:8080/subreddits> with payload:

```
{"Name":"sub1"}
```

Client 1: Response: map[message:Subreddit created successfully]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 4

Client 1: Enter your username: revathi

Client 1: Enter subreddit name: sub1

Client 1: Sending POST request to <http://localhost:8080/subreddits/join> with payload:

```
{"SubredditName":"sub1","Username":"revathi"}
```

Client 1: Response: map[message:Joined subreddit successfully]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post

12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 5

Client 1: Enter your username: revathi

Client 1: Enter subreddit name: sub1

Client 1: Enter post title: hey!!

Client 1: Enter post content: welcome:

Client 1: Paste your private key (PEM format). Press Enter twice to finish:

-----BEGIN RSA PRIVATE KEY-----

```
MIIIEowIBAAKCAQEAX30bThYlee9S8/2Wal649zmjr7x6QWEp8cdHWiJp7LCCBZnS
/PSJ2BPxCB3vxvIAvuu+SomRBrWl7g0Khdu1kuw+Wt4ea8pLzRsR5aPqHM0VXKeB
16SLQsp/y13QBDKWJYI13O5rbTUOnGowjqzD2ra1F5VnBNuTyPswvtMQVQP9vQ56
Y2lhxHxRI0Xrz5yhYJ3jtrpuLg+xkn6rVbuim5ah/RX3A9Xk4Yg6F3lIPddi09mc
qf9FDEOnffWxects0Y6DRffYcwFxp5bMWUkbwbURmqMVsuAN463fa5ptkJZS/B7
MR6vB2HjIF0wY2Q6s1GZU8yYwTNxdugxAaruHwIDAQABAoIBAQCbbydvWGIq+Aay
hcxFZTjJqOeZbkzn1zlPYe5+IIHkIkOtCYYUApXE/wS3RlwlrzpViGnkufT+Ntrq
+M5SLjb0G48aTid15VHaplTzkRxBBKq4XuwUkejQSeF5FUEXfbLv1tCZrEuX89dG
mJbtFEAmkmXX0lIKt6wW1WHNzbbUBb7evdbh0Wxn1TLxctSg9+x/kKhXPjXaeRUV
r3kFGhAajmveTypaRUHJTqCQduRrIG/fpg36X5tpOTPR5AyrXUVs5sAMejJUFEim+
Y5/k2ykjq2ofwwNILvzY5LjOnBgnsTmgKn345UosH4W06bKOAjHYGIq8QfMQjldY
8g39KONBAoGBANEj16pTFG3GHf8eDe19JQKnRWH39S/QhRxGhnLTOJngQuQn8X08
INiMwVXa5hAars5JN++9K091vjD2lS+S7/5zFpZO6B3LwMYLAVbEdxj7MYt9R6lE
LJUijOp3Op3N1P5WdG58AizDsWReBu3CQMaiWWGPwPG5ThQ05x3ry5wrAoGBAPQv
q5MkyN6w1Z+X2/+qrcbLAcHBdwKkshcgkCCGGeYazpenegNsrQoC7cq38hJgbJk
tarH5leIsSfu04KV/gBug6a6Da7JjnEfJgl1nHKdGUpUEKRSI1
4pI+yX5hzQq1bPaWxGbr1Hf+DmITPTK1V/Nb19fdAoGAJJvxll8WdGDJv26zYW8W
m3BMZOnSsZv+sQRnZJI0xjrLesTDMPjllhwKclTrMKuWA0/tdH0ot2qrxsAB5/Onr
uM7MIWManpycEg67HUUm0+iks5YqhSa55xyoDiLwz87ICf14RB7QudNHqhoLfHMu
g7DHIJxlWermEANysXolGiECgYAqCxsrlqXPUfs2I1uJxcVt+P4wcjMfjWPsf4Fh
0gSJscCkqC3gCpu+UTbTLtqhDab7JEQIKyOgOewNklwm9V7F1lrQxzp7dbQKAfSu
f4CQjaE3InIAnYjxuE0G/OUHMDf+tgFw1Ma0r/ox4dMFEih226INlvy6/j0HQhoG
mMWtMQKBgHax7iiuu0UgkMZLT2FhJUpMIbRM7uJ04W4/U7M6jvrENkMAaIDse2ms
PciTOHDhsnjFFngN94YnaY2WeJneAkDCMj7bdqTQkN+GjJ7niIP6lvotM+alrG2
fhtQOpKlCXiH2nJBPLgJtcWdBwITPnuCSZ7dvqs4r+n1j9qZorWe
```

