

Step 1: Start

Step 2: Initialize Scanner for Input

2.1: Create Scanner object,

```
scanner = new Scanner(System.in)
```

Step 3: Input Key

3.1: Prompt "Enter a key" and read input into key,

```
print("Enter a key: ")  
key = scanner.nextLine()
```

Step 4: Generate Blowfish Key

4.1: Convert key to bytes as keyBytes.

4.2: Hash keyBytes with MD5 to produce keyHash.

4.3: Create blowfishKey with keyHash for Blowfish,

```
keyBytes = key.getBytes()  
keyHash = MD5.digest(keyBytes)  
blowfishKey = new SecretKeySpec(keyHash, "Blowfish")
```

Step 5: Input Message

5.1: Prompt "Enter a message" and read input into message.

5.2: Convert message to bytes as messageBytes.

```
print("Enter a message: ")  
message = scanner.nextLine()  
messageBytes = message.getBytes()
```

Step 6: Encrypt the Message

6.1: Initialize Cipher for Blowfish encryption.

6.2: Set cipher mode to encrypt with blowfishKey.

6.3: Encrypt messageBytes to produce ciphertextBytes.

```
cipher = Cipher.getInstance("Blowfish")  
cipher.init(ENCRYPT_MODE, blowfishKey)  
ciphertextBytes = cipher.doFinal(messageBytes)
```

Step 7: Display Ciphertext

7.1: Print each byte in ciphertextBytes as hexadecimal.

```
print("Ciphertext is: ")
for each byte in ciphertextBytes:
    print byte as hexadecimal
```

Step 8: Decrypt the Ciphertext

8.1: Reinitialize Cipher for decryption with blowfishKey.

8.2: Decrypt ciphertextBytes to produce plaintextBytes.

8.3: Convert plaintextBytes to plaintext.

```
cipher.init(DECRYPT_MODE, blowfishKey)
plaintextBytes = cipher.doFinal(ciphertextBytes)
plaintext = new String(plaintextBytes)
```

Step 9: Display Plaintext

9.1: Print plaintext,

```
print("Plaintext is: " + plaintext)
```

Step 10: Stop