Write Up for the LAB

In this lab first I had to figure out which file to change, then when I played the game I see which files got changed. Then focused on two important files, "INIT.GAM" and "SAVED.GAM," as they store the essential in-game values. When we start a new game, "SAVED.GAM" is initialized from "INIT.GAM".

I used following links:

https://wiki.ultimacodex.com/wiki/Ultima_V_internal_formats#SAVED.GAM

https://wiki.ultimacodex.com/wiki/Ultima_V_internal_formats#LZW_compressed

To get all important information about the game and its offsets. I opened these files on Hex editor and then I looked for the in-game stat values and looked for its offset values. Which fortunately i was able to find.

0x10	word	Current HP	01-240 / 01-999
0x12	word	Maximum HP	01-240 / 01-999
0x14	word	Experience Points	0-9999
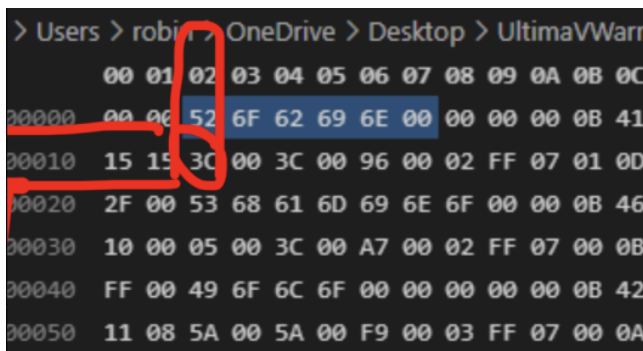
When I found out the offsets for all of the character stats, I saw the pattern in them and their data was placed in consecutive rows, allowing me to efficiently apply the changes to all characters by replicating the modifications based on the pattern.

My experience with somewhat okay as it required a lot of work researching about it, but it was also fun once i found out the offset pattern and i changed those to edit game stats

Following are the modified offsets

Character	STR	DEX	INT	MAG	HP	HM	EXP
MainChar	0x0E	0x0F	0x10	0x11	0x12-0x13	0x14	0x15-0x17
Shamino	0x2E	0x2F	0x30	0x31	0x32-0x33	0x34	0x35-0x37
Iolo	0x4E	0x4F	0x50	0x51	0x52-0x53	0x54	0x55-0x57
Mariah	0x6E	0x6F	0x70	0x71	0x72-0x73	0x74	0x75-0x77
Geoffrey	0x8E	0x8F	0x90	0x91	0x92-0x93	0x94	0x95-0x97
Jaana	0xAE	0xAF	0xB0	0xB1	0xB2-0xB3	0xB4	0xB5-0xB7
Julia	0xCE	0xCF	0xD0	0xD1	0xD2-0xD3	0xD4	0xD5-0xD7
Dupre	0xEE	0xEF	0xF0	0xF1	0xF2-0xF3	0xF4	0xF5-0xF7
Katrina	0x10E	0x10F	0x110	0x111	0x112-0x113	0x114	0x115-0x117
Sentri	0x12E	0x12F	0x130	0x131	0x132-0x133	0x134	0x135-0x137

Character	STR	DEX	INT	MAG	HP	HM	EXP
Gwenno	0x14E	0x14F	0x150	0x151	0x152-0x153	0x154	0x155-0x157
Johne	0x16E	0x16F	0x170	0x171	0x172-0x173	0x174	0x175-0x177
Gorn	0x18E	0x18F	0x190	0x191	0x192-0x193	0x194	0x195-0x197
Maxwell	0x1AE	0x1AF	0x1B0	0x1B1	0x1B2-0x1B3	0x1B4	0x1B5-0xB7
Toshi	0x1CE	0x1CF	0x1D0	0x1D1	0x1D2-0x1D3	0x1D4	0x1D5-0x1D7
Saduj	0x1EE	0x1EF	0x1F0	0x1F1	0x1F2-0x1F3	0x1F4	0x1F5-0x1F7