-----END RSA PRIVATE KEY-----

Client 1: Content to Sign: welcome:

Client 1: Generated Hash:

b72a950af1abedcc1405951485ca4410d109d9db3fdf5df66845665eea7d75fe

Client 1: Generated Signature (Base64):

ToGHE5muBlUuznMSkiiDamXOO04IXYFb9FKmxEgLAHgt36HK7feeXK1P7BgkCY7b0/cWHzK4Mh3FrZQ3yb/1FwSVRvBOUnU5YaSpEDMESbmbahk96/uaDCZChqFya1TNv9A7HUWPc0Rpqpplf5ZdSdAQv4MCvGay/F6P+wEajZqK8Lcrn9+6DwrVay7GtK46qZywCJ9SYQ9WtFoJymHtLYk7yNJFI4hq5XQzWuWivYR/ZumLh6Y3ta2t2RsDI8drLp1zHXNwqQ6qHcCpXVvwTFTNwR3z9MIWq5X/6RtlzZIIBsKonxzeqbAo2uHZrGBtOWXNBN9UnmoiewMzZDUOVw==

Client 1: Sending POST request to http://localhost:8080/posts with payload:

```
{"Content": "welcome:", "Signature": "ToGHE5muBlUuznMSkiiDamXOO04IXYFb9FKmxEgLAHgt36HK7feeXK1P7BgkCY7b0/cWHzK4Mh3FrZQ3yb/1FwSVRvBOUnU5YaSpEDMESbmbahk96/uaDCZChqFya1TNv9A7HUWPc0Rpqpplf5ZdSdAQv4MCvGay/F6P+wEajZqK8Lcrn9+6DwrVay7GtK46qZywCJ9SYQ9WtFoJymHtLYk7yNJFI4hq5XQzWuWivYR/ZumLh6Y3ta2t2RsDI8drLp1zHXNwqQ6qHcCpXVvwTFTNwR3z9MIWq5X/6RtlzZIIBsKonxzeqbAo2uHZrGBtOWXNBN9UnmoiewMzZDUOVw==", "SubredditName": "sub1", "Title": "hey!!", "Username": "revathi"}
```

Client 1: Response: map[message:Post created successfully postID:p1]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 6

Client 1: Response: map[Subreddits:[sub3 sub1 sub2]]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit

6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 7

Client 1: Enter subreddit name: sub1

Client 1: Response: map[Posts:[map[Author:revathi Content:welcome: ID:p1 Title:hey!!
Votes:0]]]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 8

Client 1: Enter your username: revathi

Client 1: Enter post ID: p1

Client 1: Enter comment content: looks nice

Client 1: Sending POST request to <http://localhost:8080/comments> with payload:
{ "Author": "revathi", "Content": "looks nice", "ParentID": "", "PostID": "p1" }

Client 1: Response: map[commentID:c1 message:Comment added successfully]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account

3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 10

Client 1: Enter post ID: p1

Client 1: Sending POST request to <http://localhost:8080/votes> with payload:

```
{"IsUpvote":true,"PostID":"p1"}
```

Client 1: Response: map[message:Vote recorded successfully newVotes:1]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 12

Client 1: Enter your username: revathi

Client 1: Enter recipient username: asna

Client 1: Enter message content: hey asna

Client 1: Sending POST request to <http://localhost:8080/messages/send> with payload:

```
{"Content":"hey asna","From":"revathi","To":"asna"}
```

Client 1: Response: map[message:Message sent successfully]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 14

