main.c

/\* Includes ------------------------------------------------------------------\*/

**#include** "main.h"

/\* Private includes ----------------------------------------------------------\*/

/\* USER CODE BEGIN Includes \*/

/\* USER CODE END Includes \*/

/\* Private typedef -----------------------------------------------------------\*/

/\* USER CODE BEGIN PTD \*/

/\* USER CODE END PTD \*/

/\* Private define ------------------------------------------------------------\*/

/\* USER CODE BEGIN PD \*/

/\* USER CODE END PD \*/

/\* Private macro -------------------------------------------------------------\*/

/\* USER CODE BEGIN PM \*/

/\* USER CODE END PM \*/

/\* Private variables ---------------------------------------------------------\*/

/\* USER CODE BEGIN PV \*/

/\* USER CODE END PV \*/

/\* Private function prototypes -----------------------------------------------\*/

**void** **SystemClock\_Config**(**void**);

**static** **void** **MX\_GPIO\_Init**(**void**);

/\* USER CODE BEGIN PFP \*/

/\* USER CODE END PFP \*/

/\* Private user code ---------------------------------------------------------\*/

/\* USER CODE BEGIN 0 \*/

/\* USER CODE END 0 \*/

/\*\*

\* @brief The application entry point.

\* @retval int

\*/

**int** **main**(**void**)

{

/\* USER CODE BEGIN 1 \*/

/\* USER CODE END 1 \*/

/\* MCU Configuration--------------------------------------------------------\*/

/\* Reset of all peripherals, Initializes the Flash interface and the Systick. \*/

HAL\_Init();

/\* USER CODE BEGIN Init \*/

/\* USER CODE END Init \*/

/\* Configure the system clock \*/

SystemClock\_Config();

/\* USER CODE BEGIN SysInit \*/

/\* USER CODE END SysInit \*/

/\* Initialize all configured peripherals \*/

MX\_GPIO\_Init();

/\* USER CODE BEGIN 2 \*/

/\* USER CODE END 2 \*/

/\* Infinite loop \*/

/\* USER CODE BEGIN WHILE \*/

**while** (1)

{

/\* USER CODE END WHILE \*/

/\* USER CODE BEGIN 3 \*/

**if**(HAL\_GPIO\_ReadPin(GPIOA,BUTTON\_Pin)==1)

{

HAL\_GPIO\_WritePin(GPIOA,LED\_Pin,*GPIO\_PIN\_SET*);

}

**else**

{

HAL\_GPIO\_WritePin(GPIOA,LED\_Pin,*GPIO\_PIN\_RESET*);

}

}

/\* USER CODE END 3 \*/

}

/\*\*

\* @brief System Clock Configuration

\* @retval None

\*/

**void** **SystemClock\_Config**(**void**)

{

RCC\_OscInitTypeDef RCC\_OscInitStruct = {0};

RCC\_ClkInitTypeDef RCC\_ClkInitStruct = {0};

/\*\* Initializes the RCC Oscillators according to the specified parameters

\* in the RCC\_OscInitTypeDef structure.

\*/

RCC\_OscInitStruct.OscillatorType = RCC\_OSCILLATORTYPE\_HSE;

RCC\_OscInitStruct.HSEState = RCC\_HSE\_ON;

RCC\_OscInitStruct.HSEPredivValue = RCC\_HSE\_PREDIV\_DIV1;

RCC\_OscInitStruct.HSIState = RCC\_HSI\_ON;

RCC\_OscInitStruct.PLL.PLLState = RCC\_PLL\_ON;

RCC\_OscInitStruct.PLL.PLLSource = RCC\_PLLSOURCE\_HSE;

RCC\_OscInitStruct.PLL.PLLMUL = RCC\_PLL\_MUL9;

**if** (HAL\_RCC\_OscConfig(&RCC\_OscInitStruct) != *HAL\_OK*)

{

Error\_Handler();

}

/\*\* Initializes the CPU, AHB and APB buses clocks

\*/

RCC\_ClkInitStruct.ClockType = RCC\_CLOCKTYPE\_HCLK|RCC\_CLOCKTYPE\_SYSCLK

|RCC\_CLOCKTYPE\_PCLK1|RCC\_CLOCKTYPE\_PCLK2;

RCC\_ClkInitStruct.SYSCLKSource = RCC\_SYSCLKSOURCE\_PLLCLK;

RCC\_ClkInitStruct.AHBCLKDivider = RCC\_SYSCLK\_DIV1;

RCC\_ClkInitStruct.APB1CLKDivider = RCC\_HCLK\_DIV2;

RCC\_ClkInitStruct.APB2CLKDivider = RCC\_HCLK\_DIV1;

**if** (HAL\_RCC\_ClockConfig(&RCC\_ClkInitStruct, FLASH\_LATENCY\_2) != *HAL\_OK*)

{

Error\_Handler();

}

}

/\*\*

\* @brief GPIO Initialization Function

\* @param None

\* @retval None

\*/

**static** **void** **MX\_GPIO\_Init**(**void**)

{

GPIO\_InitTypeDef GPIO\_InitStruct = {0};

/\* GPIO Ports Clock Enable \*/

\_\_HAL\_RCC\_GPIOD\_CLK\_ENABLE();

\_\_HAL\_RCC\_GPIOA\_CLK\_ENABLE();

/\*Configure GPIO pin Output Level \*/

HAL\_GPIO\_WritePin(LED\_GPIO\_Port, LED\_Pin, *GPIO\_PIN\_RESET*);

/\*Configure GPIO pin : BUTTON\_Pin \*/

GPIO\_InitStruct.Pin = BUTTON\_Pin;

GPIO\_InitStruct.Mode = GPIO\_MODE\_INPUT;

GPIO\_InitStruct.Pull = GPIO\_PULLDOWN;

HAL\_GPIO\_Init(BUTTON\_GPIO\_Port, &GPIO\_InitStruct);

/\*Configure GPIO pin : LED\_Pin \*/

GPIO\_InitStruct.Pin = LED\_Pin;

GPIO\_InitStruct.Mode = GPIO\_MODE\_OUTPUT\_PP;

GPIO\_InitStruct.Pull = GPIO\_NOPULL;

GPIO\_InitStruct.Speed = GPIO\_SPEED\_FREQ\_LOW;

HAL\_GPIO\_Init(LED\_GPIO\_Port, &GPIO\_InitStruct);

}

/\* USER CODE BEGIN 4 \*/

/\* USER CODE END 4 \*/

/\*\*

\* @brief This function is executed in case of error occurrence.

\* @retval None

\*/

**void** **Error\_Handler**(**void**)

{

/\* USER CODE BEGIN Error\_Handler\_Debug \*/

/\* User can add his own implementation to report the HAL error return state \*/

\_\_disable\_irq();

**while** (1)

{

}

/\* USER CODE END Error\_Handler\_Debug \*/

}