

```
161 int main(int argc, char *argv[])
191 {
192     if (argc != 5)
193     {
194         std::cerr << "Usage: " << argv[0] << " verify <public key file> <PDF file> <signature file>" << std::endl;
195         return 1;
196     }
197     const char *publickeyPath = argv[2];
198     const char *pdfPath = argv[3];
199     const char *signaturePath = argv[4];
200     if (verifySignature(publickeyPath, pdfPath, signaturePath))
201     {
202         std::cout << "PDF verified successfully." << std::endl;
203     }
204     else
205     {
206         std::cout << "Failed to verify PDF." << std::endl;
207     }
208 }
209 return 0;
210 }
```

```
E:\Term4\MMH\Lab6>nm -g digitalopencpp.so | grep signPdf
0000000297581400 T signPdf

E:\Term4\MMH\Lab6>nm -g digitalopencpp.so | grep verifySignature
00000002975824a0 T verifySignature

E:\Term4\MMH\Lab6>python digital.py sign eccprivate.pem report.pdf signature.bin
Hashing the PDF
Signing the hash
Writing the signature to file: signature.bin
PDF signed successfully and saved signature to signature.bin

E:\Term4\MMH\Lab6>python digital.py verify eccpublickey.pem report.pdf signature.bin
PDF verified successfully.

E:\Term4\MMH\Lab6>ldd digitalopencpp.so
ntdll.dll => /c:/WINDOWS/SYSTEM32/ntdll.dll (0x7ffa08590000)
KERNEL32.DLL => /c:/WINDOWS/System32/KERNEL32.DLL (0x7ffa07290000)
KERNELBASE.dll => /c:/WINDOWS/System32/KERNELBASE.dll (0x7ffa05ee0000)
msvcrt.dll => /c:/WINDOWS/System32/msvcrt.dll (0x7ffa076c0000)
ADVAPI32.dll => /c:/WINDOWS/System32/ADVAPI32.dll (0x7ffa08230000)
sechost.dll => /c:/WINDOWS/System32/sechost.dll (0x7ffa063d0000)
bcrypt.dll => /c:/WINDOWS/System32/bcrypt.dll (0x7ffa05920000)
RPCRT4.dll => /c:/WINDOWS/System32/RPCRT4.dll (0x7ffa07c20000)
CRYPT32.dll => /c:/WINDOWS/System32/CRYPT32.dll (0x7ffa05950000)
ucrtbase.dll => /c:/WINDOWS/System32/ucrtbase.dll (0x7ffa05b60000)
USER32.dll => /c:/WINDOWS/System32/USER32.dll (0x7ffa08380000)
win32u.dll => /c:/WINDOWS/System32/win32u.dll (0x7ffa06290000)
GDI32.dll => /c:/WINDOWS/System32/GDI32.dll (0x7ffa07bf0000)
gdi32full.dll => /c:/WINDOWS/System32/gdi32full.dll (0x7ffa05d40000)
msvc_p_win.dll => /c:/WINDOWS/System32/msvc_p_win.dll (0x7ffa05ac0000)
libstdc++-6.dll => /mingw64/bin/libstdc++-6.dll (0x7ff9a5880000)
libgcc_s_seh-1.dll => /mingw64/bin/libgcc_s_seh-1.dll (0x7ff9db9a0000)
WS2_32.dll => /c:/WINDOWS/System32/WS2_32.dll (0x7ffa07640000)
libwinpthread-1.dll => /mingw64/bin/libwinpthread-1.dll (0x7ff9d9e50000)
libwinpthread-1.dll => /mingw64/bin/libwinpthread-1.dll (0x1a2e2610000)
CRYPTBASE.DLL => /c:/WINDOWS/SYSTEM32/CRYPTBASE.DLL (0x7ffa04fa0000)
bcryptPrimitives.dll => /c:/WINDOWS/System32/bcryptPrimitives.dll (0x7ffa05e60000)
IMM32.DLL => /c:/WINDOWS/System32/IMM32.DLL (0x7ffa07360000)
```