Client 1: Enter post ID: p1

Client 1: Response: map[Author:revathi CommentCount:0 Comments:[map[Author:revathi Content:looks nice ID:c1 ParentID: PostID:p1 Replies:[map[Author:jack Content:cool ID:c3 ParentID:c1 PostID:p1 Replies:[]]]] map[Author:asna Content:go there ID:c2 ParentID: PostID:p1 Replies:[]]] Content:welcome: ID:p1 Signature:ToGHE5muBlUuznMSkiiDamXOO04IXYFb9FKmxEgLAHgt36HK7feeXK1P7BgkCY7b0/cWHZK4Mh3FrZQ3yb/1FwSVRvBOUnU5YaSpEDMESbmbahk96/uaDCZChqFya1TNv9A7HUWPc0Rpqqplef5ZdSdAQv4MCvGay/F6P+wEajZqK8Lcrn9+6DwrVay7GtK46qZywCJ9SYQ9WtFoJymHtLYk7yNJFI4hq5XQzWuWivYR/ZumLh6Y3ta2t2RsDI8drLp1zHXNwqQ6qHcCpXVvwTFTNwR3z9MIWq5X/6RtlzZIIbsKonxzeqbAo2uHZrGBtOWXNBN9UnmoiewMzZDUOVw== Title:hey!! Votes:1]

Client 1: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post

11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 1: Enter your choice: 15

Client 1: Exiting. Goodbye!

(base) revathipatel@Revathi-Patels-MacBook-Air reddit %

CLIENT 2:

Last login: Fri Dec 13 02:16:39 on ttys000

(base) revathipatel@Revathi-Patels-MacBook-Air ~ % cd Downloads

(base) revathipatel@Revathi-Patels-MacBook-Air Downloads % cd reddit

(base) revathipatel@Revathi-Patels-MacBook-Air reddit % go run client1.go

Enter Client ID (e.g., 1, 2, etc.): 2

Client 2: Welcome! Choose an action from the list below.

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 1

Client 2: Generated Private Key:

-----BEGIN RSA PRIVATE KEY-----

MIIeogIBAAKCAQEAoUvTYakplH6yIDNxnRyLq9Ysoa7di0nAACTpjH/ZwpXhigyL
nqC4lht8l70At0MKdC4wk8e98vXNbwYF2rI8RmtHQ9+aXGh7JwEKCRvSd1CCnk7H
YQqkhEmYZlleMCsurPM5s5/Us6/VvW47gwCnmyu1Dk4JOREDvbesuASiPQfMMbpK
U4KoNsrgrTvM7d3dV2Em0U4taFQWQNnvM2clclbkGmm51KJCxp3ppBJjJirOJCmp/

