Дослідження особливостей реалізації існуючих програмних систем, які використовують криптографічні механізми захисту інформації.

Run server:

```
$ go run main.go
Server is running on :8080...
```

Send request to sign data:

```
$ curl -X POST -H "Content-Type: application/json" -d '{"data": "This is
my data"}' http://localhost:8080/sign
```
```
{"signature":"g0pGgRW/ID5obRkpivR9D4Zkt3J91VQzj2sBI6kkKxxQaUbCaoMgV8l7nOJ
Ki7h5vkhiUUPln6ljoD0OswSmDrBGCdTlrE6BE/PSII2i+pUAbtjGOcs+PeV7F+T1RgMkxGIR
YIvDCbywI8gqh8vquNAs5b9TL9hHjqW8Gp9BrXouM/30tzX8IJWuvgmQUtdZgEd7ZNnUVQMNM
YOqAWaRzDOQc+SS9m+sRFh4+8l5FSEtgKrIhtNjN1pbAPGBNFz+mzmQqHv48hPgxMTuHpN44I
+WwnPosLc28Ad11F1jAUr0lC7QRetcB1iPCmuxJMxMAuk8EkUb4ykENEIqgqp6UQ=="}
```

Send request to verify signature:

```
$ curl -X POST -H "Content-Type: application/json" -d '{"data": "This is
my data",
```
```
"signature":"g0pGgRW/ID5obRkpivR9D4Zkt3J91VQzj2sBI6kkKxxQaUbCaoMgV8l7nOJK
i7h5vkhiUUPln6ljoD0OswSmDrBGCdTlrE6BE/PSII2i+pUAbtjGOcs+PeV7F+T1RgMkxGIRY
IvDCbywI8gqh8vquNAs5b9TL9hHjqW8Gp9BrXouM/30tzX8IJWuvgmQUtdZgEd7ZNnUVQMNMY
OqAWaRzDOQc+SS9m+sRFh4+8l5FSEtgKrIhtNjN1pbAPGBNFz+mzmQqHv48hPgxMTuHpN44I+
WwnPosLc28Ad11F1jAUr0lC7QRetcB1iPCmuxJMxMAuk8EkUb4ykENEIqgqp6UQ=="}'
```
```
http://localhost:8080/verify
{"valid":true}
```

Tests with invalid and empty signature:

```
$ curl -X POST -H "Content-Type: application/json" -d '{"data": "This is
my data",
```
```
"signature":"g0pGgRW/ID5obRkpivR9D4Zkt3J91VQzj2sBI6kkKxxQaUbCaoMgV8l7nOJK
i7h5vkhiUUPln6ljoD0OswSmDrBGCdTlrE6BE/PSII2i+pUAbtjGOcs+PeV7F+T1RgMkxGIRY
IvDCbywI8gqh8vquNAs5b9TL9hHjqW8Gp9BrXouM/30tzX8IJWuvgmQUtdZgEd7ZNnUVQMNMY
```

```
OqAWaRzDOQc+SS9m+sRFh4+8l5FSEtgKrIhtNjN1pbAPGBNFz+mzmQqHv48hPgxMTuHpN44I+
WwnPosLc28Ad11F1jAUr0lC7QRetcB1iPCmuxJMxMAuk8EkUb4ykENEIqgqp6UQ="}'
http://localhost:8080/verify
Invalid base64-encoded signature
$ curl -X POST -H "Content-Type: application/json" -d '{"data": "This is
my data", "signature":"AAAA"}' http://localhost:8080/verify
{"valid":false}
$ curl -X POST -H "Content-Type: application/json" -d '{"data": "This is
my data", "signature":""}' http://localhost:8080/verify
{"valid":false}
$ curl -X POST -H "Content-Type: application/json" -d '{"data": "This is
my data"}' http://localhost:8080/verify
Missing 'signature' field in JSON
```