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The current Release Version 1.5 of Watchface Studio is second beta version release with some limitations

- Background images need to be edited and prepared outside the studio if certain area of the image needs to be selected.
- The snap to nearest is not implemented.
- The icon toggle to invert image is not implemented.
- Custom images for Fonts and additional icons (smaller than background) is not implemented.
HOTWatchface Studio
This application provides an easy environment for designing custom Watchfaces. It allows user to pick and arrange Watchface components and generate a new Watchfaces. User can run this generated Watchface on the Windows simulator environment to confirm the functionality. The simulator also generates the Watchface (.wf) and .hot file. The .wf file is a project file. The .hot file can be loaded to the watch using the HOTWatch phone application.

Prerequisites
- Microsoft Windows 7 or Higher
- HOTWatch Simulator Installation

1. Watchface Studio Layout
1.1 Screen preview & Options

1.2 Watch Screen Number

Each watchface .hot file will have a default screen number (1-6) where it will be loaded in the watch. This screen number selection is located on the top left corner of the screen. User should select a screen number where his watchface will be loaded. Only 1st, 2nd and 3rd screens supports analog needles.
1.3 Watchface elements
This tool bar lists a set of components which can be used to build the Watchface. These components include digital hour/minute, analog needle hour/minute, date (day, month and year), weekday, battery level, Bluetooth connection status and background images.

![Watch Face Elements](image)

1.3.1 Adding an Element to Watchface
- Add a component to watchface by just clicking on the component and select type of component (see section 1.4)
- Drag and drop the component anywhere in the screen using mouse
- Fine align component using arrow keys and noting the xy positions

1.3.2 Removing an Element from Watchface
User can remove a component from watchface by selecting it and pressing the “Delete” button

1.4 Element Type
This section contains the type of elements (font type, needle shape etc.) of the selected watchface component. The font and needles can be built in types which are already present in the watch OS. Background Image and Needles can be custom where user creates his own image for the needle and background. Custom font is not supported in the current version.
Custom Needle's Pivot Point
This is the point inside the needle where it is fixed to the watch surface and act as its center of rotation. Pivot point is indicated by a small cross on the custom needles. This can be moved inside the image. User can drag it to location where the needle's center of rotation is located. If the user wants the hour needle and minute needle rotate based on same center, then they have to place the cross on the minute needle and hour needle at exact same point overlapping each other (both mouse and arrow keys can be used for this alignment).

1.5 Watch Preview
This window provides a preview of how the final Watchface will look.

1.6 Run Simulator
After creating a desired watchface with backgrounds and watch face elements, user has to click the “Run” button to start the simulator and preview the designed watchface.

If the “Generate Hot File” is not selected then simulator will run in preview mode. If “Generate Hot File” is selected then the simulator will show the preview of the watch face designed and will also generate a .hot file
1.7 **Hot File creation (.hot)**

Hot files are the vehicle for transferring the user designed Watchfaces to the HOT watch. Once the user finalizes the Watchface design, they can create a HOT file by checking the “Generate Hot File” checkbox and selecting Run. The HOTWatch simulator creates the .hot file along with the preview.

With the hot file creation, one JPEG image will be created for the watchface.

This .hot file should be transferred to the phone (android, iPhone and Windows) by sending it as email attachment or copying file (only in android or windows). Make sure HOTWatch app is running in the phone.

In android or windows use File Manager or ES Explorer navigate to the .hot file on the phone and select it to transfer the file to the watch.

You can also select the file from email attachment. The file will be sent to watch by the HOTWatch app.

1.8 **Watchface file creation (.wf)**

The .wf file is the project file that stores all the component information for the watchface. A set of images (if custom background or needles are selected) are also stored along with the .wf file. User can save and reload his project for future improvements. The project file has to be saved at the end after hot file generation.
2. Creating a Simple Watch Face using Studio

- Start Watchface Studio from StartMenu → HOTWatchSimulator → WatchfaceStudio.exe
- Select the screen number.

- Select a Background Image
- Select a Hour Needle

- Select a Minute Needle
Click on “RUN”
Preview will look like as shown below

2.1 Create .hot File
- Select “Generate Hot File” check box.
- Click on Run
- Select path and file name. Click on save.

2.2 Create .wf File
- After creating .hot file, click on save option.
  Then .wf file will be created in same path given for hot file creation.

3. Adding a Custom Needle
Watch Face Studio supports using custom needles. The image of the needle needs to be created in its 12o clock position. Hour needle should be of 14x42 pixel (max) size. Minute needle should be of 14x54 pixel (max) size. The image should be of depth 1 bit (black-white). Needle can be designed in any image editing tools like MS Paint, Photoshop, and GIMP etc. The edited image must be saved in .bmp format. After creating the needle it has to be added as a property using the below steps
- Select Hour/Minute needle button on the tool bar.
- Browse and select the needle using the browse option provided in the Needle Element type box.
- Needle will appear on the watch-face preview window.
- Drag it to position it properly.
The procedure the add background image is similar to adding the needle.
4. Creating a background Image Compatible for HOTSmartWatch

The desired image can be imported to the watch face studio, as shown below.

The image will be dithered and displayed in the preview screen.

If a particular area of the image has to be put as background for the watch face then crop the unnecessary portion of the image using simple image editing tools like MS-Paint, Gimp etc. Save it as JPG or BMP file. Import it in the Watchface studio.

To completely design a Watchface background:

1. Create a new image file with 144x168 dimension in any image editing tool like Gimp, Photoshop etc.
2. Design the background and save it in .JPG or .BMP formats.
3. Import this file into the Studio to add other elements and complete the watch face.

The below given steps will help to create background image compatible with HOTSmartWatch using open source image editor GIMP.

4.1 Step 1: Open the desired picture in gimp
4.2 Step 2: Choose the Scale Image option inside the Image Tab

4.3 Step 3: Set Width to 144 and Height to 168
4.4 Step 4: Change the image mode to Indexed

4.5 Step 5: Select the below shown options and click Convert
4.6 Step 6: Chose File -> Export

4.7 Step 7: Export the image as .BMP file (use bottom right drop down menu)
5. Creating a Custom Minute Needle for Watch Face

5.1 Using Paint (Windows)

1. Open Paint
2. Click on Resize.
3. Set the horizontal and vertical dimensions as 14x54 pixels.

4. Design the needle
5. Save as .JPG or .BMP file
6. Import it into Watch face studio

5.2 Using GIMP (open source)

Step 1: A sample needle image from the internet is opened in GIMP
Step 2: Check the Canvas Size (Image -> Canvas Size)

Step 3: Keep the width less than or equal to 14 pix (max) and height less than or equal to 54 pix (max)
Step 4: Export the image as .BMP (File -> Export As)