veb5KRDP3VW9ApLm/vwStox+yw3Zg5nS0tA0bdGVH2054/WnH/i7Qm+5l2vbdvcF
bDuNr52XDdvb77l322hKzlmvj2ODPH43gqoqQIDAQABAoIBAH4Ot7ZEscVnOykl
a27Bh3sVmK4H7wdT7SVvs8NljDeiUbFFWrzvmTNfagFg6jVPxNTF4JsuaQqABjz1
tQ+VarwSTZEDKS19TnpOOpYhzNwI5Px6TyJNYgQtTFj5ET6OER2DvZ3flSmVi3NP
ul0I3vTLtOXoIRcjb7rHIMp0fKM6vf+MczGrh/BEOKc+JUK/AVCoYVVGsNzc4qx3
TUXXvGkBWNe29Kd7FX4d6tfF202r4SF9mYfCo3NJsB4Q8+a11Lu4x4Jp516fum7v
N62VAqlY1jKV0ZymO1kz4qMKqdoCLLDI8o2o/r8mHpuR3zxLaPmRHIUxtN96AeSf
822iqYECgYEAwz2AluzBjTIPR/VjwNJuSo+zosZWXOMdIM2o/Nv193HrczuvgKMD
jVloKTuXySzsZHfy5p1M4a4YxtR4rpsZ544/uYKzdL4tuwIgWG03vmwPqgnpe+2E
Fb8tt89vdbhlDmd/YVrnFQZubCtmWQuWxq7kZRotDW/f5VoCwbypd7kCgYEA034N
xER/l3mYj00Gr/SW5/fkhkUeXeLkvm7yQxkbB8woofRSSJ0BAkqIP/Of5adR16YZ
6vXOIMjCYUsGhWMfvrTl21z+12BfvdQM9deQl7j6HV5HDG+rXxbvK71Y0VrnJ0CN
Co/GehwP8gCumIHeZq041vZ2sqnNZe46bBPrUHECgYBNz4ns4Vy2Mvv02siZxYPt
NV5LZi5vMJigRTavJ97cckt7DnOAmfdFcZd/D2AL7lp8JA3reQ919hOr0mwScop6
I4gkIAHzagQBvVzKbwIqTqI8xBZsqxsmfXJNXwHcaRKhBrNXZZO8nwVE+i92ps
3rDp1kfUthz2ZCwrGEyWCQKBgCNIExnb54EoitfVHL17zzTxeNEhdLhq4ogWUBn7
dTPuzhR+gr+UWZe9RiYOCW2xZQjZr9cvnH/bofnDH1pfN+uDmBjpQaZCcJZlaqU
hw2YkTkXAjID483gMJQWaVu7k3ZL4XuSkqTKS6quiBuNBsIQBwyr4iMuo63mE1x
YT8xAoGAIsyYiYQQnhhZcyUH0shyY+sEna+arNsTerZdofQfBGeAGHcmgK28MpAL
zohb3RZAseUn6/iK1s2gYY08OVmTDlhouwl/z88lix7tC4Q5GbS87TxV8mVQpcIU
eUYFKiwdMgTpKrDAF46Lzllod1EiZGNGBwHmRVLTmLs2/GBWfC0=

-----END RSA PRIVATE KEY-----

Client 2: Generated Public Key:

-----BEGIN PUBLIC KEY-----

MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAoUvTYakplH6yIDNxnRyL
q9Ysoa7di0nAACTpjH/ZwpXhigyLnqC4lht8l70At0MKdC4wk8e98vXNbwYF2rI8
RmtHQ9+aXGh7JwEKCRvSd1CCnk7HYQqkhEmYZlleMCsurPM5s5/Us6/VvW47gwCn
myulDk4JOREDvbesuASiPQfMMbpKU4KoNsrgTvM7d3dV2Em0U4taFQWQNNvM2cl
IbkGmm51KJCxp3ppBJjJirOJCmp/veb5KRDP3VW9ApLm/vwStox+yw3Zg5nS0tA0
bdGVH2054/WnH/i7Qm+5l2vbdvcFbDuNr52XDdvb77l322hKzlmvj2ODPH43gqo
qIDAQAB

-----END PUBLIC KEY-----

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit

8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 2

Client 2: Enter username: asna

Client 2: Paste your public key (PEM format). Press Enter twice to finish:

-----BEGIN PUBLIC KEY-----

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAoUvTYakplH6yIDNxnRyL
q9Ysoa7di0nAACTpjH/ZwpXhigyLnqC4lht8l70At0MKdC4wk8e98vXNbwYF2rI8
RmtHQ9+aXGh7JwEKCRvSd1CCnk7HYQqkhEmYZlleMCsurPM5s5/Us6/VvW47gwCn
myu1Dk4JOREDvbesuASiPQfMMbpKU4KoNsrgTvM7d3dV2Em0U4taFQWQNnvM2clc
IbkGmm51KJCxp3ppBJjJirOJCmp/veb5KRDP3VW9ApLm/vwStox+yw3Zg5nS0tA0
bdGVH2054/WnH/i7Qm+5l2vbdvcFbDuNr52XDdvb77l322hKzlmyvj2ODPH43gqo
qQIDAQAB
```

-----END PUBLIC KEY-----

Client 2: Sending POST request to http://localhost:8080/users with payload:

