A Windows executable walkthrough

1. **Headers**
   - The file begins with 'PE' (Portable Executable).
   - Processor: ARM/MIPS/Intel/...

2. **Sections**
   - The file is mapped in memory according to:
     - The ImageBase
     - The SizeOfHeaders
     - The Sections table

3. **Mapping**
   - explorer.exe
   - Sections table

4. **Imports**
   - Data structures are parsed to follow the OptionalHeader.
   - Each entry specifies a DLL name.
   - Number of entries in the Import table.

5. **Exports**
   - Code is called at the entry point.
   - The call to the code goes via the IAT to the APIs.

**Notes**

- **MZ HEADER**
  - PE executable
  - Starts with 'MZ' (details of the MS-DOS developer).

- **PE HEADER**
  - IMAGE_FILE_HEADER
  - Contains the ImageBase, Sections table, etc.

- **OptionalHeader**
  - Optional only for non-standard 16-bit but required for the executables.

- RVA: Relative Virtual Address
  - Address relative to ImageBase (at ImageBase, RVA = 0)

- **Imports**
  - Code in the exports of a DLL to be imported.
    - Not required but provides a speed-up by reducing look-up.

- **Init**
  - Import Library
  - Null-terminated list of pointers to Init, Name structures.

- **Exports**
  - Import Library Table
  - Null-terminated list of pointers.
  - On file it is a copy of the Init.
  - After loading it points to the exported functions.