**; Replace with your application code**

**.ORG 0x00**

**LDI R31, HIGH(RAMEND)**

**OUT SPH, R31**

**LDI R31, LOW(RAMEND)**

**OUT SPL, R31**

**CLR R31**

**LDI R31, 0xFF**

**OUT DDRC, R31**

**LDI R31, 0x00**

**OUT DDRB, R31**

**LDI R16, 0**

**CALL SevenSegment**

**OUT PORTC, R17**

**CALL DELAY**

**CLR R30**

**START:**

**IN R30, PINB**

**BST R30, 0**

**BRTS INCREMENT**

**BRTC DECREMENT**

**DECREMENT:**

**DEC R16**

**CALL LIMITERL**

**CALL SevenSegment**

**OUT PORTC, R17**

**CALL DELAY**

**RJMP START**

**INCREMENT:**

**INC R16**

**CALL LIMITERH**

**CALL SevenSegment**

**OUT PORTC, R17**

**CALL DELAY**

**RJMP START**

**SevenSegment:**

**CPI R16, 0**

**BRNE A**

**LDI R17, 0X01**

**RET**

**A:**

**CPI R16, 1**

**BRNE B**

**LDI R17, 0X4F**

**RET**

**B:**

**CPI R16, 2**

**BRNE C**

**LDI R17, 0X12**

**RET**

**C:**

**CPI R16, 3**

**BRNE D**

**LDI R17, 0X06**

**RET**

**D:**

**CPI R16, 4**

**BRNE E**

**LDI R17, 0X4C**

**RET**

**E:**

**CPI R16, 5**

**BRNE F**

**LDI R17, 0X24**

**RET**

**F:**

**CPI R16, 6**

**BRNE G**

**LDI R17, 0X20**

**RET**

**G:**

**CPI R16, 7**

**BRNE H**

**LDI R17, 0X0F**

**RET**

**H:**

**CPI R16, 8**

**BRNE I**

**LDI R17, 0X00**

**RET**

**I:**

**CPI R16, 9**

**BRNE J**

**LDI R17, 0X0C**

**RET**

**J:**

**RET**

**DELAY: ; Subroutine to add a delay of 500ms**

**LDI R22, 4**

**DELAY\_1:**

**LDI R21, 125**

**DELAY\_2:**

**LDI R20, 250**

**DELAY\_3:**

**DEC R20**

**NOP**

**BRNE DELAY\_3**

**DEC R21**

**BRNE DELAY\_2**

**DEC R22**

**BRNE DELAY\_1**

**RET ; RETURNS back to Call**

**LIMITERL:**

**CPI R16, 255**

**BREQ JAY**

**RET**

**JAY:**

**LDI R16, 9**

**RET**

**LIMITERH:**

**CPI R16, 10**

**BREQ EMM**

**RET**

**EMM:**

**LDI R16, 0**

**RET**