```
{"PublicKey": "-----BEGIN PUBLIC
```

```
KEY-----\nMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAoUvTYakplH6yIDN
xnRyL\nq9Ysoa7di0nAACTpjH/ZwpXhigyLnqC4lht8l70At0MKdC4wk8e98vXNbwYF2rI8\nR
mtHQ9+aXGh7JwEKCRvSd1CCnk7HYQqkhEmYZlleMCsurPM5s5/Us6/VvW47gwCn\nmyu1
Dk4JOREDvbesuASiPQfMMbpKU4KoNsrgTvM7d3dV2Em0U4taFQWQNnvM2clc\nIbkGm
m51KJCxp3ppBJjJirOJCmp/veb5KRDP3VW9ApLm/vwStox+yw3Zg5nS0tA0\nbdGVH2054/
WnH/i7Qm+5l2vbdvcFbDuNr52XDdvb77l322hKzlmyvj2ODPH43gqo\nqQIDAQAB\n-----EN
D PUBLIC KEY-----\n","Username": "asna"}
```

Client 2: Response: map[message:User registered successfully]

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment

10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 3

Client 2: Enter subreddit name: sub2

Client 2: Sending POST request to <http://localhost:8080/subreddits> with payload:

```
{"Name":"sub2"}
```

Client 2: Response: map[message:Subreddit created successfully]

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 4

Client 2: Enter your username: asna

Client 2: Enter subreddit name: sub1

Client 2: Sending POST request to <http://localhost:8080/subreddits/join> with payload:

```
{"SubredditName":"sub1","Username":"asna"}
```

Client 2: Response: map[message:Joined subreddit successfully]

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits

7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 8

Client 2: Enter your username: asna

Client 2: Enter post ID: p1

Client 2: Enter comment content: go there

Client 2: Sending POST request to <http://localhost:8080/comments> with payload:

```
{"Author":"asna","Content":"go there","ParentID":"","PostID":"p1"}
```

Client 2: Response: map[commentID:c2 message:Comment added successfully]

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 10

Client 2: Enter post ID: p1

Client 2: Sending POST request to <http://localhost:8080/votes> with payload:

```
{"IsUpvote":true,"PostID":"p1"}
```

Client 2: Response: map[message:Vote recorded successfully newVotes:2]

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account

3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 12

Client 2: Enter your username: asna

Client 2: Enter recipient username: jack

Client 2: Enter message content: hello jack

Client 2: Sending POST request to <http://localhost:8080/messages/send> with payload:

```
{"Content":"hello jack","From":"asna","To":"jack"}
```

Client 2: Response: map[message:Message sent successfully]

Client 2: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 2: Enter your choice: 15

Client 2: Exiting. Goodbye!

(base) revathipatel@Revathi-Patels-MacBook-Air reddit %

CLIENT 3:

Last login: Fri Dec 13 02:16:43 on ttys001

(base) revathipatel@Revathi-Patels-MacBook-Air ~ % cd Downloads

(base) revathipatel@Revathi-Patels-MacBook-Air Downloads % cd reddit

(base) revathipatel@Revathi-Patels-MacBook-Air reddit % go run client1.go

Enter Client ID (e.g., 1, 2, etc.): 3

Client 3: Welcome! Choose an action from the list below.

Client 3: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 3: Enter your choice: 1

Client 3: Generated Private Key:

-----BEGIN RSA PRIVATE KEY-----

MIIEpAIBAAKCAQEA2anV/ap6OWeoxEDYUpD3UoDX68/3jm4D3JSs/6scYWd57+BP
WMCyOlVMpWiT98yUxWahMVRRDsmzz0wbOf9iDbVCti7WSjP5WPxDBCCRxrsABqE5
WZOzjgkri9XdE88YZv1t+Em2/8ncekF2W/OfZTqiAnFsqM38DS36qYNGY4JRavX
J4+l1R7ILMKTSwlB/3lBznIwduUQHJZRYX/hStZdAzQh7u8RcG7hUPU8yYoxk5Vx
cGMey6Ktd+KL9XpfaH+Vb/0RWSzjAeS1qR91oHuH5LgI5nAtgzu4N9/U0r9NoIw
DYptmd459XxHMTG8UX/xLL4azMFi1wm+WwSLlQIDAQABaoIBABphai0nZ07j0GGQ
lmcTaNZYBVNwTjm1/cPTRTBhrbIMf4viLNu95xwI0JRPm3dyFSnjqW+4H2awAjoC
qF4cJL8yk9ZO0OwHZpYxZN6LCAAFFBi5m6DOtPlnBR8amY8OG2xdIafaowIQ56/3
pRzYXzd7P/2i6ZlGfByJ1yyaWYJaJogQUvXcz/o3RH2AT2u4vkKB62n+dreRCD+/
eC6qjJ0awgV+i682k5zx6JjJCKGMrrSWsvwAN670L+ZlyGZ0Eg3qxNooDRdOtDW2
bOd8b6mHKJVMX5IDufOQ52PgqW/bWESLr1rKq0Hy2cNNuN8JBFW4lo97n+u1pRqn
JtyWjtUCgYEA22kyAMPv/Up64Z0jXKKEIeuzinoQdAdjL9+J2RygogJ7ALUq/KJA
Jeb5o2BbsAjp8il/vG3IYVMXuK5Tlpr3hU0UKh3dpEst9R56IdqMuFpT7Egk7Mv

8aevS2wp6uJHgCzA8qF7Ydf82XoHYdRoKza06OsCMIqy1qQWT6y3yGMCgYEA/fYJ
5zT+pO5RkDmsAt0+Dz7LCVtY6hqfXzr2fc7jVnK9LGdJFWLIzloxSM+kCxLI64pM
upA3CCQztxz6nHzMw4EGfI+zEQO1XOA9KwFZIT90qcIdsl5zrBPZd1cvbhJMOglF
3juNaq+aSaBgS6rJZMwffz8NkJvnpwlmDnvY0acCgYEAjXf2VagARUCQmofHFSN0
LqrayJ6LnURmH6fyKZrbt5oB1SL65Il48vdKXpzygT4+GXEbx1LBsH7y/JDqNGEP
U9I4OQlmfXxspTrKn7MwNj5AuLFsX89ZSmbkD61eGaRslahFgCu+cghcBfOSrW5
tKNBYiyk7fKs/Ngvyo+CsCECgYB6Km8dH6sXX+Uwge2y+watgsFc4OpmwyPDRbPp
VSqaVT3XLGBFv11llpF6uxfok9Cye7bpUBKJAHE2luQffxFpQpoCNYYoOyZ1ZRFH
rMCRQRM3zj9G3JS8RFgqRnB0fKzahjdr7i3bEl0f7NwlyiRTLrZAGe7Gj5jiC2li
rkTgpQKBgQDbKRexE2n0VytYN2IYRSeLO8nYOsGE4ue1PuiZPZh76d3Op7hk5tAi
mfRCV9D9OqTrh1Zy04vGs0pd8SfGV13cPmkXA+iCoSDOafLU4AdoGfOjjouZn+I
sA3FYbK5yzBr6SRzVV7R4YF6EclJ/vLKNefPYjNWRyVgTOzgdLhStQ==

-----END RSA PRIVATE KEY-----

Client 3: Generated Public Key:

-----BEGIN PUBLIC KEY-----

MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA2anV/ap6OWeoxEDYUpD3
UoDX68/3jm4D3JSs/6scYWd57+BPWMCyOIVMpWiT98yUxWahMVRDRDSmzz0wbOf9i
DbVCti7WSjP5WPxDbCCRxrsABqE5WZOzjgkri9XdcE88YZv1t+Em2/8ncekF2W/O
fZTqiAnFsqM38DS36qYNGY4JRavXJ4+l1R7ILMKTSwlB/3lBznIwduUQHJZRYX/h
StZdAzQh7u8RcG7hUPU8yYoxk5VxcGMey6Ktd+KL9XpfaH+Vb/0RWSzjAeS1qR9
1oHuH5LgI5nAtgzu4N9/U0r9NoIwDYptmd459XxHMTG8UX/xLL4azMFi1wm+WwSL
IQIDAQAB

-----END PUBLIC KEY-----

Client 3: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 3: Enter your choice: 2

Client 3: Enter username: jack

Client 3: Paste your public key (PEM format). Press Enter twice to finish:

-----BEGIN PUBLIC KEY-----

```
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA2anV/ap6OWeoxEDYUpD3
UoDX68/3jm4D3JSs/6scYWd57+BPWMCyOIVMpWiT98yUxWahMVRRDsmzz0wbOf9i
DbVCti7WSjP5WPxDbCCRxrsABqE5WZOzjgkri9XdcE88YZv1t+Em2/8ncekF2W/O
fZTqiAnFsqM38DS36qYNGY4JRavXJ4+l1R7ILMKTSwlB/3lBznIwduUQHJZRYX/h
StZdAzQh7u8RcG7hUPU8yYoxk5VxcGMey6Ktd+KL9XpfaH+Vb/0RWSzjAeS1qR9
1oHuH5LgI5nAtgzu4N9/U0r9NoIwDYptmd459XxHMTG8UX/xLL4azMFi1wm+WwSL
lQIDAQAB
```

-----END PUBLIC KEY-----

Client 3: Sending POST request to http://localhost:8080/users with payload:

```
{"PublicKey": "-----BEGIN PUBLIC
```

```
KEY-----\nMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA2anV/ap6OWeoxE
DYUpD3\nUoDX68/3jm4D3JSs/6scYWd57+BPWMCyOIVMpWiT98yUxWahMVRRDsmzz0
wbOf9i\nDbVCti7WSjP5WPxDbCCRxrsABqE5WZOzjgkri9XdcE88YZv1t+Em2/8ncekF2W/O
\nfZTqiAnFsqM38DS36qYNGY4JRavXJ4+l1R7ILMKTSwlB/3lBznIwduUQHJZRYX/h\nStZd
AzQh7u8RcG7hUPU8yYoxk5VxcGMey6Ktd+KL9XpfaH+Vb/0RWSzjAeS1qR9\n1oHuH5Lg
I5nAtgzu4N9/U0r9NoIwDYptmd459XxHMTG8UX/xLL4azMFi1wm+WwSL\nlQIDAQAB\n--
---END PUBLIC KEY-----\n", "Username": "jack"}
```

Client 3: Response: map[message:User registered successfully]

Client 3: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 3: Enter your choice: 3

Client 3: Enter subreddit name: sub3

Client 3: Sending POST request to `http://localhost:8080/subreddits` with payload:

```
{"Name":"sub3"}
```

Client 3: Response: `map[message:Subreddit created successfully]`

Client 3: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 3: Enter your choice: 4

Client 3: Enter your username: jack

Client 3: Enter subreddit name: sub2

Client 3: Sending POST request to `http://localhost:8080/subreddits/join` with payload:

```
{"SubredditName":"sub2","Username":"jack"}
```

Client 3: Response: `map[message:Joined subreddit successfully]`

Client 3: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification

15. Exit

Client 3: Enter your choice: 9

Client 3: Enter your username: jack

Client 3: Enter post ID: p1

Client 3: Enter comment content: cool

Client 3: Enter parent comment ID: c1

Client 3: Sending POST request to <http://localhost:8080/comments> with payload:

```
{"Author":"jack","Content":"cool","ParentID":"c1","PostID":"p1"}
```

Client 3: Response: map[commentID:c3 message:Comment added successfully]

Client 3: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment
10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 3: Enter your choice: 11

Client 3: Enter post ID: p1

Client 3: Sending POST request to <http://localhost:8080/votes> with payload:

```
{"IsUpvote":false,"PostID":"p1"}
```

Client 3: Response: map[message:Vote recorded successfully newVotes:1]

Client 3: Choose an action:

1. Generate RSA Keys
2. Create Account
3. Create Subreddit
4. Join Subreddit
5. Create Post in Subreddit
6. View All Subreddits
7. View All Posts in a Subreddit
8. Comment on Post
9. Reply to Comment

10. Upvote Post
11. Downvote Post
12. Send Message
13. Display Messages
14. Retrieve Post with Signature Verification
15. Exit

Client 3: Enter your choice: 15

Client 3: Exiting. Goodbye!

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